



Pennsylvania Power & Light Company

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July 28, 1983

Dr. Thomas Murley
Regional Administrator Region I
U.S. Nuclear Regulatory Commission
631 Park Avenue
King of Prussia, PA 19406

SUSQUEHANNA STEAM ELECTRIC STATION
INTERIM REPORT OF A DEFICIENCY INVOLVING
SDV VENT & DRAIN VALVE WATERHAMMER
ERs 100450/100508 FILE 821-10
PLA-1762

Dear Dr. Murley:

This letter serves to provide the Commission with an interim report on a deficiency involving SDV Vent and Drain Valve and Waterhammer Loads.

This deficiency was originally reported by telephone to Mr. G. Rhoades at NRC Region I on June 28, 1983 by Mr. J. Saranga of PP&L as potentially reportable under the provisions of 10CFR50.55(e) for Unit II. It is anticipated a final report will be submitted in November, 1983.

The attachment to this letter contains a description of the deficiency, its cause, an analysis of safety implications and the corrective action taken and planned. This information is furnished pursuant to the provisions of 10CFR50.55(e).

Since the details of this report provide information relevant to the reporting requirements of 10CFR21, 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

JBW:sab

Attachment

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ERs 100450/100508

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

Records Center
Institute of Nuclear Power Operations
1100 Circle 75 Parkway, Suite 1500
Atlanta, GE 30339

INTERIM REPORT ON SDV VENT & DRAIN VALVE WATERHAMMER

PROBLEM: General Electric SIL-331, Supplement 4 indicated that a waterhammer load in the Scram Discharge Volume (SDV) Vent and Drain lines, due to the opening of the SDV vent and drain valves on scram reset, should be incorporated in the SDV system design. A review of the stress report for the SDV indicates that this load was not considered.

CAUSE: In October of 1980, General Electric issued SIL-331, Supplement 4, which addresses concerns regarding the design of the SDV and its associated instrumentation, piping, and valves. This was the result of an incident at the Hatch Nuclear Plant where floats in level instrumentation were crushed. It was later determined that the damage was due to a waterhammer in the SDV vent and drain lines caused by the opening of the vent and drain valves during scram reset. Consequently, GE made recommendations for design modifications to the level instrumentation, and indicated the "transient load" should be evaluated in the design of vent and drain lines. An investigation of the Stress Report for the piping at Susquehanna indicated that this load was not considered for Unit I or II.

EXTENT: The SDV vent and drain valve waterhammer phenomena is limited to the SDV system piping. However, the full impact of the load on the SDV System is not known at this time. This information will be provided following testing to determine the load.

SAFETY IMPLICATIONS: If it is determined that the SDV Vent and Drain Valve Waterhammer load exceeds the allowable design stress for the pipe, then the failure of this pipe could result in a leak outside of containment. This would be similar to the accident postulated in NUREG-0803; however, it is anticipated that it would be less severe since the crack size would be smaller. Furthermore, should this break occur it would be mitigated in the same manner as NUREG-0803; for which PP&L has demonstrated adequate mitigation capability (please see PLA-1292, PLA-1132, PLA-987).

CORRECTIVE ACTION: PP&L is evaluating various vendors to perform the necessary testing and analysis to determine the load and its impact. Additional corrective action will be determined when the results of this analysis are available.