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July 21, 1983

50-388

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
CAVITATION OF JET PUMPS DUE TO IHSI COOLING
ER 100508 FILE 821-10
PLA-1749

Dear Dr. Murley:

This letter serves to provide the Commission with an interim report on a deficiency involving cavitation of the Unit 2 jet pumps due to IHSI cooling.

This deficiency was originally reported by telephone to Mr. R. Architzel of NRC Region I on June 21, 1983 by Mr. J. Saranga of PP&L as potentially reportable.

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). It is anticipated that a final report will be issued in October, 1983.

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

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

JBW:sab

Attachment



A027
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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
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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

SUBJECT:

Operation of Unit 2 jet pumps in a cavitation mode.

DESCRIPTION:

During Induction Heating Stress Improvement (IHSI), the Unit 2 Recirculation System was utilized to supply cooling water. During the time period from 5/13/83 to 5/17/83, Loop "A" of the recirc. system was run at 70% pump speed resulting in jet pump operation in the cavitation region. Loop "B" was not in operation and did not experience cavitation. GE was notified of the condition and was requested to assess the safety implications of the incident.

CAUSE:

A restriction on pump speed was placed on the recirc. system based on the unit condition, that is, with the vessel head being removed and limited internals installed. The restriction imposed on pump speed was not followed. As a result, the jet pump operated in the cavitation mode.

SAFETY IMPLICATIONS:

GE has determined that if the stresses which were incurred during operation in the cavitation region were of sufficient amplitude, the fatigue life of the incore housings, jet pump riser braces, and jet pump thermal sleeves may have been reduced. Of these components, the jet pump riser brace welds are the most sensitive to the incurred stresses. Assuming excessive usage, a possibility exists for the failure of these components during a design basis accident. In this case, the present licensing basis for fuel peak cladding temperature might be exceeded. Therefore, PP&L considers this deficiency to be reportable under the provisions of 10CFR50.55(e).

CORRECTIVE ACTION:

GE has performed a vibration test to assess the amplitude of stress experienced by the incore housings, jet pump riser braces, and jet pump thermal sleeves. The test simulated the condition which occurred during cavitation. In addition, a detailed visual inspection of the jet pump is to be performed. Preliminary vibration test reports have indicated that the jet pump riser braces have adequate fatigue strength for the design life of the plant. However, GE has not completed its final analysis.

FINAL REPORT:

A final report will be released when GE's analysis is completed. It is anticipated that the final report will be issued in October, 1983.