PP&L

TWO NORTH NINTH STREET, ALLENTOWN, PA. 18101 PHONE: (215) 770-5151

NORMAN W. CURTIS
Vice President-Engineering & Construction-Nuclear
770-5381

May 29, 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 DEFICIENCY INVOLVING
PACIFIC SWING CHECK VALVE FAILURE
ER's 100450/100508 FILES 840-4/900-10
PLA-819

Dear Mr. Grier:

This letter serves to confirm information provided by telephone to NRC Region I Reactor Inspector, Mr. L. Narrow, on April 10, 1981 by Mr. A. R. Sabol of PP&L. Mr. Narrow was advised that the SSES Unit #1 RCIC Turbine Exhaust Line Check Valve, manufactured by MCC/Pacific Valve Co. had failed during functional testing. This deficiency is considered reportable under the provisions of 10 CFR 50.55(e).

The attachment to this letter contains a description of the deficiency, its cause, safety implications and the corrective action planned. This information is submitted 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 for reporting in compliance thereto.

We expect to provide a final report on this condition by July 31, 1981. We trust the Commission will find this information to be satisfactory.

Very truly yours,

NW Curtis

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

RAS:sab

cc: Mr. Victor Stello (15)
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
U. S. Nuclear Regulatory Commission
Washington, D.C.

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

INTERIM REPORT
ON
PACIFIC SWING CHECK
VALVE DISC FAILURE

SUSQUEHANNA STEAM ELECTRIC STATION
UNITS 1 & 2

INTERIM REPORT

1. Description of Problem

Bechtel NCR-7166 identified that the RCIC Turbine Exhaust Line Check Valve failed during ISG functional testing. The stud (integrally cast with the disc) which attached the disc to the valve hinge arm broke off during system testing. The valve is a 10 inch, nuclear class 2, carbon steel, 150 # rated swing check manufactured by MCC/Pacific Valve Co. The disc is a casting made of SA-351, grade CA-15 material, (martensitic stainless steel).

2. Cause of Deficiency

Two unrelated conditions contributed to the failure. First, erratic steam flow conditions caused the valve disc to cycle violently open and closed. As a result, the end of the disc stud gradually wore a hole in the valve bonnet which served as the stop. This additional travel allowed the disc to impact against the valve body due to a lack of clearance. The loads and stresses experienced by the disc resulted in a disc stud fracture.

Secondly, the stud broke off in a brittle manner, which is abnormal for properly heat treated CA-15 material.

3. Analysis of Safety Implication

The safety function of the valve is to provide short term containment isolation during an accident condition. The failure is considered a significant deficiency that is reportable under 10CFR50.55(e).

4. Corrective Action

Bechtel Engineering is currently studying the failure to determine if a system design problem exists. They are working with plants that have had similar problems in the RCIC system and with General Electric design engineers. Modifications will be performed as deemed necessary.

To determine if metallurgical irregularities exist, PP&L has sent the subject disc to an independent testing lab for metallurgical examination. If the test results indicate a material problem, Bechtel will work with Pacific Valve Co. to determine if the material problem is isolated to the subject disc or if other check valve discs made of SA-351, grade CA-15 material, are affected. All Pacific check valve discs for which unacceptable mechanical properties are identified will be replaced.

5. Final Report

A final report will be released upon resolution of all issues. It is anticipated that the final report will be issued by July 31, 1981.