

ATTACHMENT 1
SURRY POWER STATION, UNIT NO. 2
DOCKET NO: 50-281
REPORT NO: 82-053/03L-0
EVENT DATE: 09-14-82

TITLE OF THE EVENT: Inoperable Charging Pump Service Water Pump

1. DESCRIPTION OF THE EVENT:

On September 14, with the unit at full power, operations personnel venting 2-SW-P-10A as per Shift Supervisor's orders discovered that the pump was air bound. Inoperability of this pump is contrary to Technical Specification 3.3.A.8.b and is reportable per Technical Specification 6.6.2.b.(2).

2. PROBABLE CONSEQUENCES and STATUS of REDUNDANT EQUIPMENT:

The charging pump service water pumps supply cooling water to the charging pump intermediate seal coolers and the charging pump lubricating oil coolers. During the short period of time that the pump was inoperable, the redundant pump (2-SW-P-10B) remained operable. Therefore, the health and safety of the public were not affected.

3. CAUSE:

The presence of air in the pump is due to insufficient NPSH. Four charging pump service water pumps, along with three Air Conditioner Chiller units are located in No. 3 equipment room. The aforementioned components are supplied with service water, via rotating strainers, from two 6" supply lines. Each supply line is gravity fed from the intake canal.

Two-inch branch lines supply service water to the charging pump service water pumps, while the service water lines to the chiller units are four-inch lines.

Experience has shown that the performance of the charging pump service water pumps are sensitive to the available NPSH.

A recent modification (DC 80-42) attempted to resolve the NPSH problems of the service water system. Installation and testing, completed in early spring, indicated satisfactory performance; however, an intermittent problem is now indicated.

4. IMMEDIATE CORRECTIVE ACTION:

The service water flow through the air conditioning chillers was reduced, thereby increasing the available NPSH to the service water pumps. The service water pump was vented and returned to service.

5. SUBSEQUENT CORRECTIVE ACTION:

None.

6. ACTION TAKEN TO PREVENT RECURRENCE:

A Design Change has been initiated that will relocate two of the charging pump service water pumps, i.e. lower the pumps and increase the size of the suction piping to the pumps. In an effort to reduce air inleakage in the suction header, a preventative maintenance procedure has been implemented.

7. GENERIC IMPLICATIONS:

The NPSH problem is Generic at both Surry Units.