



ATTACHMENT 1

SURRY POWER STATION, UNIT NO. 2

DOCKET NO.: 50-281

REPORT NO.: 82-041/03X-1

EVENT DATE: 06-26-82

TITLE OF THE EVENT: UNRELIABLE STEAM GENERATOR LEVEL INSTRUMENTATION

1. Description of the Event:

On June 26, 1982, the 'B' steam generator level indicator, LI-486, drifted  $\approx$  5% high. The bistables were placed in trip and a containment entry was made to look for leaks. Upon finding none, the transmitter zero was adjusted to match the other channels and LI-2-486 was returned to service.

When the indicated level increased again on June 27, the bistables were tripped and a new transmitter installed. The output from this transmitter appeared to be 10% high, so in accordance with Engineering Study 82-45, the isolator was adjusted to correct the output for Automatic feed control. The protection bistables remained in trip.

On June 27, the signal from LT-2-486 returned to normal. The isolator was rescaled and the channel returned to service.

The bistables were tripped on July 6, when the LI-2486 level began drifting up. The transmitter was again replaced and since the output was still high, the isolator was adjusted in accordance with Engineering Study 82-45.

During checks on July 8, the equalizing valve came under suspicion and was replaced. No improvement was seen.

To correct the increasing error signal from LI-2-486, the isolator was adjusted to 15% compensation on July 10.

During the next two days of troubleshooting, the power supply was replaced, all the I/V blocks were replaced, the transmitter amplifier board was replaced and the transmitter was swapped with an older style (Model 1153DA4) without correcting the problem.

On July 13, the installed transmitter was calibrated to a test box and the instrument rack was calibrated with a spare transmitter. After removing the test rigs and reconnecting the field cables, the output was still high. The technicians removed the terminal box cover and, by manipulating the wires at the splice, caused the signal to return to normal.

Since the channel failure was in the non conservative direction and minimum degree of redundancy as required by Technical Specification (T.S.) Table 3.7-1 and T.S. Table 3.7-2 was not continuously available, this event is contrary to T.S.3.7.B and reportable pursuant to T.S.6.6.2.b.(2).

2. Probable Consequences and Status of Redundant Equipment

Steam Generator level channel III, LI-2-486, provides both control and protection functions. Automatic reactor trip and auxiliary feedwater initiation will occur when 2 of 3 channels on either steam generator indicates (1) low water level coincident with a steam flow/feedflow mismatch or (2) Low Low steam generator level. Since the redundant channels remained operable throughout this event, the health and safety of the public were not affected.

3. Cause

The cause of this event was a wire broken at a splice. This splice, stranded field cable to solid wire from the transmitter, was installed during Design Change 77-45.

4. Immediate Corrective Action

The bistables for LI-2-486 were placed in trip and an investigation of the problem initiated.

5. Subsequent Corrective Action

The defective splice was replaced, the Environmentally qualified Transmitter reinstalled, and the channel returned to service.

6. Action Taken to Prevent Recurrence

A determination was made to solder connections when dealing with solid conductors. Procedure EMP-C-EPL-106 (Corrective Maintenance Procedure for Raychem WCSF-N In-Line Field Splices) was modified to reflect this change.

7. Generic Implications

None.