

DUKE POWER COMPANY
OCONEE UNIT 3

Report No.: AO-287/75-4

Report Date: March 12, 1975

Occurrence Date: February 26, 1975

Facility: Oconee Unit 3, Seneca, South Carolina

Identification of Occurrence: Engineered Safeguards logic buffer failure

Conditions Prior to Occurrence: Unit at 75 percent full power

Description of Occurrence:

On February 26, 1975 the Engineered Safeguards Analog Channel 1 on Line Calibration Test was performed for Oconee Unit 3. When Analog Channel 1 was placed in the test position, it tripped and tripped Digital Channel 4; however, Digital Channel 3 did not receive a trip signal. The test was repeated several times with both Digital Channels 3 and 4 tripping as required.

Designation of Apparent Cause of Occurrence:

The apparent cause of this occurrence was the intermittent failure of one set of contacts of a mercury wetted relay on the output of the Analog Channel 1 logic buffer. The relay itself functioned properly because a trip signal was received at ES Digital Channel 4.

Analysis of Occurrence:

The Engineered Safeguards (ES) System consists of eight two-out-of-three coincidence logic networks for actuating the equipment in four safeguards systems; thus, each system is actuated by two redundant coincident logics or protective channels. In this incident, one of two redundant low pressure injection ES channels was placed in a two-out-of-two logic. The redundant ES low pressure injection channel remained in a two-out-of-three logic configuration. Thus, the Engineered Safeguards System remained capable of performing its designed function. It is concluded that the health and safety of the public was not affected by this incident.

Corrective Action:

The logic buffer was replaced even though the failure could not be reproduced. This was the first such failure of this type of relay at Oconee and is considered an isolated incident. The periodic surveillance program is considered adequate to detect such failures.

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Failure Data.

The relay that malfunctioned is manufactured by the C. P. Clare and Company
Part No. CH5TN-1005.