

Reg Central File

No. 51

Date 3/21/72

DIVISION OF COMPLIANCE
NOTIFICATION OF AN INCIDENT OR OCCURRENCE

50-267

Facility: DUKE POWER COMPANY (OCONEE 1)

Problem:

At 11:00 A.M., March 20, 1972, the licensee informed DRL by telephone that 21 of the 52 Inconel in-core instrument stub tubes (0.75 inch ID - schedule 160) that penetrate the bottom of the reactor vessel had broken off within the vessel. The information which follows has been obtained by the Region II (Atlanta) Compliance Office from our Compliance inspector who was dispatched to the Oconee site on March 21.

Our inspector reports that the 21 in-core instrument stub tubes that failed had been sheared off in the vicinity of the weld that joins the stub tube to the bottom of the vessel. One additional stub tube had failed at this location, but was not completely sheared. Five in-core instrument stub tubes were found to have failed in the vicinity of the flow distributor plate and several other stub tubes were bent at a point 2-3 inches above the seal weld. In addition to the stub tube failures, a thermocouple guide extending from the top vessel head had failed and one accelerometer used in measuring vibration had become detached.

Pieces of the failed stub tubes have been found throughout the reactor coolant system, ranging in size from buckshot to pieces about 2" in diameter. It was observed that the tube sheet and tubes in the steam generator "A" were extensively damaged, apparently as a result of the debris in the system. The tubes projecting above the tube sheet in steam generator "B" were also observed to be damaged and in some cases torn; however, the damage was not as extensive as that in steam generator "A". In addition, the thermocouples located in steam generator "B" were found to be damaged or broken off.

The failure mode has not as yet been determined; however, the licensee believes at this time that flow induced vibration of vessel internals was the primary cause of failure.

The extent of the delay in the completion of the plant is not known at this time; however, the licensee has informed the Federal Power Commission that the unit will not be available for the summer and winter peak loads for this year.

Action:

1. Both the licensee and Babcock & Wilcox, the nuclear steam supplier, have initiated investigations of the matter.
2. The licensee has been told by Compliance that a complete report on this occurrence should be submitted to DRL.

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3. Commissioner Ramey's Technical Assistant, Commissioner Doub's Technical Assistant and the staff of the Joint Committee on Atomic Energy have been informed by telephone.

Contacts:

Further information on this problem may be obtained from:

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