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Files

THRU: Edson G. Case, Director, RS
R. L. Ferguson, Engineering & Components Branch, RS

OCONEE NUCLEAR STATION UNITS 1, 2 and 3
ELECTRICAL SYSTEMS - DOCKET NOS. 50-269, 270 and 287

Additional information was requested from Mr. C. Wylie (Duke Power Co.) via telecon, May 12, 1967. This memo documents preliminary answers Mr. Wylie presented via telecon, May 16, 1967.

1. All power plants installed since 1952 have been designed to reject full load while maintaining the plant auxiliary loads. All units (approximately 22) have been tested prior to being placed in commercial operation. There have been no failures since 1952. On a recent test of a 350 mw unit of the Marshall Plant, the generator oversped to 3900 rpm during the test — the overspeed trip is set at 3960 rpm. There have been no actual abnormal conditions on the Duke system which required this plant feature to be used.

2. Duke's experience in starting one of the hydro stations under supervisory control has been 8 failures in 1000 start attempts. The particular unit reported has a more complex communication system than Keowee. It consists of a 3-mile leased telephone line from the Lakewood Substation to the Power Control Building and a 25-mile microwave link to the hydro station. Mr. Wylie is attempting to get a better breakdown of the cause of failure to determine the effect of the communication system and the time distribution of failures.

3. The gas turbines at Lee are new installations, therefore, no information is available. Mr. Wylie is attempting to get suitable information from the manufacturer.

4. Duke's outage experience with overhead transmission lines has been better than 1/100 mi/year and outage experience for all underground cables, including distribution cables to homes, has been 1/70 mi/year. This underground cable outage rate is not applicable to the 13.8 kv cable from Keowee since it has superior insulation, is armored, and is installed in a controlled access area. A 1955 IEEE Report states an outage rate of .6-.7/100 mi/year for underground secondary network cable.

cc: Edson G. Case, Dir., RS
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