

MAY 15 1970

Peter A. Morris, Director  
Division of Reactor Licensing

DUKE POWER COMPANY, OCONEE NUCLEAR STATION; DOCKET NOS. 50-269, 50-270 AND 50-287

During the review of the Oconee applications by the Electrical Systems Branch, several items have been noted which do not meet our present day criteria. These items were discussed at meetings with the applicant on April 2 and May 1, 1970.\*

It appears that further discussion will not resolve the disagreement between the applicant and DRS on two of these items. The items and action recommended for their resolution are discussed below:

a. Operation With Less Than Four Pumps

The applicant proposes to operate the Oconee units on only one loop if the two reactor coolant pumps in the other loop are inoperable. In order to provide adequate protection during this mode of operation, the applicant proposes to manually change several Reactor Protection System trip set points. The applicant was informed that the use of manual adjustments does not meet our interpretation of Section 4.15 of IEEE 279. The main point of the applicant's argument is that the adjustments are made while the reactor is shut down. It is our judgment that since single loop operation is a planned mode of operation, the design must provide positive means of assuring that the more restrictive set points are used as required by IEEE 279. This is similar to the position taken by DRL on the Palisades, Robinson, and Indian Point No. 2 plants. The fact that single loop operation is preceded by a reactor shutdown does not make the Oconee design significantly different from that originally proposed for the above plants. We recommend that DRL take the same position on the Oconee design.

b. Use of Automatic Transfer Functions In the Auxiliary Power System

The design of the auxiliary power distribution system includes provisions for the automatic transfer of power to redundant 600 volt buses which supply engineered safety feature loads.

OFFICE: Copies of the memos which report the results of these meetings are enclosed.

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This feature was not identified during the review of the construction permit applications. Prior to the May 1 meeting, the applicant was requested to identify those loads for which automatic transfer is necessary in order to satisfy safety requirements. The only load so identified is one of the three containment fan cooler units. It is our judgment that the use of an automatic transfer scheme unnecessarily reduces the independence of redundant ESF loads. Therefore, we recommend that the applicant be required to eliminate automatic transfer between redundant ESF buses except where its use is necessary to satisfy safety requirements.

As a result of discussions on the automatic transfer discussed above, a question regarding the design of the emergency power supply has been raised. In each Oconee unit, each of the three ESF buses receive power via two common main feeder buses. In the event of an accident coincident with loss of offsite power, one preselected hydro unit will supply power to the main feeder buses of the affected unit. If this hydro unit or its distribution circuit is inoperable, the other hydro unit will supply power to the main feeder buses via a different distribution circuit. Although this design is similar to that proposed for the construction permit, it does not meet present day criteria which require that the ESF loads be separated into two, or more, redundant load groups with each group having access to a separate and independent emergency power source. In order to provide a basis for accepting the proposed design, it is requested that the question in Enclosure 1 be transmitted to the applicant.

It is expected that the remaining items identified by the Electrical Systems Branch will be resolved by the answers to questions previously transmitted to the applicant and by discussions on the technical specifications.

Original signed by  
E. G. Case

ESB-26  
DRS:ESB:RDP

Edson G. Case, Director  
Division of Reactor Standards

Enclosures:

1. Question for Transmittal to the Applicant
2. ESB-15, Memo to Files Dated April 16, 1970
3. ESB-23, Memo to Files Dated May 12, 1970

bcc: Edson G. Case  
V. Moore  
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DATE		5/13/70	5/ /70	5/ /70	5/ /70

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ENCLOSURE 1

QUESTION TO BE TRANSMITTED TO THE APPLICANT

We understand that the design of the Station Distribution System is such that each of the three engineered safety feature buses is connected to both of the unit's main feeder buses. We also understand that, when required, all three buses receive power from only one of the emergency power sources at a time. Thus, the redundant engineered safety feature loads are effectively connected in parallel regardless of the power source. Provide an analysis of your design to show that the independence and reliability of the redundant engineered safety feature loads are comparable to the independence and reliability provided by a split-bus design such as that shown in Figure 1 of the "Proposed IEEE Criteria for Class 1E Electrical Systems For Nuclear Power Generating Stations," dated June, 1969.