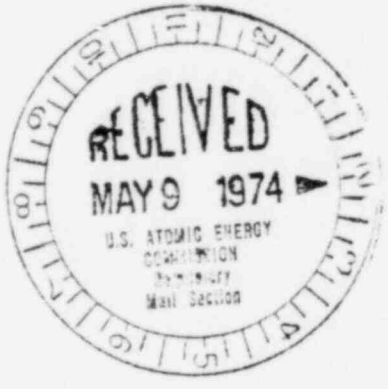
DUKE POWER COMPANY
POWER BUILDING
422 SOUTH CHURCH STREET, CHARLOTTE, N. C. 28201

A. C. THIES
SENIOR VICE PRESIDENT
PRODUCTION AND TRANSMISSION

P. O. Box 2178

May 1, 1974



Mr. Angelo Giambusso
Deputy Director for Reactor Projects
Directorate of Licensing
Office of Regulation
U. S. Atomic Energy Commission
Washington, D. C. 20545

Re: Oconee Nuclear Station
Docket No. 50-269, -270, -287

Dear Mr. Giambusso:

Please find attached a description of the errors assumed by the safety analyses to determine the Oconee Reactor Protective System trip setpoints. This information is submitted in response to an informal request by members of your staff.

Very truly yours,

A. C. Thies

A. C. Thies

ACT:gje

Attachment

REGULATORY DOCKET FILE COPY

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1. High Flux Trip. The power level indicated by the neutron flux is assumed to have a maximum error of -6.5% of rated power. All accident analysis calculations assume that the high flux trip will not actuate until the setpoint has been exceeded by 6.5% of rated power. The components of this total error are:

   2.0% heat balance error
   4.0% neutron power measurement error
   0.5% setpoint error
   6.5% total power measurement error

2. High RC Pressure Trip. The total RC pressure measurement error is assumed to be -30 psi. It is further assumed that the RC pressure at the hot leg tap is 30 psi less than the pressure at the core outlet. All accident analysis calculations assume that the high RC pressure trip will not actuate until the RC pressure at the core outlet exceeds the trip setpoint by 60 psi.

3. Low RC Pressure Trip. The total RC pressure error is assumed to be +30 psi. It is further assumed that the RC pressure at the hot leg tap is 30 psi less than the pressure at the core outlet. All accident analysis calculations assumed that the low RC pressure trip will not actuate until the RC pressure at the core outlet falls to the value of the trip setpoint.

4. High RC Outlet Temperature. The total RC temperature measurement error is -1.0F. All accident analysis calculations assume that the high RC outlet temperature trip will not actuate until the RC outlet temperature has exceeded the trip setpoint by 1.0F.

5. Variable Low RC Pressure Trip. This trip function uses both the RC outlet temperature measurement and RC pressure measurement signals. The errors for the input parameters are treated as per the descriptions in items 3 and 4. Accident analysis calculations do not show a variable low pressure trip until the pressure and temperature parameters exceed the trip conditions by the amount of the assumed errors.

6. Power/Imbalance/Flow Trip

This trip function requires measurement signals giving the flux in the top half of the core, the flux in the bottom half of the core, and the RC flow rate. The flux measurement error is treated as in item 1. (error = -6.5% of rated power). The RC flow signal utilized in this trip module is calibrated to be less than the actual RC flow for all conditions. Therefore, it is not necessary to assume a flow measurement error. The offset limits are error adjusted, according to the following equations and then the adjusted offset limits are converted to imbalance setpoints.

$$\theta_{EA} = \theta_R - \theta_R B - E, \ \theta_R > 0$$

$$\theta_{EA} = \theta_R - \theta_R B + E, \ \theta_R < 0$$

where: θ_{EA} = error adjusted offset limit

θ_R = real offset limit

B = incore to out-of-core detector bias

E = offset measurement error

The errors used for the offset corrections are as follows:

	Bias	Offset Measurement Error
Oconee 1	0.126	0.068
Oconee 2,3	0.150	0.075

7. Flux/Pump Monitor Trip. The flux measurement error is treated as in item 1. One pump monitor is always assumed to be inoperative.