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Docket No. 50-348
No. 50-364

Director, Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Room 116 - Phillips Building
7920 Norfolk Avenue
Bethesda, Maryland 20014

Attention: Mr. S. A. Varga
Mr. A. Schwencer

JOSEPH M. FARLEY NUCLEAR PLANT - UNITS 1 AND 2
MULTIPLE ROD DROP ANALYSIS

Gentlemen:

On November 19, 1979, Westinghouse Electric Corporation notified the NRC of a possible non-conservatism in the dropped rod analyses for certain classes of Westinghouse plants. Subsequent evaluation by Alabama Power Company resulted in the determination that Farley Nuclear Plant was one of the affected plants and was so reported in Licensee Event Report Number 79-017/01T. The corrective action stated in the LER and in my letter to Mr. Schwencer dated November 21, 1979, required that the rod control system be placed in manual whenever reactor power is above 90 percent with control rod bank "D" less than 215 steps withdrawn. This action would preclude the possibility of a multiple dropped rod event causing a power overshoot exceeding rated thermal power.

Subsequent operation at Farley Nuclear Plant has shown this commitment to be excessively restrictive under certain conditions, i.e., when a rapid reduction in turbine power occurs or is necessary to prevent equipment damage or plant trip. Manual rod control speed is limited to 48 steps per minute compared to a maximum speed of 72 steps per minute in automatic control. The lower manual rod control speed prohibits manual reduction of reactor power at the rate necessary to match a rapid reduction in turbine power and thus causes a significant increase in the reactor coolant T_{AVG} during a load rejection/rapid reduction event. The increased T_{AVG} can in turn result in an automatic over-temperature ΔT turbine runback signal which compounds the problem and would ultimately generate an unnecessary reactor trip.

The above scenario was considered when the corrective action stated in the LER was proposed. The original provision which allowed automatic rod control when control rod bank "D" is greater than 215 steps withdrawn

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was intended to allow automatic rod insertion during a turbine runback occurring from nominal full power conditions. During such a transient, however, rod insertion would result in a bank "D" position less than 215 steps withdrawn with power greater than 90%, thus requiring manual rod control at that time. Also, to avoid inadvertently violating the commitment, the plant staff has implemented the requirement so as to require manual control whenever reactor power is greater than 85%, regardless of bank "D" position.

Alabama Power Company feels that is is reasonable for both Units 1 and 2 to amend the commitment contained in LER Number 79-017/01T and my letter dated November 21, 1979, to allow automatic rod control during any rapid load reduction event based on the following:

1. The probability of having a multiple rod drop event without reactor trip concurrent with a rapid load reduction event should be extremely low.

2. The rapid load reduction event would generate a rod insertion signal which would tend to counteract any rod withdrawal signal generated by a dropped rod event.

3. The short term nature of a rapid load reduction event would help ensure that during that time the operator would monitor rod control system operation and immediately return to manual control if rod withdrawal began.

If you have any questions, please advise.

Yours very truly,

F. L. Clayton, Jr.

RWS:rt

cc: Mr. R. A. Thomas
Mr. G. F. Trowbridge
Mr. J. P. O'Reilly
Mr. L. L. Kintner
Mr. E. A. Reeves
Mr. W. H. Bradford