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July 28, 1983

Docket Nos. 50-348
50-364

Director, Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Attention: Mr. S. A. Varga

Joseph M. Farley Nuclear Plant - Units 1 & 2
Technical Specification Amendment to T.S. 3/4.1.3
Movable Control Assemblies

Gentlemen:

Alabama Power Company letters dated March 4 and June 3, 1983, requested approval of a proposed amendment to Technical Specification 3/4.1.3 regarding movable control assemblies. This amendment would allow power operation to continue in the event that more than one rod is inoperable due to a rod control system problem provided that the positions of all rods can be verified to be within ± 12 steps (indicated position) from the group step counter demand position and the safety related function (i.e., trip capability) is intact. This does not represent a safety concern since the rod control system is not safety related and the rods can still be tripped to shutdown the reactor. On July 7, 1983, the NRC Staff requested additional information to support their review process. Two specific issues were raised and Alabama Power Company's responses are presented below.

The first issue considers the possibility of having multiple control rods out of demanded position. Alabama Power Company has reviewed this concern with Westinghouse and it has been concluded that any rod control system failure affecting more than one control rod will result in rod movement being automatically inhibited via either manual programmed operation or automatic control. In addition, a rod control system failure affecting multiple control rods will result in a rod control system urgent failure alarm in the main control room. In the event of a rod control system urgent failure alarm, rods can be moved in the individual bank select positions, except if the failure is in the power cabinet. In that event, rods controlled from the affected cabinet will not move. Only upon repair of the rod control system can programmed rod movement be resumed.

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Therefore, multiple rod misposition due to a rod control system failure is prevented by design. Failures that affect only one rod have been included in existing accident analyses and are addressed in Technical Specification 3/4.1.3.1 ACTION statement e.

The second issue considers the nature and scope of the rod control system failures that have occurred at the Farley Nuclear Plant. The failures are not considered to be unique to the Farley Nuclear Plant nor are they considered indications of a more serious problem due to the obvious randomness of the experienced failures. These failures have been determined to be random component failures in state-of-the-art electronic control systems and appear to be consistent with overall industry experience. It is the understanding of Alabama Power Company that rod control system failures have been experienced by several other utilities.

During conversations with Alabama Power Company on July 12 and 25, 1983, the NRC Staff requested that a time limit be specified for the period during which the rod control system may be inoperable and requested that some of the rods be demonstrated operable in the event of a rod control system problem. Proposed revised technical specification pages are attached which provide for a period of up to the next required completion interval of SURVEILLANCE REQUIREMENT 4.1.3.1.2 to repair the rod control system prior to requiring plant shutdown. In addition, the proposed change requires that rods not affected by a rod control system problem be demonstrated movable within 12 hours. This change would allow a reasonable amount of time to repair rod control system problems that do not affect the safety function of the rods (i.e., trip capability).

NRC approval of the proposed change allowing 12 hours to verify that at least 50% (i.e., 24 rods) of the rods are operable and the remainder of the surveillance interval to repair the potential rod control system problem would allow Alabama Power Company to:

1. Perform orderly troubleshooting that preserves the as-found condition of the rod control system and allow assessment of the root cause of the problem while not requiring operation of the rod control system which could conflict with the troubleshooting effort and could result in inadvertent plant tripping.
2. Repair the rod control system problem in a reasonable amount of time without the threat of requiring reactor trip from 100% power during the repair process.

The current technical specification requires a plant trip from 100% power if a rod control system problem cannot be identified and corrected in an inordinately short period of time (i.e., 6 hours). As a result, rod

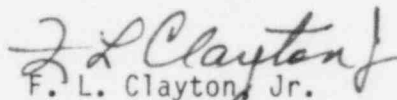
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control system repairs have been performed with unreasonable haste in order to avoid tripping from full power which would result in unnecessary transients in the reactor coolant system and the secondary system and unnecessarily challenges the plant safety systems. The reason that tripping is the only alternative when rod control system problems affecting more than one rod occur is that use of the control and shutdown rods for controlled shutdown would not be in accordance with presently analyzed shutdown procedures. Any attempt at a controlled shutdown with more than one rod inoperable would result in violating other technical specifications such as rod misalignment, rod insertion limits, etc. The proposed technical specification significantly reduces the chances of requiring unnecessary plant trips from full power while assuring that such concerns as common-mode failure of the rods are addressed by verifying operability of at least 50% of the rods during the repair process. Westinghouse has reviewed the proposed Farley Technical Specification change and concurs that it is consistent with the existing accident analysis performed by Westinghouse. This letter supplements the March 4 and June 3, 1983 Alabama Power Company submittals.

If there are any additional questions, please advise.

Yours very truly,


F. L. Clayton, Jr.

FLCJr/GGY:lsh-D28

Attachments

cc: Mr. R. A. Thomas
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Mr. J. P. O'Reilly
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