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November 4, 1982

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 and 2  
NUREG-0737, Item II.D.1

Gentlemen:

In letter dated July 1, 1982, Alabama Power Company committed to complete further analyses of the downstream loads based upon the results of the EPRI Safety and Relief Valve Test Program. Further analyses and revised calculations of the new downstream loads have been completed for Alabama Power Company by Westinghouse. The attached report provides the results of the Westinghouse evaluations for both the safety and relief valve discharge cases. The evaluations were based upon cold seal discharge for both the safety and the relief valve discharge cases, which is the design basis for the Farley Nuclear Plant. In most instances, the loads generated were within allowable limits. No overstresses occurred subsequent to discharge of the relief valves; however, a potential overstressed region in the piping downstream of the safety valves was identified subsequent to safety valve discharge.

Section 5.2.2.2 of the Joseph M. Farley FSAR was utilized to evaluate this potential overstressed region. As stated in this section, "A support is provided on the discharge piping as close as possible to each safety and relief valve discharge nozzle so that forces and moments (including pipe whip and reactions following an assumed discharge pipe rupture) will not jeopardize the integrity of the valves, the inlet lines to the valves or the nozzles on the pressurizer." Based on engineering judgement, the pressurizer itself would not be affected by the consequences of the overstressed piping if rupture occurs nor would the operability of the safety valves, inlet lines to the valves or the nozzles on the pressurizer be jeopardized.

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Alabama Power Company has evaluated the piping areas which pose a potential overstressed condition as indicated in the Westinghouse analysis. The original design has been verified for at least fifteen feet immediately downstream of the valves. As shown in the attached report, the loads begin to exceed design loads beyond this point. In the unlikely event that an overload condition leads to a pipe rupture beyond this point, the resulting forces in the region upstream of the break would be significantly less than for other cases previously analyzed and shown to be acceptable. This would then result in a controlled condition of steam/water emission in the pressurizer cavity.

If Alabama Power Company were to make modifications on the discharge piping in the pressurizer cavity, such work would be extremely difficult due to space limitations in the three foot annulus, severe congestion in the area, and the requirement for use of respirators due to airborne contaminants. In addition, such modifications have been conservatively estimated to exceed 100 man-rem total personnel exposure due to the 300-500 mrem/hr. dose rate in this area. Finally, a decision to implement such modifications would not ensure total control of the RCS fluid discharge. By design, the discharge from this piping would cause the rupture disc on the Pressurizer Relief Tank (PRT) to blow when its design pressure is exceeded resulting in steam/water emission around the PRT. This is the same condition as would result from a break in the discharge piping in the pressurizer cavity.

Based on this information, Alabama Power Company has concluded that the slight increase in the assurance of pipe integrity, with no attendant increase in mitigation capability, is not warranted based on the anticipated high exposures which are counter to the current Farley Nuclear Plant ALARA concept; the assured operability of the safety valves if pipe rupture occurs; and the extremely low probability of safety valve lifting. Alabama Power Company therefore considers the results of the Westinghouse analyses on the J. M. Farley pressurizer safety and relief valve piping and supports to have confirmed the adequacy of the Farley Units 1 and 2 piping and supports and to have satisfied the commitments given in the July 1, 1982 letter.

Mr. S. A. Varga  
U. S. Nuclear Regulatory Commission

November 4, 1982  
Page 3

If you have any questions, please advise.

Yours very truly,

  
F. L. Clayton, Jr.

FLCJr/JAR:1sh-D9

Attachment

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