



Southern Nuclear Operating Company  
*the southern electric system*

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Docket Nos: 50-348  
50-364

U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
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Joseph M. Farley Nuclear Plant  
Inspection Report Nos. 50-348/93-13 and 50-364/93-13

Gentlemen:

During the recent Service Water System Operational Performance Inspection (SWSOPI), the NRC questioned several input assumptions for the SWS waterhammer analysis. This topic was identified by the NRC as Unresolved Item 50-348,364/93-13-02. Subsequent to the SWSOPI, a bounding analysis was performed to verify acceptable system response. Although FNP has had no history of problems associated with waterhammer transients for the SWS, this updated analysis was performed to document that the design and operation of the SWS is not vulnerable to waterhammer excursions. The following are the assumptions for the LOSP coincident with LOCA event:

- The previous analysis considered a SW pump restart in 7-12 seconds following a LOSP. The updated analysis conservatively considers a dual pump restart in 23 seconds for each train.
- The previous analysis assumed an initial SW temperature of 72 degrees F. The updated analysis bounds the Technical Specification limit of 95 degrees F by assuming an initial temperature of 102 degrees F.
- The previous analysis did not consider the SW temperature rise that would result from heat rejected via system heat exchangers. The updated analysis examines the heat input for the limiting components by assessing the maximum SW outlet temperature for the containment coolers and diesel generator heat exchangers that would result from a LOSP and coincident LOCA.

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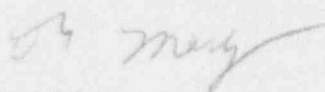
- The previous analysis was based on the predicted system backpressure that could result under LOSP/LOCA conditions. The updated analysis minimizes system backpressure by considering a failure of the SW standpipe coincident with the postulated LOCA/LOSP. It should be noted that this SWS configuration could only result from a seismic event coincident with the LOSP/LOCA or from a passive failure of low energy piping coincident with the LOSP/LOCA and therefore, is beyond the FNP design basis. However, this conservative assumption was applied in order to address questions regarding waterhammer transients with minimal system backpressure.

The results of the reanalysis indicate a maximum system pressure spike of 125 psig. This spike occurs at the discharge of the containment coolers and is well below the system design pressure of 150 psig. It should be further noted that the analysis assumes no credit for the SWS vacuum breakers. On this basis, it can be concluded that the present design and operation of the safety related SWS is conservative with regard to waterhammer vulnerability.

If you desire additional information regarding this topic, please advise.

Respectfully submitted,

SOUTHERN NUCLEAR OPERATING COMPANY



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