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O. W. DIXON, JR.
VICE PRESIDENT
NUCLEAR OPERATIONS

October 29, 1982

Mr. James P. O'Reilly, Director
U. S. Nuclear Regulatory Commission
Region II - Suite 3100
101 Marietta Street, N. W.
Atlanta, Georgia 30303

Subject: Virgil C. Summer Nuclear Station
Docket No. 50/395
Operating License No. NPF-12
Significant Deficiency
Cold Space Misapplication

Dear Mr. O'Reilly:

On July 29, 1982, Mr. John Rogge of your office was notified of a potential significant deficiency under the provisions of 10CFR50.55(e) involving the misapplication of criteria in the 1923 Cold Spacing Report. An interim report was issued August 27, 1982, indicating that our evaluation had not been completed. We have now completed our evaluation and have in fact declared the problem a substantial safety hazard. This constitutes our final report on this subject.

As part of our IEB 79-14 requirements, correct valve weight/CG information was obtained for application to analysis of safety related piping. The correct valve information was then used in a review of chart analyzed piping. This review uncovered the fact that four criteria from the 1923 Cold Spacing Report were not being applied properly. The misapplied criteria were:

1. proper support of valve weight and power operators
2. classification of supports in code break regions
3. maximum span length criteria
4. proper thermal flexibility of long runs

A 100% review of safety related chart analyzed problems was implemented to address the four misapplied criteria. One hundred six (106) cases were identified requiring support additions or modifications. Subsequently, 106 supports were added or modified. However, in view of the tremendous conservatism involved in the chart analysis, the addition/modification of 106 supports did not by itself represent a "defect" affecting the safe operation of the plant. In order to adequately address this question, mini-computer analyses were run of the problem areas. The math models included three supports in each of the three orthogonal directions on both sides of the problem area. The mini-analyses were performed on the basis of the configuration prior to modification. In addition, system evaluations were used to determine those segments required for safe shutdown and to protect the health and safety of the public.

Results of the mini-analyses and system evaluations indicate that two situations, if left uncorrected, could have impacted the safe operation of the plant. Two chemical feed lines may not have withstood design basis loading. These 1½ inch chemical feed lines tie into two 4 inch Emergency Feedwater headers. Although specific analysis has not been performed, it would have to be assumed that failure of the 1½ inch lines would result in inadequate supply of Emergency Feedwater to the steam generators.

In regard to specific cause and corrective action, the misapplication of the four criteria from the 1923 Report is the result of the lack of adequate training. Chart analyzed safety related systems for Virgil C. Summer Nuclear Station have been reviewed and corrected. In view of the status of design work for the plant, corrective action will be to provide adequate training for future application of the criteria.

If you require additional information, please advise.

Very truly yours,

O. W. Dixon, Jr.

GDM:OWD:glb

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