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Georgia Power

the southern electric system

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85 JAN 31 P 1:36

January 17, 1985

United States Nuclear Regulatory Commission
Office of Inspection and Enforcement
Region II - Suite 2900
101 Marietta Street, Northwest
Atlanta, Georgia 30323

File: X7BG03-M52
Log: GN-513

Reference: Vogtle Electric Generating Plant-Units 1 and 2, 50-424, 50-425;
Quality of Welds and Radiographs Pullman Power Products; also
GN-425, dated October 1, 1984.

Attention: Mr. James P. O'Reilly

In our previous correspondence on this subject, Georgia Power Company indicated that a final report on this concern would be submitted by January 18, 1985.

Georgia Power Company has completed its evaluation of radiographs provided by vendors supplying safety-related components for the Vogtle Electric Generating Plant. These vendors include Anchor Darling, Chicago Bridge and Iron, CVI, Pullman Power Products, Richmond Engineering Company, Westinghouse, and subvendors to Westinghouse.

The evaluation has concluded that a reportable condition pursuant to the criteria of 10 CFR 21 and 10 CFR 50.55(e) could exist only in the case of some radiographs provided by Pullman Power Products. A summary of the evaluation for this case is attached.

Supporting records for the entire evaluation are available for review at the jobsite.

This response contains no proprietary information and may be placed in the NRC Public Document Room upon receipt.

Yours truly,

D. O. Foster

REF/DOF/tdm

Attachment

(See Page Two for Distribution)

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EVALUATION FOR A REPORTABLE CONDITION

Initial Report: On October 27, 1983, Mr. C. W. Hayes, Vogtle Quality Assurance Manager, reported a potential deficiency to Mr. John Rogge of the USNRC, Region II. The subject of this potential deficiency was the quality of welds and radiographs. This report reviews concerns associated with the radiographs of pipe spools supplied by Pullman Power Products.

Background Information: Radiographic films of pipe spools manufactured by Pullman Power Products were reviewed by Georgia Power Company after receipt of the components at the jobsite. Indications were found which had not been noted or reported in the Pullman Power Product radiographic inspection reports. The examination by Georgia Power Company also detected violations of ASME code radiographic techniques. Radiographic examiners from Bechtel Power Corporation confirmed Georgia Power Company's findings. Georgia Power Company contracted BESTCO (Brand Examination Services Testing Company) to review the radiographs that had been received on site. A total of 30,826 film intervals representing 7,210 welds were eventually reviewed.

Meetings were periodically held with Pullman Power Products to review the findings of the radiographic review. Additionally, questionable radiographs were reviewed by qualified examiners of Georgia Power Company, Bechtel Power Corporation, and Pullman Power Products to determine the proper disposition of the radiographs. Radiographic film discrepancies that were not resolved by the radiographic examiners were sent to Bechtel Power Corporation for further review.

It should be noted that technical differences over the interpretation of these discrepancies can exist.

Engineering Evaluation: An evaluation of each weld discrepancy was conducted to determine the metallurgical characteristics of the discrepancies. This information was used to evaluate the potential for propagation and enlargement of the deficiency. If the deviation report did not contain sufficient dimensional data to fully characterize the deficiency, the potential for propagation was assumed. These potentially propagating weld discrepancies were analyzed for impact upon plant safety. It was conservatively assumed that had the discrepancy gone uncorrected, the discrepancy could have propagated and caused a pipe spool weld failure during plant operation.

A facility response analysis was conducted to determine the effects of the assumed pipe failure. This analysis conservatively assumed the pre-existence of a defective pipe spool in one train, rendering the train inoperable (due to the discrepancy propagation and subsequent failure of the pipe), concurrent with the most limiting single active failure following the onset of a transient or accident condition that required a response from that system.

The results of the engineering evaluation indicated that some weld discrepancies could have compromised system functional performance (see Attachment 1). It should also be noted that an extensive engineering evaluation utilizing fracture mechanics techniques has not been performed. If these techniques were to be used, the possibility does exist that some of the weld discrepancies could be shown not to have an adverse effect upon plant safety.

Evaluation of Breakdown of Quality Assurance Program: It has been concluded that a significant breakdown of the Quality Assurance Program of Pullman Power Products did not occur. The discrepancies in the pipe spool in Attachment 1 represents only a small fraction of the total of pieces shipped.

Conclusion: Georgia Power Company has concluded that the discrepancies in the weld radiographs of the spool pieces supplied by Pullman Power Products could constitute a reportable condition as defined by the reporting criteria of Part 10CFR21 and 10CFR50.55(e). Based on NRC guidelines in NUREG-0302 Rev. 1 and other documents, Georgia Power Company is reporting this concern per the criteria of 10CFR50.55(e). Again, it should be emphasized that conservative methods were employed in the analysis. More exact methods may have resulted in a determination of non-reportability for this subject.

Corrective Action: Weld intervals containing radiographic technique deficiencies will be re-radiographed and evaluated for acceptability of weld quality.

All weld discrepancies will be reworked or repaired and then re-inspected in accordance with applicable code and specification requirements to confirm their acceptability.

ATTACHMENT 1

Summary of Weld Discrepancies

<u>PIPE SPOOL AND WELD</u>	<u>DR NO.</u>	<u>DISCREPANCY</u>	<u>SYSTEM</u>
1-1204-5-01-B	3318	Slag	Safety Injection
1-1204-006-5-07-A	3318	Incomplete Fusion	
1-1204-007-5-05-C	3318	Incomplete Fusion	
1-1205-003-5-08-D	3468	Root Concavity	Residual Heat Removal
1-1205-006-5-05-13	3565	"	
1-1205-006-5-05-F	3565	"	
1-1205-007-5-04-C	3565	"	
1-1206-006-5-19-A	3940	Root Concavity	Containment Spray
1-1206-007-05-04-B	3940	Incomplete Fusion	
1-1206-007-5-13-A	3941	Root Concavity	
1-1206-040-5-02-A	3941	Incomplete Penetration	
2-1208-141-5-05-K	5596	Elongated Indication	Chemical and Volume Control