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MURRAY R. EDELMAN
VICE PRESIDENT
NUCLEAR

September 30, 1983

Mr. James G. Keppler
Regional Administrator, Region III
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, Illinois 60137

RE: Perry Nuclear Power Plant
Docket Nos. 50-440; 50-441
Rejection of Previously Accepted
Containment Vessel Radiographs
[RDC 53(82)]

Dear Mr. Keppler:

This letter serves as our final report pursuant to 10CFR50.55(e) concerning the rejection during re-review of a number of previously accepted radiographs on Containment Vessel shell plate welds. Mr. J. Konklin was first notified on April 5, 1982, by Mr. E. Riley of The Cleveland Electric Illuminating Company (CEI) that this problem was being evaluated. Our previous reports on this subject were submitted May 3, 1982, August 31, 1982, September 30, 1982, March 31, 1983, and May 31, 1983.

This report contains a description of the deficiency, an analysis of safety implications, and corrective action taken.

DESCRIPTION OF DEFICIENCY

Several Nonconformance Reports (NRs) were written by Newport News Industrial Corporation of Ohio (NNICO) to document the fact that they had failed to perform excavation Magnetic Particle Testing on a number of welds that were being repaired. The NRs were dispositioned "Use-As-Is" based on acceptable final radiographs of the weld repairs.

Project Organization's Nondestructive Examination (NDE) Element began to re-review these previously accepted radiographs for the purpose of verifying compliance with the disposition of the subject NRs. During this re-review, it was found that a number of the previously accepted radiographs could be judged rejectable. Based on these preliminary results, your office was notified.

COMPLETION OF EVALUATION AND CORRECTIVE ACTION

Upon notifying your office of the potential Significant Deficiency, CEI's NDE Group began a 100% re-review of all Containment Vessel radiographs in order to determine the extent of the deficiency.

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This re-review resulted in 564 film from Unit 1 and 198 film from Unit 2 being dispositioned as potentially unacceptable to the Code. To further define the Code acceptability/rejectability of these film, acetate overlays (skins) of the film were made showing the potentially rejectable indications. These skins were then compared with the actual weld on the vessel. As a result of this comparison, the majority of potentially rejectable film was accepted by CEI's NDE Group because the indications on the film were not weld defects but merely weld surface irregularities, acceptable by Code standards.

It was also found during this review, however, that a number of the potentially rejectable welds were inaccessible for either visual inspection and/or repair. For these welds, a detailed engineering evaluation was performed by an outside engineering firm to determine the acceptability of the welds assuming the indications were in fact defects in the weld and would remain unrepaired for the design life of the structure. Their report was submitted to and accepted by the U.S. Nuclear Regulatory Commission Office of Nuclear Reactor Regulation.

All accessible welds which were determined to be Code rejectable after all review was complete were excavated, repaired, re-radiographed, and accepted by CEI.

As this deficiency was identified after a revision to the CEI program to require that all PNPP field radiographs are reviewed by the CEI NDE Unit, and backfitting to meet this review requirement is essentially complete, there will be no recurrence at PNPP.

ANALYSIS OF SAFETY IMPLICATIONS

As stated above, an outside engineering firm was utilized to perform image enhancement of various flaws present in the weld joints, flaw modeling, evaluation of stresses at the joint locations, material properties, fracture analysis, and fatigue evaluations for the designed life of the plant. The results of this evaluation show that the defects present will not become fracture critical over the design life of the plant for the stress levels and cycles examined. It was concluded that if this problem had gone undetected, it would not be detrimental to the safe operation of the Perry Nuclear Power Plant.

Please call if there are any questions.

Sincerely,

Murray R. Edelman
Vice President
Nuclear Group

MRE:pab

cc: Mr. M. L. Gildner
NRC Site Office

Director
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

U.S. Nuclear Regulatory Commission
c/o Document Management Branch
Washington, D.C. 20555

Records Center, SEE-IN
Institute of Nuclear Power Operations
1100 Circle 75 Parkway, Suite 1500
Atlanta, Georgia 30339