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MIDDLE SOUTH UTILITIES SYSTEM

May 25, 1983

W3I83-0186
Q-3-A35.07.82

Mr. John T. Collins, Regional Administrator, Region IV
U. S. Nuclear Regulatory Commission
611 Ryan Plaza Drive, Suite 1000
Arlington, Texas 76012

SUBJECT: Waterford SES Unit No. 3
Docket No. 50-382
Significant Construction Deficiency No. 82
"Bent Control Element Assembly Rods"
First Interim Report

REFERENCE: Telecon dated April 25, 1983 to C. Oberg from M. Livesay

Dear Mr. Collins:

In accordance with the requirements of 10CFR50.55(e) we are hereby providing two copies of the Interim Report of Significant Construction Deficiency No. 82, "Bent Control Element Assembly Rods". This item was previously identified as PRD 114.

If you have any questions, please advise.

Very truly yours,

F. J. Drummond
Project Support Manager - Nuclear

Attachment

FJD/DEB:keh

cc: 1) Director
Office of Inspection & Enforcement
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

2) Director
Office of Management
Information and Program Control
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

3) Mr. E. L. Blake

4) Mr. W. M. Stevenson

IE-27

INTERIM REPORT
OF SIGNIFICANT CONSTRUCTION DEFICIENCY NO. 82
"BENT CONTROL ELEMENT ASSEMBLY RODS"

INTRODUCTION

This report is submitted pursuant to 10CFR50.55(e). It describes deficiencies observed during the receipt inspection of Control Element Assemblies (CEAs) at the Waterford 3 Steam Electric Station. Several CEAs were bowed in excess of specifications. This problem is considered reportable under the requirements of 10CFR50.55(e). To the best of our knowledge, this problem has not been previously identified to the Nuclear Regulatory Commission pursuant to 10CFR21.

DESCRIPTION

Visual inspection of CEAs immediately after removal from their shipping containers revealed that many of the rods were bent slightly. Closer visual inspection revealed that some of the rods exhibited gradual bends over their entire length. The bends appeared to be randomly directed and therefore not a result of bending or twisting of the assembly during packing or unpacking. A few CEAs were observed to have rods with relatively abrupt bends such that the deflection was as much as 3/4" at the throat of the bend. The straightness specification is 0.020 inches per foot and 0.060 inches overall, maximum.

Applicable functional requirements are: a) 3-second drop time to 90% insertion per Technical Specifications, and b) the CEA must align satisfactorily for insertion into the fuel assembly when held by the CEA mast on the Fuel Handling Machine (FHM).

Combustion Engineering (CE) proposed the following alternate specifications based on the functional requirements: 1) Maximum drag in a fuel assembly should be less than 10-lb. and b) maximum deflection of the bottom end with respect to the FHM gripper (2-ft above the bottom) should be less than 3/32".

Eleven CEAs were observed to have deficiencies during the initial receipt inspection. In a subsequent inspection, four of the eleven CEAs failed the drag test. The maximum measured drag was 20,-0,+2.5 lbs. In the subsequent inspection, a jig was used to position CEA rods such that deflection of the bottom tip with respect to the gripper location could be measured carefully.

All eleven suspect CEAs failed in that one or more rods deflected by more than 3/32" at the bottom. Six additional CEAs which passed the initial inspection were then drag tested and inspected for straightness. All narrowly failed the 3/32" offset inspection. Of 84 (total) CEA rods inspected for straightness, 53 CEA rods or 63% failed the 3/32" criterion.

Two CEAs had rods with substantial deflections and drag: LA-13 had one rod with a deflection greater than 11/32 and a drag of about 10-lb. LA-38 had two rods with deflections greater than 11/32 and a drag of about 20 lb. At CE's request, these CEAs were returned to Windsor for CE's evaluation.

SAFETY IMPLICATIONS

Had this deficiency remained uncorrected, the affected CEAs would have required excessive force to operate which might have resulted in a lower negative reactivity insertion rate on a trip than that assumed in the safety analyses.

CORRECTIVE ACTION TAKEN

Two CEAs (LA-13 and LA-38) have been returned to the vendor for evaluation. The vendor will inspect the remaining CEAs at the Waterford 3 site in the near future. A decision on the acceptance, replacement, or repair of the CEAs will be made based on this inspection and further evaluation. Further information will be submitted on or before August 16, 1983.

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