

WASHINGTON PUBLIC POWER SUPPLY SYSTEM

WPPSS NUCLEAR PROJECT NOS. 3 AND 5

INTERIM REPORT

10CFR50.55(e) - D/N #038

UNIT 3 STEAM GENERATOR SLIDING BASE BEARING PLATE

SURFACE FINISH DEFICIENCY

November 17, 1981

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INTRODUCTION

Steam Generator No. 2 on the south side of Unit No. 3 was set in place during the weekend of August 21-22, 1981. Bearing plates on the grillage under the sliding base were installed August 21, 1981. The bearing plates (4 per generator) were fabricated and supplied by Chicago Bridge & Iron per Contract 3240-113. Design specifications require a 125 rms finish on the plates. The installing contractor, Joint Venture (MK/ESI/LORD), Contract 3240-224, sent the plates to Bingham-Willamette Company in Portland for final machining and finishing. Bingham-Willamette performed the machining and provided a Certificate of Compliance to the requirements of the Purchase Order; however, certification of surface finish was not provided. The Joint Venture received, inspected, accepted and subsequently installed the plates in the as-received condition. Personnel who performed the document review during receiving inspection failed to recognize that certification of surface finish was not provided by Bingham-Willamette.

One week after Generator placement, an NCR was initiated to identify the documentation deficiencies. The NCR noted that the surface finish of the plates was indeterminate.

Since this could affect the performance of primary systems, the determination of surface finish was essential and the problem was considered significant.

The NRC was notified on September 20, 1981, in accordance with the provisions of 10CFR50.55(e).

A. POTENTIAL PROBLEMS AND REFERENCE TO THE NOTIFICATION

The potential problem of having a surface finish that did not meet the specified 125 rms was identified by the NCR. The NCR also identified the discrepancy between the Purchase Order Certificate of Compliance and Field Receiving Inspection Reports. Conflicts between the documents are summarized as follows:

- The Contractor's Purchase Order to Bingham-Willamette called for a 125 rms finish.
- An Audit Report prepared by the installing contractor's auditor noted that the surface finish varied from 250 to 600 rms. This was a much coarser finish than required.
- The Certificate of Compliance furnished by Bingham-Willamette excluded the surface finish requirements.
- The Contractor's field receiving inspection accepted the surface finish as furnished.
- The bearing plates were installed in the as-received condition.

The NCR was initiated a week after the actual setting of the Steam Generator. Since the bearing plates are inaccessible for examination, an overall evaluation of the potential problem areas of vendor inspection process, inspection expertise and technical consequences is required.

1. Vendor Inspection Process

The inspection process has been established in accordance with Quality Assurance requirements for Nuclear Projects. In this case, sub-vendor auditing, receiving inspections and post installation inspections were in order. The sub-vendor shop surveillance audit report displayed thoroughness in its audit inspection.

The receiving inspection is considered the area of potential deficiency. The NCR notes that the receiving personnel were made aware of the deficient surface finish prior to receiving the material in the field. Also, the NCR notes that, even though the plates were inspected by a Joint Venture QC Receiving Inspector, a Joint Venture QC Receiving Supervisor and Joint Venture Engineering, they were accepted in the as-received condition. The receiving inspection report contains errors in the reference documents and thus casts doubt on the validity of the inspection itself.

2. Personnel Qualification

During the course of Ebasco Engineering's investigation, inspection personnel qualifications were reviewed to evaluate the Joint

A. POTENTIAL PROBLEMS AND REFERENCE TO THE NOTIFICATION (Continued)

2. Personnel Qualification (Continued)

Venture contention that the plates met the required finish. Sub-vendor Bingham-Willamette's shop was visited and their procedure for determining the metal finish was witnessed by Supply System and Ebasco Engineering. The Joint Venture auditor's qualifications were found to be satisfactory; however, the Joint Venture QC receiving inspector's qualifications were found questionable.

3. Technical Consequences

Combustion Engineering performed an analysis of their steam supply system based on bearing plates with a 125 rms finish. CE has not performed a system analysis with bearing plates exhibiting a different surface finish. It is CE's contention that a re-analysis would be extremely time consuming and expensive.

B. APPROACH TO THE RESOLUTION OF THE PROBLEM

An extensive investigation by Ebasco Engineering has been initiated to review the vendor inspection process. A number of meetings were conducted between Ebasco, Joint Venture and the Supply System. Responsible personnel from the contractor's Construction, Quality Control and Engineering Departments expressed their opinions at the meetings. Their contention was that the receiving inspection was proper and the plates had the required finish of 125 rms.

Even though Ebasco Engineering was satisfied with Bingham-Willamette's inspection methods and certification, they were convinced that irregularities existed in various statements and documentation records.

Ebasco dispositioned the NCR as follows:

The installed sliding base bearing plates are to be removed and replaced with new plates that meet the specified requirements.

Immediately after removal, the contractor is to place the removed sliding base bearing plates into Ebasco's control in a location specified by Ebasco.

C. STATUS OF PROPOSED RESOLUTION

A decision was made to lift the Steam Generator No. 2 and replace the bearing plates. The lift was made during the week of November 9, 1981 and four new bearing plates with the required finish were installed.

D. REASONS WHY THE FINAL REPORT WILL BE DELAYED

The inspection of the removed plates has not been completed and results have not been evaluated.

It is presently anticipated that Ebasco will submit a final report to the Supply System December 15, 1981. Upon review and concurrence, the Supply System will provide a final report to Region V by January 8, 1982.