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November 19, 1979

United States Nuclear Regulatory Commission
Region I
631 Park Avenue
King of Prussia, PA 19406

ATTENTION: Mr. Boyce H. Grier, Director

SUBJECT: Beaver Valley Power Station Unit No. 2
Docket No. 50-412
Significant Deficiency 79-03

Gentlemen:

On November 2, 1979, Duquesne Light Company, in accordance with the requirement of 10CFR50.55(e), notified your office of the omission of reinforcing steel in the containment crane wall of Beaver Valley Power Station Unit #2. Following our notification, we received your action letter of November 7, 1979. This letter is to confirm our completion of the items/plan listed in that action letter.

To organize our response, we have utilized the same paragraph numbers as shown in your letter for our direct response actions and include a summary of our conclusions and the corrective action we intend to implement.

1) The localized crane wall "Stop Work" order of October 23, 1979, was expanded to stop work on all Category I concrete placements November 7, 1979 (DLC-SQCL-#0592A).

2) A detailed Field Construction Procedure (FCP-113) "Removing Section of Reactor Containment Crane Wall" was issued November 2, 1979. This procedure reflects the disposition of N&D #1159 and will be amended as required for each stage of the repair work as the disposition of the N&D is expanded.

3) Quality Control activities are already in process during this stage of the repairs. Their activities are governed by Inspection Report N&D #1159A. This Inspection Report will also be amended to be compatible with the various stages of the disposition instructions as they are obtained.

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4) A review of the drawings and Inspection Reports related to the crane wall placement has been made. This was a detailed review of all drawings affecting the erection of the crane wall. Two separate teams were formed performing the review independently of each other; one team from DLC-SQC and one team from a combined construction group, each team consisting of three pairs of reviewers.

Resulting from this review, we found that the specific problem of the relationship between the elevation stated on the fabricator's drawings, detailing the rebar and the rebar requirements shown for specific elevations on the engineering drawings, had occurred once before, and reported on our N&D #710 dated August 16, 1978. This rebar omission was evaluated by the engineers and the condition was found acceptable. This earlier N&D was considered an isolated case and consequently, was not subject to trend analysis. An additional similar rebar "elevation" definition problem was found applying to an area not yet placed at the same elevation as that reported on N&D #1159 which was the subject of 10CFR50.55(e) action.

This review, however, was not limited to a search for identical problems, but was conducted to identify all differences between the fabricator's and engineers' drawings. This review has resulted in eight additional discrepancies, seven of which were resolved prior to or during the review, and one which has not yet been resolved.

The unresolved problem relates to sets of three #7 dowels from the crane wall to each stairwell wall required by the engineers' drawing with sets of two #7 dowels required by the fabricator's drawing for the North stairwell wall.

There is some evidence that the dowels in question were installed in accordance with the engineers' drawings but the Inspection Report, although very detailed in its content, does not specifically reference the applicable engineers' drawing that shows these dowels.

5) The Inspection Procedure IP-6.2.3, effective date November 15, 1979, has been amended to clarify the application of the fabricator's and engineers' drawings during the inspection.

6) Additional training to the QC Inspectors has been given and recorded. This training emphasized the application of the two types of drawings during the inspection required by IP-6.2.3.

7) Two audits of the S&W design verification and drawing checking system were performed, one by DLC-QA and one by S&W Engineering.

a) The QA audit was set up to determine the adequacy of the

original drawing verification program. The review was performed on 59 Engineers' drawings and 47 Fabricator's drawings, covering 11 basic areas of activity -- 4 areas of the Containment, 3 - Auxiliary Building, 2 - Service Building, and one each for the Main Steam Cable Vault and Fuel and Decontamination Building. The results of this review indicate that the original drawing verification was satisfactory.

b) S&W Engineering conducted a review comparing the title block elevation with the actual rebar content to establish whether similar problems regarding elevation definition occurred elsewhere. The review was applied to over 200 drawings and covered the Reactor Containment, Safeguards Building, Fuel and Decontamination Building, and Service Building. No further instances other than the three cases reported in Paragraph 4 were found.

CONCLUSIONS

Our investigation has led us to conclude that:

a) Design changes were not incorporated into the affected fabricator's drawings applicable to the area of concern if the fabrication had either started or had been completed.

b) Field reviews of the fabricator's drawings and supplementary information performed by the engineers and installer were not adequately formalized.

c) Inspection Plans and construction instructions were not definitive with reference to the use of the engineers' latest design drawing to be used in the final pre-pour check.

CORRECTIVE ACTION

a) S&W has instructed the fabricator to assure that in the future that the detailed drawing title accurately describes the area detailed on that sheet and that proper references be made to other detailed drawings covering the same or adjacent areas.

b) Field Construction Procedure 118, "Engineer Review of Rebar Fabrication Drawings", has been issued to formalize the review program to be applied by engineering on all rebar fabrication drawings.

c) Field Construction Procedure 119, "Placement of Refinforcing Steel" and IP-6.2.3, "Pre-Placement, Placement and Post-Placement of Concrete", have been amended to clarify and emphasize the use of both the fabricator's and engineers' drawings with reference to installation and final pre-pour check.

In accordance with your request, we will await your concurrence with our plans to suspend our Stop Work Order and resumption of concrete placement activities.

Very truly yours,

E. J. Woolever

E. J. WOOLEVER
Vice President

COPIES TO: Dr. V. Stello (15)
Mr. W. G. McDonald (1)

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