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Public Service Electric and Gas Company 80 Park Plaza Newark, N.J. 07101 201/430-8316

June 15, 1981

Mr. Boyce H. Grier, Director  
U. S. Nuclear Regulatory Commission  
Office of Inspection and Enforcement  
Region I  
631 Park Avenue  
King of Prussia, Pennsylvania 19406

Dear Mr. Grier:

NRC INSPECTION REPORT 50-354/81-05  
AND 50-355/81-05  
NO. 1 AND 2 UNITS  
HOPE CREEK GENERATING STATION

We have reviewed your report of the inspection conducted on April 6 - May 3, 1981, at the Hope Creek Generating Station. The report, which was received by PSE&G on May 27, 1981, requires a response within 25 days of May 21, 1981, which is the date of the Notice of Violation.

10CFR50, Appendix B, Criterion VII states, in part, that: "Measures shall be established to assure that purchased material...conform to the procurement documents... The effectiveness of the control of quality by contractors and subcontractors shall be assessed by the applicant or designee at intervals consistent with importance...and quantity of the product or services."

Section 16.4.7 of Chapter 16 of the PSAR states, in part, that: "supplier evaluations...assure that the supplier has the ability to comply with those requirements of 10CFR50, Appendix B, that are applicable to the type of material... being procured." Additionally, it is stated in this section that: "Bechtel shop inspectors are...responsible...for assuring that work is complete... When, during the course of surveillance inspection, the inspector discovers any nonconformance to the procurement documents in the supplier's performance of the work, he shall notify the supplier...before proceeding with further work or release for shipment..."

Paragraph 9.1 of the Technical Specification for Purchase of Miscellaneous Metal for Category I Structures which is the applicable purchase document states, in part, that: "The extent and method of NDE shall be 100% visual examination...in accordance with Articles 6.7 and 8.15 of AWS D1.1."

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Contrary to the above, as of April 17, 1981, safety-related embeds supplied by ACME Steel Engineering Co., Inc., were in use on the Hope Creek Project with an excessive amount of the welding not in accordance with procurement document requirements.

#### Corrective Steps Taken and Results Achieved

On April 3, 1981, Bechtel identified and documented on NCR 1086 weld deficiencies in ACME Steel supplied embeds. The weld deficiencies were detected during Bechtel modification of the embeds.

##### A. Investigation

Bechtel conducted a visual inspection of 270 similar ACME Steel embeds. The results of the inspection revealed that 127 embeds did not meet AWS visual acceptance criteria. The inspection revealed excessive porosity, excessive undercut, and undersize welds.

A sample of the visually inspected embeds were then examined for subsurface porosity.

- o Fifteen (15) embeds which passed visual inspection were RT examined.
- o Ten (10) embeds which failed visual inspection were RT examined.
- o Three (3) embeds which failed visual inspection with air-arc gouged in layers 1/8" thick.

Results of this examination revealed welds with unacceptable subsurface porosity in each case. The deficient weld problem on ACME supplied embeds was then verbally reported to the NRC as a potential significant deficiency on April 22, 1981, in accordance with 10CFR50.55(e).

##### B. Embed Installations

###### 1. ACME Embeds:

All ACME embeds having shear bars, anchor lugs, anchor plates, and combinations thereof, shall be RT examined. Welds not meeting RT examination acceptance criteria shall be repaired. Alternatively, embeds may be replaced with conforming embeds. A conforming embed is defined as a non-ACME embed that has passed visual examination.

2. Non-ACME Embeds:

All non-ACME embeds having shear bars, anchor lugs, anchor plates and combinations, thereof, shall be visually inspected on a sample basis such that each affected release from each supplier is properly represented. If there is an insufficient sample size of any release available, all accessible embeds from that release will be inspected.

3. Sample and Test Program:

A sample and test program has been developed to evaluate the effect of porosity on embed weld strength. A sample of embeds showing excessive porosity has been tested by Lehigh University for ultimate pullout and shear capacity. The results of the testing are being evaluated for correlation with a report to follow. Portions of these tests were witnessed by an NRC Inspector from Region I, (50-354/81-07).

4. Supplier Surveillance:

Bechtel's Procurement Supplier Quality Department conducted an intensive investigation at the jobsite of the hardware deficiencies and also into the supplier quality representative activities during the life of the ACME quality surveillance assignment.

The results of this investigation show that the Bechtel supplier quality area supervisor was demoted during this assignment. The supplier quality representative has been formally reprimanded as a result of this investigation.

Corrective Steps Which Will Be Taken To Avoid Further Violations

A. ACME Steel

There are no active orders with ACME Steel on the Hope Creek Project, and no future orders for safety related embeds will be placed with ACME.

B. Procurement Supplier Quality Department

Instructions have been issued to the present supplier quality area supervisor to monitor closely for the next 60 days the work of the supplier quality representative

who was responsible for the quality surveillance at ACME. At the end of this period, an evaluation of his performance will be prepared by the area supervisor and submitted to supplier quality management.

An instruction will be issued by Bechtel's Supplier Quality Department defining the importance of rigorous inspection of miscellaneous metals. This is a result of an apparent perception by field supplier quality representatives that miscellaneous metals are less critical than complicated types of fabricated steel.

Technique sheets on fit up and welding inspection are in process of being prepared for use by supplier quality representatives. The technique sheets give detailed instructions on the inspection criteria to be followed.

Bechtel's Hope Creek management is in the process of formulating plans with the supplier quality department to assign four (4) project dedicated supplier quality representatives in the field. These four (4) people will assist the assigned supplier quality representatives in problem suppliers' facilities.

Date When Full Compliance Will Be Achieved

- A. A report addressing the results of the sample and test program and the effects of the weld deficiencies on ACME Steel supplied embeds is scheduled for June 26, 1981, completion. This information will subsequently be submitted to the NRC as indicated in our letter to the NRC dated May 26, 1981, under 10CFR 50.55(e) requirements.
- B. Bechtel's Procurement Supplier Department has scheduled July 31, 1981, for completion of their actions.

Should you desire any additional information, we will be pleased to discuss it with you.

Very truly yours,

*T. J. Martin / Schneider*

Mr. Boyce H. Grier

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6/15/81

CC: Office of Inspection and Enforcement  
Division of Reactor Construction and Inspection  
Washington, D.C.

H. E. Morris  
Bechtel Power Corporation

NRC Resident Inspector  
Hope Creek Site

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STATE OF NEW JERSEY)

) SS: COUNTY OF ESSEX  
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FREDERICK W. SCHNEIDER, being duly sworn according to law  
deposes and says:

I am a Vice President of Public Service Electric and Gas  
Company, and as such, I find the matters set forth in our  
letter dated June 15, 1981, concerning combined NRC  
Inspection Report 50-354/81-05 and 50-355/81-05 are true  
to the best of my knowledge, information, and belief.

Frederick W. Schneider

FREDERICK W. SCHNEIDER

Subscribed and sworn to before me  
this 15<sup>th</sup> day of June, 1981

Walter F. Valabon

Notary Public of New Jersey

My Commission expires on Feb. 18, 1985