TENNESSEE VALLEY AUTHORITY
CHATTANOOGA, TENNESSEE 37401
400 Chestnut Street Tower II

June 2, 1982

BLRD-50-438/82-22

U.S. Nuclear Regulatory Commission
Region II
Attn: Mr. James P. O'Reilly, Regional Administrator
101 Marietta Street, Suite 3100
Atlanta, Georgia 30303

Dear Mr. O'Reilly:

BELLEFONTE NUCLEAR PLANT UNIT 1 - UNACCEPTABLE REPLACEMENT FOR COMPONENT COOLING WATER PUMP SHAFT - BLRD-50-438/82-22 - FINAL REPORT

The subject deficiency was initially reported to NRC-OIE Inspector Don Quick on March 1, 1982 in accordance with 10 CFR 50.55(e) as NCR 1749. This was followed by our first interim report dated March 29, 1982. Enclosed is our final report. We consider 10 CFR Part 21 applicable to this deficiency.

If you have any questions concerning this matter, please get in touch with R. H. Shell at FTS 858-2688.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

L. M. Mills, Manager
Nuclear Licensing

Enclosure
cc: Mr. Richard C. DeYoung, Director (Enclosure)
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, DC 20555

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IE 22

ENCLOSURE
BELLEFONTE NUCLEAR PLANT UNIT 1
UNACCEPTABLE REPLACEMENT FOR COMPONENT COOLING WATER PUMP SHAFT
NCR 1749
BLRD-50-438/82-22
10 CFR 50.55(e)
FINAL REPORT

Description of Deficiency

TVA received Babcock & Wilcox (B&W) letter No. SOM-17 which stated that B&W had been advised by the pump vendor, Hayward-Tyler Pump Company of Burlington, Vermont, that the test yield stress values for the replacement shaft material for the CCW pump did not meet the minimum yield stress value required by the design calculations. Because of this information, the replacement shaft is not suitable for the intended duty of the pump and operation of the subject pump was stopped immediately. The shaft discussed in this report is the replacement shaft that was installed to resolve nonconformance report (NCR) 1621 which was previously reported under 10 CFR 50.55(e).

Safety Implications

Inasmuch as the yield stress value of the subject pump shaft falls below the minimum value specified in the design calculations, the shaft could fail during normal operation, resulting in a failure of the CCW pump. Failure of the CCW pump could adversely affect the CCW system which, in turn, could adversely affect the safe operation of the plant.

Corrective Action

The replacement shaft will be returned to Hayward-Tyler.

B&W and TVA personnel inspected the original pump shaft (refer to NCR 1621) and found that there were two circumferential grooves in the thrust end journal bearing surface. These grooves are two to four mils deep and two to four mils wide. Because of the vendor directive of returning the original pump shaft (NCR 1621), repair of the original shaft was not considered at the time.

Since the replacement pump shaft supplied by Hayward-Tyler was unacceptable, disposition of this NCR by repair of the original pump shaft was reviewed by B&W. B&W recommended that the sharp edges of the grooves be broken by mounting the shaft in a lathe and, at a low speed, hand buff the edges with fine emery cloth. TVA will perform the repairs recommended by B&W. Acceptance criteria for this buff is that no sharp edges can be felt by hand. The journal bearing surface area removed by the two grooves is inconsequential relative to the 3-3/4" wide bearing area. We consider this an isolated incident and no TVA action is required to prevent recurrence inasmuch as this incident is a breakdown in the vendor's quality control and assurance program. The corrective action on this item will be complete by July 1, 1982.