

Washington Public Power Supply System

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U. S. Nuclear Regulatory Commission, Region V
Office of Inspection and Enforcement
1450 Maria Lane, Suite 260
Walnut Creek, California 94596-5368

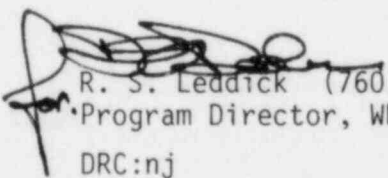
Attention: Mr. D. M. Sternberg
Chief, Reactor Projects Branch No. 1

Subject: POTENTIAL 10CFR50.55(e) DEFICIENCY
DIFFUSER RETAINING CAP SCREWS -
REACTOR COOLANT PUMPS (D/N #46)

On October 7, 1982 the Supply System notified your office of a potential 10CFR50.55(e) deficiency concerning the failure of diffuser retaining cap screws in the Reactor Coolant Pumps supplied by Combustion Engineering. On October 8, 1982 the Supply System also notified CE that they were responsible for reporting the subject deficiency to the Nuclear Regulatory Commission in accordance with the provisions of 10CFR21. To date, the engineering evaluation of the subject deficiency has not been completed.

Attached is CE's current assessment of the deficiency. Based on CE's preliminary evaluation, Ebasco has determined that the deficiency, if left uncorrected, would not adversely affect the safety of operations of the plant. However, a final determination of the safety significance cannot be made until CE completes their evaluation. Therefore, a final or interim report will be submitted to your office by February 4, 1983.

Should you have any questions or desire further information, please contact me directly.


R. S. Leddick (760)
Program Director, WNP-3

DRC:nj

Attachments

cc: J. Adams - NESCO
D. Smithpeter - BPA
Ebasco - New York
WNP-3 Files - Richland

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SYSTEM 80 REACTOR COOLANT PUMP DESIGN DEFICIENCY

DESCRIPTION OF DEFICIENCY

Diffuser retaining cap screws of the Reactor Coolant Pumps have recently failed in the CE-KSB test loop. These cap screws support the diffuser suction ring assembly of an idle pump. With the pump running, hydraulic forces unloaded the sixteen cap screws in question. Two cap screws secure each retaining ring segment and locking devices retain the cap screws. The screws that have failed to date have failed either under the head or at the first thread. The heat treatment condition of the material of these screws caused the material to be susceptible to hydrogen embrittlement/stress corrosion cracking.

SAFETY IMPLICATIONS

If both cap screws per segment ring failed a loose ring segment/cap screw element would exist. While this element is trapped above the impeller it would be free to move around above the impeller and some damage might occur. Should all or some of the diffuser retaining cap screws fail CE would not anticipate any increase in risk to the health and safety of the public. Rather CE considers this problem as a risk to the continued operational capability of the RCP. CE is continuing its evaluation of the problem and some potential solutions. The results of this effort will be presented in a final report.

CORRECTIVE ACTIONS

The cap screw material heat treatment will be changed to a condition so that the material is not susceptible to hydrogen embrittlement/stress corrosion cracking. Some other minor changes will be included in the change out to alleviate the load these screws receive.