

Docket No. 50-298

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Mr. Guy R. Horn
 Nuclear Power Group Manager
 Nebraska Public Power District
 Post Office Box 499
 Columbus, Nebraska 68602-0499

Dear Mr. Horn:

SUBJECT: COOPER NUCLEAR STATION - STAFF ACCEPTANCE OF FRACTURE MECHANICS
 EVALUATION OF FLAW INDICATIONS (TAC NO. M82258)

By letter dated December 5, 1991, supplemented by letter dated December 20, 1991, the licensee submitted for NRC staff review and approval a fracture mechanics evaluation of flaw indications found during the Fall 1991 Outage through Ultrasonic (UT) examination in Cooper Nuclear Station's feedwater nozzle-to-vessel welds. The staff has completed its review of the licensee's submittals.

In our safety evaluation (Enclosure), we conclude that the analysis is acceptable based on the following reasons: (a) the licensee considered all thermal and pressure transients occurring in the vessel and nozzle and selected the worst case - the hydrotest transient for the fracture mechanics analysis; (b) the available toughness of 63 ksi (in)² is larger than the applied K of 28 ksi (in)² for code indications and 47 ksi (in)² for non-code indications; (c) the fatigue crack growth for both indications was predicted to be less than 0.02 inch at the end of plant life; (d) a new flow leakage measuring system was installed in this fall outage which will give on-line indication about the severity of the thermal fatigue due to the leakage of cold feedwater into the vessel during startup and shutdown and during hot standby conditions.

This completes our effort on TAC No. M82258.

Sincerely,

ORIGINAL SIGNED BY

Poby E. Bevan, Project Manager
 Project Director rate IV-1
 Division of Reactor Projects III, IV and V
 Office of Nuclear Reactor Regulation

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 P PDR

Enclosure:
 As stated

cc w/enclosure:
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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

February 13, 1992

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Mr. Guy R. Horn
Nuclear Power Group Manager
Nebraska Public Power District
Post Office Box 499
Columbus, Nebraska 68602-0499

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In our safety evaluation (Enclosure), we conclude that the analysis is acceptable based on the following reasons: (a) the licensee considered all thermal and pressure transients occurring in the vessel and nozzle and selected the worst case - the hydrotest transient for the fracture mechanics analysis; (b) the available toughness of 63 ksi (in)^{3/2} is larger than the applied K of 28 ksi (in)^{3/2} for code indications and 47 ksi (in)^{3/2} for non-code indications; (c) the fatigue crack growth for both indications was predicted to be less than 0.02 inch at the end of plant life; (d) a new flow leakage measuring system was installed in this fall outage which will give on-line indication about the severity of the thermal fatigue due to the leakage of cold feedwater into the vessel during startup and shutdown and during hot standby conditions.

This completes our effort on TAC No. M82258.

Sincerely,

A handwritten signature in cursive script, appearing to read "Roby B. Bevan".

Roby B. Bevan, Project Manager
Project Directorate IV-1
Division of Reactor Projects III, IV and V
Office of Nuclear Reactor Regulation

Enclosure:
As stated

cc w/enclosure:
See next page

Mr. Guy R. Horn
Nuclear Power Group Manager

Cooper Nuclear Station

cc:

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