Omaha Public Power District
1623 Harney Omaha, Nebraska 68102 2247
402/536-4000

December 17, 1985
LIC-85-496

Mr. Robert D. Martin
Regional Administrator
U. S. Nuclear Regulatory Commission
Region IV
611 Ryan Plaza Drive, Suite 1000
Arlington, TX 76011

References: (1) Docket No. 50-285
(2) Letter from OPPD (W. C. Jones) to NRC (J. T. Collins) dated June 19, 1984, LIC-84-196
(3) Letters from NRC (J. T. Collins) to OPPD (W. C. Jones) dated June 22, 1984

Dear Mr. Martin:

Fort Calhoun Station
Boric Acid Secondary Addition Effects
on Primary-to-Secondary Leak Detection Capabilities

Omaha Public Power District (OPPD) provided to the NRC a submittal (Reference 2) outlining our intention to install "in-line" injection of boric acid to the secondary side of Fort Calhoun Station, Unit 1. It is our intent to supplement that submittal.

Maintaining a concentration of boric acid in the secondary system should reduce:

1) denting in the steam generators; and

2) intergranular stress corrosion cracking (IGSCC).

OPPD plans to perform a boric acid soak during low power startup (approximately 30% power) following our 1985 refueling outage. The low power soak will be followed by on-line boric acid injection during the ensuing cycle. Secondary system boric acid concentration will be maintained at approximately 50 ppm during the 30% power soak and 5 to 10 ppm through the balance of the cycle by varying the injection rate with the steam generator blowdown rate.

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OPPD uses measurement of boric acid to determine primary-to-secondary leak rate during the hot shutdown mode of startup (and during the following mode 1 operation until radionuclides become measurable). In all other modes of operation and shutdown, leak rate is measured with radionuclides. Our lower limit of leak detection with boric acid has been 0.03 gpm. Improved analytical technique will drop the lower limit of leak detection to 0.012 gpm despite injection of boric acid. Determination of leak rate by radionuclides is not affected.

Although OPPD's ability to detect (lower) primary-to-secondary leaks is improved, the District realizes that indications of leak rate could be due to "hideout return" (i.e., boric acid entrenched in cracks or crevices during the soaking returning to solution). This masking effect would be short-lived, however, because the amount "hiding" will be relatively small. At any rate, given leak rate indications, OPPD would assume that the indications were leaks and would respond accordingly.

OPPD believes that the benefits derived from injection of boric acid to the secondary side and the increased sensitivity of the analytical technique to determine leaks by boric acid in the hot shutdown mode of startup far outweigh the possible masking by hideout.

If you should have any questions, please do not hesitate to call.

Sincerely,

R. L. Andrews
Division Manager
Nuclear Production

RLA/AND/lp

cc: LeBoeuf, Lamb, Leiby & MacRae
1333 New Hampshire Avenue, N.W.
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Mr. E. G. Tourigny
NRC Project Manager

Mr. P. H. Harrell
NRC Senior Resident Inspector