Public Service Company of Colorado

16805 WCR 19 1/2, Platteville, Colorado 80651

October 29, 1984
Fort St. Vrain
Unit #1
P-84418

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Mr. John T. Collins
Regional Administrator
U. S. Nuclear Regulatory Commission
611 Ryan Plaza Drive, Suite 1000
Arlington, TX 76011

SUBJECT: HELIUM CIRCULATOR INTERSPACE MOISTURE INVESTIGATION

Dear Mr. Hackney:

On September 11, 1984, new moisture sensing probes were installed in all four purified helium supply line wells to the helium circulators' interspaces. As the installation was being performed moisture was noticed in the supply line wells.

In order to determine the source of water and the leakage rate, a series of tests were performed on September 22, 1984 through September 28, 1984.

The testing involved draining "A" and "B" circulator interspaces individually with each corresponding helium circulator operating, self turbining and completely isolated from all sources of water. In order to determine the rate of moisture ingress into each helium circulator interspace, the interspace was drained over a specified period of time yielding a flow rate. These tests were performed several times to substantiate the results collected on the previous tests.

In addition, a primary seal leak test was conducted on "A" Helium Circulator's interspace. This was accomplished by placing a water manometer on the moisture element well of the purified helium supply line of "A" Circulator. The reactor was then depressurized to 24 inches of water vacuum. There was no vacuum observed in this interspace, indicating that there is not a primary seal leak.

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From the testing performed, it is apparent that a bearing water leak of approximately 0.05 gpm exists in the "A" Circulator penetration. Due to the inaccessibility of the piping within the penetration under current plant conditions, the location of the leak cannot be positively identified. However, there are a number of fittings and flanges in the bearing water piping, and it is likely that the leak has occurred at one of these connections. At no time did this leak affect the circulator's operability.

We will be replacing the "A" Circulator during the present plant shutdown.

Sincerely,

J. W. Gahm
Manager, Nuclear Production
Fort St. Vrain Nuclear
Generating Station

JWG/dlb