



Public Service Company of Colorado

P. O. Box 361, Platteville, CO 80651

May 13, 1976
Fort St. Vrain
Unit No. 10
P-76109



Mr. William Gilbert, Project Manager
U. S. Nuclear Regulatory Commission
7920 Norfolk Avenue
Bethesda, MD 20034

Docket #50-267

Dear Mr. Gilbert:

Following the water ingress event reported in Unusual Event Report No. 50-267/76/03, all power to the Control Rod Drive and Orifice Assemblies (CRD's) was removed to assure no adverse effect on the instrumentation due to electrolysis.

To assure the high moisture content of the primary coolant system had not had a degrading effect on the CRD's and the primary system internals, certain inspections and tests have been accomplished.

All control rods have been stroked from the fully inserted to the fully withdrawn position and scram times measured. Withdrawal times varied from 178-180 seconds and scram times varied from 126-134 seconds. These times are consistent with previously measured times. All instrumentation functioned properly.

Each orifice valve was run through 0.5% of its stroke. In addition, three orifices were stroked from full closed to full open. No problems were experienced and all instrumentation functioned properly. The 0.5% stroke test is considered adequate based on previous experience that has indicated that the orifice valve will not move if there is corrosion present on the mating surfaces of the interacting components.

The CRD was removed from penetration #35 for visual inspection and testing. Examination of the unit revealed some discoloration of the outer portions of the metal surfaces below the primary closure. This discoloration was present when the unit was installed. Inspection of the gear box indicated the presence of a few small spots of oxide on black iron parts. The unit was functionally tested with no difficulty.

At the present time preparations are being made to measure resistance values of the instrumentation potentiometers to ground.

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Mr. William Gilbert
Page 2

The removal of "D" helium circulator offered the opportunity to visually inspect the penetration and helium circulator inlet and outlet areas.

The inspection of 1D circulator penetration and the area near the penetration was made to determine the effect of moisture on the PCRV internal metal surfaces in this area.

The penetration liner was discolored in several areas. These areas generally cover a few square feet and have a slightly reddish color. There was also a stain adjacent to the primary closure area which was assumed to have occurred during primary closure dressing prior to initial circulator installation.

The primary closure sealing surface was very clean and smooth. There was a slight buildup of red iron oxide on the sealing surface inside and outside of the "O" ring surface. The oxide was wiped off with a clean cloth.

The portions of the helium inlet passage to the circulator observed was the inside of the basket strainer, the vertical struts of the inlet passage, and the upper surface of the primary closure. The basket strainer was covered with a hard black oxide coating. Scraping the surface produced no particulate or scale. The area of the strainer that forms the bottom of the turning passage to the circulator suction has a spotted discoloration 4" to 5" wide around its circumference.

It was concluded that water had been in this location at some time. The discoloration is slight and dull red in color.

The upper surface of the primary closure was in good condition and had no rusting indications.

The vertical struts had no discoloration of the metal surfaces but they were slightly pitted. The pitting is the result of particle impingement due to the high velocity gas stream in this area.

The outlet valve was visually inspected and there was no discoloration or signs of condensation on any portion of the valve or the lower diffuser assembly.

In general, visual examination revealed no unexpected discoloration and no adverse effects due to primary coolant moisture.

Because of the configuration of the helium circulator inlet area, it was impossible to view or inspect any portion of the thermal barrier of the bottom head.

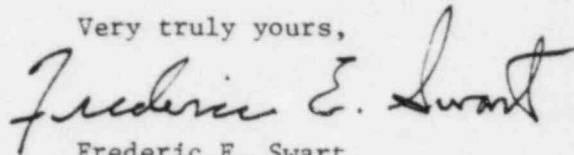
Mr. William Gilbert
Page 3

Visual inspection of the helium circulator removed from the penetration found it to be in excellent condition.

In summary, all inspections and tests indicate that the recent moisture ingress incident had no adverse effect on the control rod drive and orifice valves or on the reactor internals.

More detailed information is to be forwarded in a supplement to Unusual Event Report No. 50-267/76/03.

Very truly yours,

A handwritten signature in cursive script, reading "Frederic E. Swart". The signature is written in dark ink and is positioned above the printed name and title.

Frederic E. Swart
Superintendent-Nuclear Production

FES:il