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**Public Service Company of Colorado**  
P. O. Box 361, Platteville, CO 80651

November 9, 1978  
Fort St. Vrain  
Unit No. 1  
P-78183

Mr. George Kuzmycz  
Project Manager,  
Div. of Project Management-Special Projects  
U. S. Nuclear Regulatory Commission  
Washington, DC 20555

Docket No. 50-267

Subject: Fort St. Vrain Operations  
Oscillation Testing

Dear Mr. Kuzmycz:

Pursuant to our telecon of November 6, 1978, this letter shall serve as a preliminary report under the provisions of your letter dated September 26, 1978, concerning testing in the fluctuating mode and the reporting requirements of Item 8 of this same letter.

On November 4, 1978, we were in the testing mode under the auspices of RT-500A in an attempt to test for fluctuations at or near 40% power. During this test one of the limits ( $\pm 30^{\circ}\text{F}$  for the steam generator module main steam temperature) was exceeded. The sequence of events and conditions leading to exceeding this limit are summarized in the attachment.

It should be noted that this information is preliminary at this point in time, and that the detailed data is presently being reduced to allow further analyses. It is anticipated that the data will be reduced by the end of the week and analysis will begin as soon as possible. We should be in a position to discuss this event along with our future plans prior to November 17, 1978.

In the interim the reactor has been returned to normal operation, and, in accordance with your letter of September 26, 1978, no further testing will be done without your express approval.

Very truly yours,

*Don Warembourg*  
Don Warembourg  
Manager, Nuclear Production

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attachment

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SEQUENCE OF EVENTS

FLUCTUATION TESTING 11-04-78

FORT ST. VRAIN NUCLEAR GENERATING STATION

<u>Time</u>	<u>Event/Conditions</u>
0015	Test conditions were established for fluctuation testing Plant conditions: All control systems in automatic Reactor power 39.8% Core resistance 65 Core $\Delta P$ 2.17 psi He Flow 52.1% Core Outlet Temperature 1185°F
0055	Commenced power increase from 39% to 43% at 0.5%/min.
0145	All conditions stable at 43%. No fluctuations evident. Plant conditions: Reactor Power 43% Core resistance 65 Core $\Delta P$ 2.43 He flow 55.6% Core outlet temperature 1199°F
0340	Commenced power increase from 43% to 49% at 0.5%/min. Shim rods (3B) were pulled during the load increase to limit reg-rod withdrawal.

<u>Time</u>	<u>Event/Conditions</u>
0400	Fluctuations were initiated. Although the specific data is still in the process of being reduced, the fluctuations, in general, were characterized by swings of about 1.5% on Channel VII with Channel VI being relatively stable (less than 1%). Main steam temperatures were fluctuating between $\pm 20^{\circ}\text{F}$ .
0430	<p>Approximately 30 to 35 minutes into the fluctuation, the main steam temperature for steam generator module B-1-1 dropped <math>120^{\circ}\text{F}</math>. Some temperature drop was also evident on other steam generator modules, particularly B-1-4 and B-2-2. (From the recorder tracer it is difficult to quantify the temperature drops in B-1-4 and B-2-2, but it appears that these two modules experienced a temperature drop in excess of <math>50^{\circ}\text{F}</math>). With the observation of the main steam temperature swings immediate steps are taken to reduce reactor power to terminate the fluctuation.</p> <p>Plant conditions at 49%: Core resistance 65 Core <math>\Delta\text{P}</math> 2.85</p>
0445	Reactor power reduced to 43%. Fluctuations continue. (It should be noted that only one drop in main steam temperature was observed and that temperature recovered immediately after the drop). Reactor power reduction from 43% to 35% commenced to terminate the fluctuation.
0515	Reactor power reduced to 35%. Fluctuations continue for a short period of time. Main steam temperatures are within $\pm 20^{\circ}\text{F}$ .
0540	<p>Fluctuations dampened out. All conditions stable.</p> <p>Plant conditions: Reactor Power 35% Core <math>\Delta\text{P}</math> 1.84 He Flow 49.7% Core Outlet Temperature <math>1140^{\circ}\text{F}</math></p>

<u>Time</u>	<u>Event/Conditions</u>
0630	Reactor power increased to 40%
0700	Fluctuations (but of a much smaller magnitude) are observed again. Possibly the fluctuations are a continuation of the previous fluctuations. Main steam temperatures are within $\pm 15^{\circ}\text{F}$ variation in the fluctuation.  Plant conditions: Reactor power 40%  Core $\Delta\text{P}$ 2.2 psi
0745	Reactor power reduced to 35%
0815	Fluctuations stopped

No further testing in the fluctuating mode has or will be done pending review with NRC staff.