



Public Service Company of Colorado

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April 23, 1982
Fort St. Vrain
Unit #46



Mr. George Kuzmycz
U. S. Nuclear Regulatory Commission
7920 Norfolk Ave.
Bethesda, MD 20034

SUBJECT: Fort Saint Vrain Unit No. 1
Operational Conditions

Dear Mr. Kuzmycz:

This letter is written to confirm our telephone conversation of April 22, 1982 wherein our various operational problems were discussed and our plan for meeting various NRC requirements was set forth.

The following represents a summary of our situation and our plans for corrective action:

1. On April 12, 1982 we discovered a possible leak in System 46 (liner cooling system) wherein it appeared that a leak path existed for primary coolant from the reactor vessel to enter System 46.

We began an investigation of this leak path, but as we raised reactor power the leak disappeared and we were not able to determine the leakage path. On April 20, 1982, we were unable to continue any further evaluation of System 46, and based on conversations with Mr. G. L. Plumblee, NRC Resident Inspector, it was decided to reduce reactor power back to the conditions under which the leak was originally observed. Reactor power was reduced, the turbine taken off line, and our evaluation of System 46 leakage was continued.

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Based on our evaluation to date, we believe we have isolated the System 46 leakage problem to one tube in the core support floor. Our evaluation, however, is not conclusive at this time and our plans are as follows:

- A. Continue evaluation of the suspected leaking tube. This leak appears to be temperature dependent and therefore our continued evaluation necessitates keeping the reactor at varying power levels.
 - B. In the interim we are proceeding with engineering evaluations and a design fix on the assumption that continued testing will support our preliminary results and will result in isolating and capping the leaking tube in the core support floor.
2. In conjunction with the high moisture levels we have experienced in the core, and our subsequent evaluation of this matter with the Nuclear Facility Safety Committee we were requested to investigate the conditions surrounding previous high moisture levels wherein we had experienced boric acid crystallization on the boron balls in the reserve shut down systems.

Our investigation lead us to Amendment 13 and the NRC safety evaluation supporting this amendment as transmitted by your letter of June 18, 1976. In this safety evaluation it is stated, "should reactor conditions at some time in the future be such that moisture condensation can again occur in the reserve shut down system hoppers, the reactor should not be operated until it is reconfirmed that functional capability of the system has not been affected. The NRC will review any future abnormal occurrence reports concerning high primary coolant moisture levels to determine whether condensation has occurred necessitating corrective action".

Based on this evaluation and these NRC statements coupled with our recent moisture levels, we believe to satisfy NRC requirements that a reserve shutdown hopper must be tested to demonstrate functionability. Most certainly our recent moisture levels have not approached the levels of those evaluated in Amendment 13, and the reserve shut down system was demonstrated to remain operable under these conditions. Since our moisture levels have been much lower we have every reason to believe that the reserve shut down hoppers are now operable, but due to our lack of knowledge of the conditions represented in Amendment 13 we have not actually demonstrated functionability.


To demonstrate functionability will require reactor depressurization, removal of a control rod drive assembly, and a actual test of the reserve shut down hopper.

3. Given that System 46 testing, depressurization, and the risk of introducing more moisture in the primary system while depressurized with a potential System 46 leak are in direct conflict with each other, it is necessary for us to proceed as follows:
 - A. Continue System 46 testing to identify and isolate any and all leaking tubes that may have communication with the primary system.
 - B. Concurrent with System 46 testing perform engineering and safety evaluations for necessary corrective action.
 - C. Both A and B above will require reactor operation at various power levels primarily between 2% and 20% power and could require power levels approaching 30% if temperature dependency becomes a significant part of the evaluation.
 - D. Upon completion of our evaluation of System 46 reduce reactor power to 2% in preparation for depressurization.
 - E. Prior to depressurization minimize the effects that any System 46 leakage may have on primary coolant moisture levels.
 - F. Depressurize the reactor vessel for the purpose of corrective action repairs to System 46.
 - G. While depressurized remove and replace the control rod drive in Region 19. This control rod appears to have experienced some problems with moisture condensation and is therefore the most logical candidate for reserve shut down hopper operability testing.
 - H. Test the reserve shut down hopper on the control rod drive assembly from Region 19 by conducting an actual release test of the boron balls in the hot service facility.
 - I. Assuming System 46 repairs can be successfully completed and we successfully demonstrate operability of the reserve shut down hopper we will repressurize the reactor vessel and return to rise-to-power operations.

As we discussed, we believe the above plan represents the most prudent way to proceed with reference to resolving the problems at hand in that proceeding along this path curtails degrading primary coolant conditions, unnecessary contamination of System 46, and at the same time permits resolution of NRC requirements regarding the reserve shut down system.

I believe this represents the results of our telephone conversation and unless we hear from you to the contrary, we are proceeding on this basis. We will keep your office informed of our progress.

Very truly yours,


Don W. Warembourg
Manager, Nuclear Production
Fort St. Vrain Nuclear
Generating Station

DWW/skd

cc: John Collins
Region IV

Bill Dickerson
NRC Resident Inspector