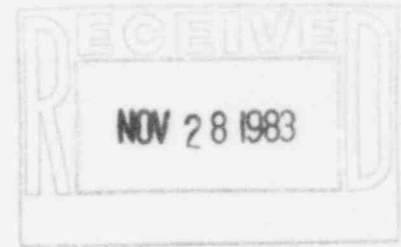




# Public Service Company of Colorado

16805 Road 19 1/2, Platteville, Colorado 80651-9298

November 23, 1983  
Fort St. Vrain  
Unit No. 1  
P-83374



Mr. John T. Collins, Regional Administrator  
Region IV  
Nuclear Regulatory Commission  
611 Ryan Plaza Drive  
Suite 1000  
Arlington, Texas 76011

Reference: Facility Operating License  
No. DPR-34

Docket No. 50-267

Dear Mr. Collins:

Enclosed please find a copy of Reportable Occurrence Report No. 50-267/80-62, Reportable Occurrence Report No. 50-267/83-045, and Reportable Occurrence Report No. 50-267/83-046, Finals, and Reportable Occurrence Report No. 50-267/83-011, Revised Final, submitted per the requirements of Technical Specification AC 7.5.2(a)9 and Technical Specification AC 7.5.2(b)2.

Also, please find enclosed one copy of the Licensee Event Report for Reportable Occurrence Report No. 50-267/80-62, Reportable Occurrence Report No. 50-267/83-045, Reportable Occurrence Report No. 50-267/83-046, and Reportable Occurrence Report No. 50-267/83-011.

Very truly yours,

*Don Warembourg by Milt McBride*  
Don Warembourg  
Manager, Nuclear Production

DW/djm

Enclosures

cc: Director, MIPC

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REPORT DATE: November 23, 1983  
Determined  
OCCURRENCE DATE: October 22, 1980

REPORTABLE OCCURRENCE 80-62  
ISSUE 1  
Page 1 of 7

FORT ST. VRAIN NUCLEAR GENERATING STATION  
PUBLIC SERVICE COMPANY OF COLORADO  
16805 WELD COUNTY ROAD 19 1/2  
PLATTEVILLE, COLORADO 80651-9298

REPORT NO. 50-267/80-62/01-X-1

Final

IDENTIFICATION OF  
OCCURRENCE:

On Thursday, October 21, 1980, at 2300 hours, while the plant was operating at 47% thermal power and 144 MWe, it was determined that the isolation valve for the A purification train (HV-2301) would not close either electrically or by the handjack and was therefore considered inoperable at that time. The valve was closed manually using the handjack on October 22, 1980, at 0830 hours.

| This event was reportable per Fort St. Vrain Technical Specification AC 7.5.2(a)9.

CONDITIONS PRIOR  
TO OCCURRENCE:

Steady State Power

The major plant parameters at the time of the event were as follows:

Reactor Power 396 MWth, 47%

Primary Coolant

Pressure 672 psia

Temperature 677°F Circulator Inlet

Temperature 1,180°F Core Outlet

Total Flow 2,430 Klb/hr, 69%

Secondary Coolant

Pressure 2,440 psig

Temperature 970°F

Flow 1,060 Klb/hr, 46%

Electrical Power 144 MWe, 42%

DESCRIPTION OF  
OCCURRENCE:

Fort St. Vrain has two parallel helium purification trains which remove the impurities from the primary coolant on a continuous basis. These trains are alternated as required with one train being in service while the other is shutdown to allow activity to decay and the train to be regenerated.

On October 21, 1980, it was determined the in service train, A, should be removed from service for regeneration and train B placed in service. Operations personnel placed train B in service and then removed train A from service. Train A was isolated from the purified helium system by closing HV-2303, the outlet isolation valve. Due to the inability to close HV-2301, train A could not be isolated from the primary coolant system at that time. Operations personnel attempted to close the valve manually, but could not get the manual operator engaged and therefore declared the valve inoperable at 2300 hours.

On October 22, 1980, at 0830 hours, Operations personnel and Electrical Maintenance personnel again checked the valve controls and attempted to close the valve. The operator engaged the manual operator with no difficulty and closed the valve.

HV-2301 was manufactured by Velan Valve Corp. It is a two inch, 845 PSIG, stainless steel, Model P-33876-17, electric motor operated, globe valve.

APPARENT CAUSE  
OF OCCURRENCE:

Other

It appeared that the valve operator motor was running but was not engaged. This indicated possible jamming or interference with the manual operator. Subsequent attempts of manual operation proved successful, indicating possible lack of knowledge/experience as to the correct method of engaging and manually operating this particular type valve.

ANALYSIS OF  
OCCURRENCE:

See Figure 1. The failure of HV-2301 or HV-2302 to operate must be analyzed for two conditions. One condition is the postulated permanent loss of forced cooling where one of the two inlet isolation valves, HV-2301 for train A or HV-2302 for train B, must be open so that a depressurization path is available. The second condition is the postulated maximum credible accident which requires that the inlet isolation valve, HV-2301 for train A or HV-2302 for train B, be closed and remain closed if a leak to the purification regeneration system occurs.

The depressurization path required by LCO 4.2.18 is based on the accident analysis of the Final Safety Analyses Report (FSAR) which requires that in the event of a permanent loss of forced cooling, the PCRV must be vented via the purification train. This depressurization path from the primary coolant system is as follows: A-2301 or A-2302, high temperature filter/adsorbers; HV-2301 or HV-2302, purification inlet isolation valves; E-2301 or E-2302, helium purification coolers; A-2303 or A-2304, helium purification dryers; E-2303 or E-2304, low temperature gas to gas exchangers; A-2305 or A-2306, low temperature adsorbers; E-2303 or E-2304, low temperature gas to gas exchanger; HV-2303 or HV-2304, purification outlet isolation valves; F-2301 or F-2302, purified helium filters; then at (A) or (B) transferring to the common pump down line to the ventilation exhaust system. This depressurization path requirement can be met with either of the purification trains. At the time of this occurrence, both inlet isolation valves were open and depressurization could have been accomplished satisfying the requirements of LCO 4.2.18.

The Maximum Credible Accident (Case 6) described in Section 14.8 of the Final Safety Analysis Report consists of the largest credible identifiable accidental leakage from the primary coolant system, resulting from a multiple failure accident involving the helium purification system regeneration piping.

See Figure 2. Primary Coolant Leakage Potential. Leakage of the normally closed valve "A" between a helium purification train and the regeneration equipment could release primary coolant activity to the gas waste surge tanks in the radioactive gas waste system, but only if normally closed valve "B" between the regeneration section and the gas waste system also leaks, and if normally closed valves "C", "D1", or "D2", and "E" in the regeneration section are open. However, this leakage would not lead to uncontrolled release of activity to the atmosphere, and would be terminated with remote-manual closure of the normally open isolation valve "G" between the high temperature filter/absorber and the helium purification cooler of the affected train.

Valve "G" described here is HV-2301 for train A and HV-2302 for train B. With HV-2301 inoperable this leakage could not be remotely terminated as described in the Final Safety Analysis Report.

In the Final Safety Analysis Report analysis of a leak from a purification train to the regeneration system the entire purification train is considered as doubly contained and a direct release of activity from this equipment would require at least two unrelated failures.

CORRECTIVE  
ACTION:

| The valve was manually closed and considered operable on the handjack  
| at 0830 hours on October 22, 1980.

| On July 1, 1981, during a plant outage for refueling, HV-2301 was  
| electrically tested and found to operate as designed.

| On July 8, 1981, HV-2301 was declared operable either electrically or  
| manually.

| Manual operation instructions for HV-2301/02 are presently  
| incorporated in the system operating procedure for the helium  
| purification system.

| No further corrective action is anticipated or required.

FAILURE DATA/SIMILAR REPORTED OCCURRENCES:

None

PROGRAMMATIC IMPACT:

None

CODE IMPACT:

None



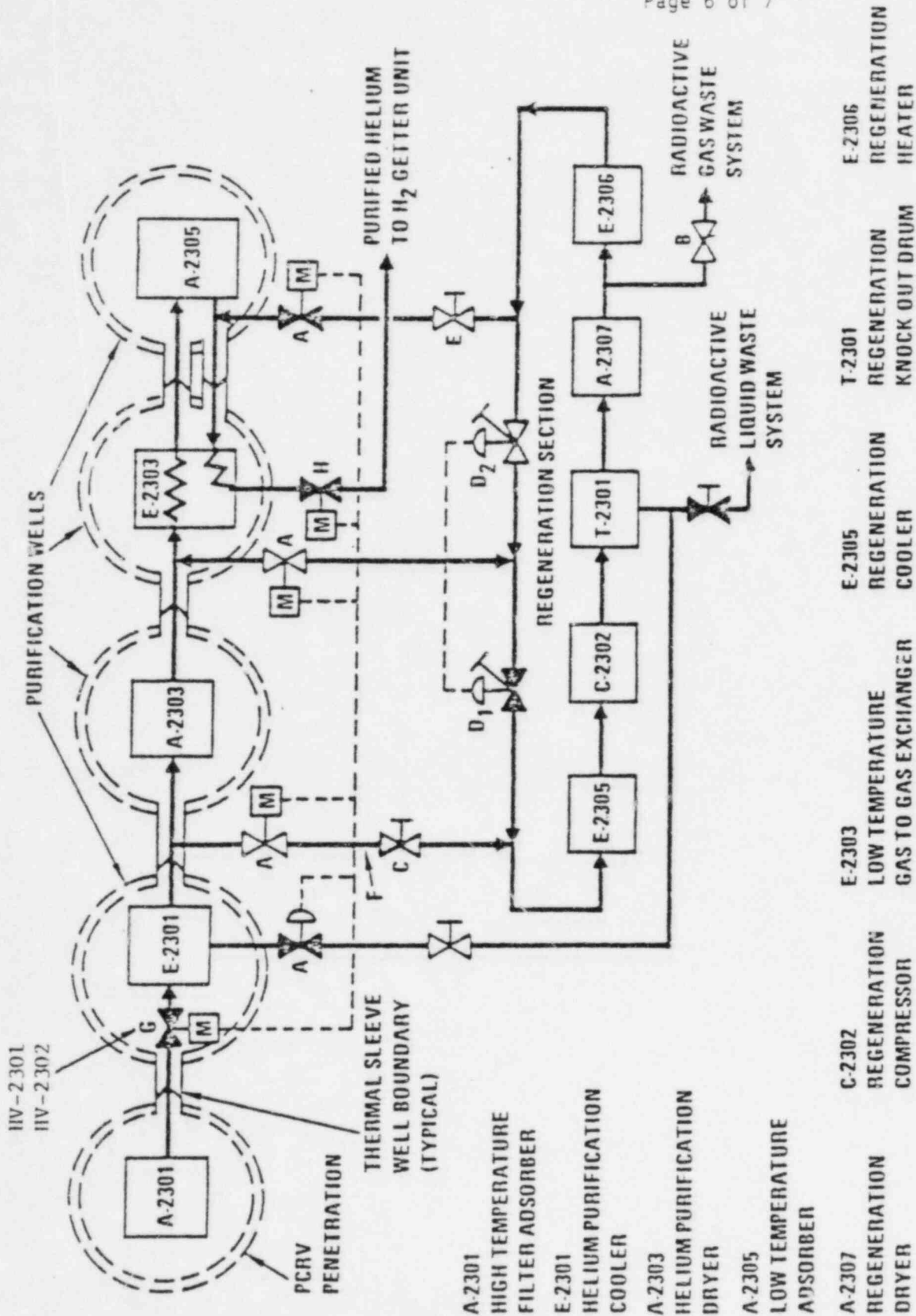


FIGURE 2

Fig. 14.8-1--Simplified process flow diagram of the helium purification system for the maximum credible accident discussion (valves shown positioned for the regeneration of helium purification dryer) Amendment 26

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