

PUBLIC SERVICE COMPANY OF COLORADO  
FORT ST. VRAIN NUCLEAR GENERATING STATION

MONTHLY OPERATIONS REPORT

NO. 106

November, 1982

FORM 288 22 0218

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PDR ADOCK 05000267  
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This report contains the highlights of the Fort St. Vrain, Unit No. 1, activities operated under the provisions of the Nuclear Regulatory Commission Operating License DPR-34. This report is for the month of November, 1982.

1.0 NARRATIVE SUMMARY OF OPERATING EXPERIENCE AND MAJOR SAFETY RELATED MAINTENANCE

The reactor power was less than 2% for much of the month.

Primary coolant moisture still is excessive, thus preventing reactor power from being increased.

In order to more rapidly reduce the moisture in the core, additional flow is being pushed through the purification train. Although not all utilized in the purified helium header, the remainder is being directly returned back to the vessel. Because of this increased flow rate and high primary coolant moisture, regeneration of the trains in a timely manner becomes more critical. This has been difficult to accomplish before the in-service train becomes exhausted. Presently, approximately 220 gallons of water has been taken out of the vessel via the purification trains.

In an attempt to allow the trains to be in service longer, a change to the purification system is being implemented. This change will allow the helium purification coolers to be cooled to a lower temperature utilizing a chilled water system. It is believed that utilizing this system will allow more water to be removed by the cooler and thus require less frequent dryer and low temperature adsorber regenerations.

Presently, primary coolant moisture appears to be just starting a downward trend.

Several tests were done during the month on the System 46/core support floor. Nitrogen gas was injected into the System 46 pumps discharge line, as it was anticipated that this gas could be detected in both the primary coolant and core support floor vent to positively determine the leak paths. However, the nitrogen gas injection was not conclusive. Argon gas then was injected in a similar manner. This injection appears more conclusive, as argon gas was detected in the core support floor gas effluent. During either test, argon or nitrogen was not detected in the primary coolant.

Further investigations into the primary coolant moisture problems have included taking both steam generator economizer/evaporator superheater sections out of service,

sequentially taking both loops of System 46 out of service, and varying reactor power. As of the end of the month, these tests have failed to reveal that there is a source of moisture other than some water that may have entered the vessel during depressurization. These tests are continuing into the next month.

Recent testing has also revealed a possible leak in the front-end cooler for 1B purification train. This situation is being further evaluated, and material availability and repair techniques are being investigated.

A number of training starts were completed during the month for both the license candidates and the licensed personnel.

Miscellaneous drain pump, P-7508, and auxiliary boiler feed pump, P-8401S, were overhauled, and the motors on hydraulic pumps, P-9104X and P-9105X, were removed for repairs which amounted to a motor rewind for one pump motor and replacement of the other.

The turbine water removal pump motor, P-2103, was disassembled to replace bearings and install a new coupling. This pump unit awaits parts at this time.

2.0 SINGLE RELEASES OF RADIOACTIVITY OR RADIATION EXPOSURE IN EXCESS OF 10% OF THE ALLOWABLE ANNUAL VALUE

None

3.0 INDICATION OF FAILED FUEL RESULTING FROM IRRADIATED FUEL EXAMINATIONS

None

4.0 MONTHLY OPERATING DATA REPORT

Attached

OPERATING DATA REPORT

DOCKET NO. 50-267

DATE December 7, 1982

COMPLETED BY L. M. McBride

TELEPHONE (303) 785-2224

OPERATING STATUS

NOTES

1. Unit Name: Fort St. Vrain
2. Reporting Period: 821101 through 821130
3. Licensed Thermal Power (Mwt): 842
4. Nameplate Rating (Gross MWe): 342
5. Design Electrical Rating (Net MWe): 330
6. Maximum Dependable Capacity (Gross MWe): 342
7. Maximum Dependable Capacity (Net MWe): 330
8. If Changes Occur in Capacity Ratings (Items Number 3 Through 7) Since Last Report, Give Reasons:  
None
9. Power Level To Which Restricted, If Any (Net MWe): 231
10. Reasons for Restrictions, If Any: Restriction to 70% pending resolution of contractual matters.

	This Month	Year to Date	Cumulative
11. Hours in Reporting Period	<u>720</u>	<u>8016</u>	<u>29977</u>
12. Number of Hours Reactor Was Critical	<u>538.8</u>	<u>4745.0</u>	<u>19323.4</u>
13. Reactor Reserve Shutdown Hours	<u>0</u>	<u>0</u>	<u>0</u>
14. Hours Generator On-Line	<u>0</u>	<u>3266.2</u>	<u>13174.5</u>
15. Unit Reserve Shutdown Hours	<u>0</u>	<u>0</u>	<u>0</u>
16. Gross Thermal Energy Generated (MWH)	<u>6541.9</u>	<u>1849177.5</u>	<u>6783122.3</u>
17. Gross Electrical Energy Generated (MWH)	<u>0</u>	<u>635548</u>	<u>2326904</u>
18. Net Electrical Energy Generated (MWH)	<u>-5330</u>	<u>573085</u>	<u>2127344</u>
19. Unit Service Factor	<u>0</u>	<u>40.7</u>	<u>43.9</u>
20. Unit Availability Factor	<u>0</u>	<u>40.7</u>	<u>43.9</u>
21. Unit Capacity Factor (Using MDC Net)	<u>0</u>	<u>21.7</u>	<u>21.5</u>
22. Unit Capacity Factor (Using DER Net)	<u>0</u>	<u>21.7</u>	<u>21.5</u>
23. Unit Forced Outage Rate	<u>100.0</u>	<u>36.3</u>	<u>34.6</u>

24. Shutdowns Scheduled Over Next 6 Months (Type, Date, and Duration of Each): Plant recovery 821201 through 830115-1104.0 hours. Surveillance testing 830823 through 830422-744.0 hrs..

25. If Shut Down at End of Report Period, Estimated Date of Startup: Reactor is critical at low power.

26. Units In Test Status (Prior to Commercial Operation):

INITIAL CRITICALITY

N/A

Achieved

N/A

INITIAL ELECTRICITY

N/A

N/A

COMMERCIAL OPERATION

N/A

N/A

# AVERAGE DAILY UNIT POWER LEVEL

TSP-3  
Attachment-3A  
Issue 2  
Page 1 of 1

Docket No. 50-267

Unit Fort St. Vrain

Date December 7, 1982

Completed By L. M. McBride

Telephone (303) 785-2224

Month November

DAY AVERAGE DAILY POWER LEVEL  
(MWe-Net)

1	<u>0.0</u>
2	<u>0.0</u>
3	<u>0.0</u>
4	<u>0.0</u>
5	<u>0.0</u>
6	<u>0.0</u>
7	<u>0.0</u>
8	<u>0.0</u>
9	<u>0.0</u>
10	<u>0.0</u>
11	<u>0.0</u>
12	<u>0.0</u>
13	<u>0.0</u>
14	<u>0.0</u>
15	<u>0.0</u>
16	<u>0.0</u>

DAY AVERAGE DAILY POWER LEVEL  
(MWe-Net)

17	<u>0.0</u>
18	<u>0.0</u>
19	<u>0.0</u>
20	<u>0.0</u>
21	<u>0.0</u>
22	<u>0.0</u>
23	<u>0.0</u>
24	<u>0.0</u>
25	<u>0.0</u>
26	<u>0.0</u>
27	<u>0.0</u>
28	<u>0.0</u>
29	<u>0.0</u>
30	<u>0.0</u>
31	<u>N/A</u>

\*Generator on line but no net generation.

UNIT SHUTDOWNS AND POWER REDUCTIONS

DOCKET NO. 50-267  
UNIT NAME Fort St. Vrain  
DATE December 7, 1982  
COMPLETED BY L. M. McBride  
TELEPHONE (303) 785-2224

REPORT MONTH November 1982

NO.	DATE	TYPE	DURATION	REASON	METHOD OF SHUTTING DOWN REACTOR	LER #	SYSTEM CODE	COMPONENT CODE	CAUSE AND CORRECTIVE ACTION TO PREVENT RECURRENCE
82-0148	1101	F	720.0	H	3	N/A	IBH	INSTRU	Loop 1 Shutdown followed by reactor scram and turbine-generator trip on 820930. Outage continued due to primary coolant chemistry impurities.

Continue to cleanup primary coolant and investigate possible steam generator tube leak.



# REFUELING INFORMATION

1. Name of Facility.	Fort St. Vrain Unit No. 1
2. Scheduled date for next refueling shutdown.	September 1, 1983
3. Scheduled date for restart following refueling.	November 1, 1983
4. Will refueling or resumption of operation thereafter require a technical specification change or other license amendment?	Yes
If answer is yes, what, in general, will these be?	Use of type H-451 graphite.
If answer is no, has the reload fuel design and core configuration been reviewed by your Plant Safety Review Committee to determine whether any unreviewed safety questions are associated with the core reload (Reference 10CFR Section 50.59)?	-----
If no such review has taken place, when is it scheduled?	-----
5. Scheduled date(s) for submitting proposed licensing action and supporting information.	Not scheduled at this time; to be determined.
6. Important licensing considerations associated with refueling, e.g., new or different fuel design or supplier, unreviewed design or performance analysis methods, significant changes in fuel design, new operating procedures.	-----
7. The number of fuel assemblies (a) in the core and (b) in the spent fuel storage pool.	1482 HTGR fuel elements. 11 spent HTGR fuel elements
8. The present licensed spent fuel pool storage capacity and the size of any increase in licensed storage capacity that has been requested or is planned, in number of fuel assemblies.	Capacity is limited in size to about one-third of core (approximately 500 HTGR elements). No change is planned.

REFUELING INFORMATION (CONTINUED)

- |   |  |
|---|--|
| 9. The projected date of the last refueling that can be discharged to the spent fuel pool assuming the present licensed capacity. | 1992 under Agreements AT(04-3)-633 and DE-SC07-79ID01370 between Public Service Company of Colorado, General Atomic Company, and DOE.* |
|---|--|

\* The 1992 estimated date is based on the understanding that spent fuel discharged during the term of the Agreements will be stored by DOE at the Idaho Chemical Processing Plant. The storage capacity has evidently been sized to accommodate eight fuel segments. It is estimated that the eighth fuel segment will be discharged in 1992.