

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

MONTHLY OPERATIONS REPORT

NO. 104

September, 1982

OHM 206 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 September, 1982.

## 1.0 NARRATIVE SUMMARY OF OPERATING EXPERIENCE AND MAJOR SAFETY RELATED MAINTENANCE

### 1.1 Summary

Except for some minor short-term load reductions, the plant operated at 70% power until the end of the month.

On September 30, while performing a surveillance on the plant protection system, a spurious trip caused a loop shutdown followed by a turbine trip and reactor scram. This terminated about 3 1/2 months of continuous operation.

Plans are underway to complete required surveillances and make the necessary repairs to return to power operation.

### 1.2 Operations

Reactor power was generally maintained at about 70% throughout the month with the following exceptions.

Reactor power was decreased to about 67% to remove 1A boiler feedpump from service to repair its discharge check valve. The 1A boiler feedpump was repaired, and power was increased to 70% on September 3.

At 1304 hours on September 8, a system frequency upset occurred causing a turbine and reactor power runback of about 30 megawatts. Plant power was returned to 70% by 1545 hours.

On September 27, between 0100 and 0530 hours, plant load was decreased to 180 MWe at the request of the system dispatcher. At 0835 hours, there was a turbine runback to about 66% when a backup bearing water safety valve opened spuriously.

On September 30 at 0548 hours, while performing a Surveillance Test on the ultrasonic pipe rupture detection system, a spurious trip caused a Loop 1 shutdown. Rapidly decreasing main steam temperature in the remaining loop subsequently caused a turbine trip and a two-loop trouble scram.

At the end of the month, the reactor was shutdown. Surveillances, which require the plant to be shutdown to

perform are being done, and work is in progress to prepare the plant for operation.

We are experiencing some difficulty with our condensate/feedwater systems. High and variable concentrations of chlorine in the domestic water supply appears to be causing rapid exhaustion of the makeup and condensate polisher resin. This results in decreased capability to make up to the condensate system, as well as increased consumption for regeneration.

On September 14, a mobile makeup demineralizer was brought on site. By September 18, this unit processed 300,000 gallons of water to regenerate all exhausted resins and fill the storage tanks. Although the domestic water supplier has indicated they are taking corrective measures, chlorine, as well as insufficient supply capability, remain to be problems.

A fire drill was conducted on September 13 in which the Platteville Fire Department participated. In addition, fire drills were conducted on September 20 and on September 27.

Contract personnel began arriving on September 15 to begin work on the refurbishment of the outside auxiliary boiler. Among other things, new internals are being installed in the upper drum, a heating coil is being installed in the lower drum, and brick work is being repaired.

Helium purification train 1B broke through on September 22. When the operators tried to isolate the train for regeneration, it was found that HV-2302, the train inlet valve, was bound up and would not close using the motor. Attempts to close the valve using the the handjack were not successful. This valve is in a well in the top of the prestressed concrete reactor vessel and cannot be repaired until the reactor is shut down and depressurized to less than 100 psia.

A new replacement tube bundle for heater #5 arrived on site. The old heater #5 was moved down to the railroad bay on September 15. The shell was removed from it and the bundle was removed from the site.

Backup bearing water pressure control valves and safety valves continue to cause problems. The system was out of service twice during the month to rebuild the safety valves.

The main steam desuperheater drain lines between the level control valves and the condenser has developed many leaks

which resulted in emergency repairs during the month. A temporary repair was finally made by jacketing the line with furmanite.

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 October 6, 1982

COMPLETED BY L. M. McBride

TELEPHONE (303) 785-2224

OPERATING STATUS

NOTES

1. Unit Name: Fort St. Vrain
2. Reporting Period: 820901 through 820930
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: NRC restriction of 70% pending resolution of temperature fluctuations.

	This Month	Year to Date	Cumulative
11. Hours in Reporting Period	<u>720</u>	<u>6,551</u>	<u>28,512</u>
12. Number of Hours Reactor Was Critical	<u>701.9</u>	<u>4,169.4</u>	<u>18,747.8</u>
13. Reactor Reserve Shutdown Hours	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>
14. Hours Generator On-Line	<u>701.9</u>	<u>3,266.2</u>	<u>13,174.5</u>
15. Unit Reserve Shutdown Hours	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>
16. Gross Thermal Energy Generated (MWH)	<u>407,778.9</u>	<u>1,842,485.5</u>	<u>6,776,430.3</u>
17. Gross Electrical Energy Generated (MWH)	<u>149,021</u>	<u>635,548</u>	<u>2,326,904</u>
18. Net Electrical Energy Generated (MWH)	<u>140,362</u>	<u>581,845</u>	<u>2,136,104</u>
19. Unit Service Factor	<u>97.5</u>	<u>49.9</u>	<u>46.2</u>
20. Unit Availability Factor	<u>97.5</u>	<u>49.9</u>	<u>46.2</u>
21. Unit Capacity Factor (Using MDC Net)	<u>59.1</u>	<u>26.9</u>	<u>22.7</u>
22. Unit Capacity Factor (Using DER Net)	<u>59.1</u>	<u>26.9</u>	<u>22.7</u>
23. Unit Forced Outage Rate	<u>2.5</u>	<u>10.7</u>	<u>29.5</u>

24. Shutdowns Scheduled Over Next 6 Months (Type, Date, and Duration of Each): Maintenance outage - 821101 through 821215 - 1,080 hours. Plant recovery - 821001 through 821007 - 168 hours.
25. If Shut Down at End of Report Period, Estimated Date of Startup: 821008\*\*

Units In Test Status (Prior to Commercial Operation):	Forecast	Achieved
INITIAL CRITICALITY	<u>N/A</u>	<u>N/A</u>
INITIAL ELECTRICITY	<u>N/A</u>	<u>N/A</u>
COMMERCIAL OPERATION	<u>N/A</u>	<u>N/A</u>

\*\*821008 date reflects information as of September 30, 1982. Anticipated startup date is not determined as of this transmittal dated October 12, 1982.

AVERAGE DAILY UNIT POWER LEVEL

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

Docket No. 50-267

Unit Fort St. Vrain

Date October 6, 1982

Completed By L. M. McBride

Telephone (303) 785-2224

Month September, 1982

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
1	<u>192.1</u>
2	<u>195.2</u>
3	<u>189.8</u>
4	<u>198.7</u>
5	<u>197.7</u>
6	<u>197.5</u>
7	<u>198.4</u>
8	<u>198.2</u>
9	<u>186.0</u>
10	<u>201.5</u>
11	<u>202.6</u>
12	<u>202.1</u>
13	<u>202.4</u>
14	<u>202.0</u>
15	<u>203.5</u>
16	<u>201.9</u>

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
17	<u>201.0</u>
18	<u>202.5</u>
19	<u>202.5</u>
20	<u>202.8</u>
21	<u>202.0</u>
22	<u>202.7</u>
23	<u>203.2</u>
24	<u>202.1</u>
25	<u>201.7</u>
26	<u>201.1</u>
27	<u>195.0</u>
28	<u>203.1</u>
29	<u>203.4</u>
30	<u>42.4</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 October 6, 1982  
 COMPLETED BY L. M. McBride  
 TELEPHONE (303) 785-2224

REPORT MONTH September, 1982

NO.	DATE	TYPE	DURATION	REASON	METHOD OF SHUTTING DOWN REACTOR	LER #	SYSTEM CODE	COMPONENT CODE	CAUSE AND CORRECTIVE ACTION TO PREVENT RECURRENCE
82-014	820930	F	18.1	H	3	N/A	IBH	INSTRU	Loop 1 shutdown followed by reactor scram and turbine-generator trip.

REFUELING INFORMATION

1. Name of Facility.	Fort St. Vrain Unit No. 1
2. Scheduled date for next refueling shutdown.	October 1, 1983
3. Scheduled date for restart following refueling.	December 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 77 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.