WOLF CREEK
NUCLEAR OPERATING CORPORATION

Otto L. Maynard
Vice President Plant Operations

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WO 95-0032

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Mail Station P1-137
Washington, D. C. 20555

Subject: Docket No. 50-482: 1994 Annual Operating Report for Wolf Creek Generating Station

Gentlemen:

The attached Annual Operating Report is being submitted pursuant to Wolf Creek Generating Station, Unit No. 1, Technical Specifications 6.9.1.4 and 6.9.1.5. This report covers operations for the period of January 1, 1994, through December 31, 1994.

Very truly yours,

Otto L. Maynard

OLM/jad

Attachment

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WOLF CREEK NUCLEAR OPERATING CORPORATION

WOLF CREEK GENERATING STATION

DOCKET NO: 50-482

FACILITY OPERATING LICENSE: NPF-42

ANNUAL OPERATING REPORT

REPORT NO. 10

Reporting Period: January 1, 1994 through December 31, 1994

EXECUTIVE SUMMARY

This Annual Operating Report provides a summary of the operating experience at Wolf Creek Generating Station. This Annual Operating Report also provides a summary of the major safety-related maintenance activities completed during the year. This report covers the period beginning on January 1, 1994, and ending on December 31, 1994.

This Annual Operating Report is submitted in accordance with the requirements of Technical Specification 6.9.1.4 and contains the information required by Technical Specification 6.9.1.5. The format of this report is similar to that provided in Regulatory Position C.1.b of Regulatory Guide 1.16, Revision 4, August, 1975.

In 1994, Wolf Creek Generating Station's availability factor was 85.6 percent with a capacity factor (using maximum dependable capacity) of 84.7 percent. Wolf Creek Generating Station experienced brief periods of manually initiated power reduction in January. The unit completed its seventh refueling outage in November, 1994.

1. SUMMARY OF OPERATING EXPERIENCE

A summary of Wolf Creek Generating Station's operating experience and major safety-related maintenance activities completed during 1994 is provided by month below. This information has been previously submitted in accordance with the requirements of Technical Specification 6.9.1.8 in the Monthly Operating Reports for January through December, 1994.

January

The unit operated near 100% power until January 14, 1994, at 1945 hours, when the unit commenced power reduction to repair a containment cavity cooling fan. At 2334, the unit was at 50% power. January 15, 1994, at 1049 hours, the unit entered Mode 2, startup, and at 1251 hours, the unit entered Mode 3, hot standby. On January 17, 1994, at 1007 hours, the unit entered Mode 2, startup, and entered Mode 1, power operation, at 1617 hours. January 18, 1994, at 2336 hours, the unit operated at near 100% power. January 26, 1994, at 1633 hours, the unit commenced power reduction due to a Rod Control Urgent Failure Alarm; at 30% power the reactor was manually tripped, and the unit entered Mode 3, hot standby. At 0244 hours on January 27, 1994, a Notification of Unusual Event (NUE) was declared, based on the inability to meet Technical Specification 3.1.3.1, Action 4. The NUE was terminated at 0423 hours. Rod Control repair was performed, but while returning the unit to service a subsequent Rod Control Urgent Failure Alarm was received, and on January 28, 1994, at 1733, the unit was manually tripped from Mode 2 for replacement of a thyristor in the rod control system. The unit entered Mode 1, power operation, on January 29, 1994, at 1321. On January 30, 1994, the unit operated at approximately 100% power.

February

The unit operated at or near 97% power for most of the month of February. Full power could not be attained due to main turbine nozzle restriction.

On February 18, power was reduced to approximately 92% power for a period of 19 hours to accommodate main turbine valve testing. The number 1 Control Valve did not initially full close, extending the time required for performance of the test.

March

The unit operated at or near 97% power for the first nine days of the month of March. Full power could not be attained due to main turbine nozzle restriction. On March 9, 1994, unit rerate increased power to approximately 100% power. The unit remained at or near full power for the remainder of the month.

April

The unit operated at or near 100% power throughout the month of April.

May

The unit operated at or near 100% power until May 21, 1994, at 1025 hours, when power was reduced to 90% for condenser tube cleaning. The unit was returned to 100% power on May 23, 1994, at 1300, and continued to operate at or near 100% power for the remainder of the month of May.

June

The unit operated at or near 100% power the entire month of June.

July

The unit operated at approximately 96% power from July 1 through July 17 due to main condenser tube fouling. On July 17, when a switchyard breaker opened, power was reduced to 80%. The breaker was reclosed after 1 hour and power was restored to approximately 96%, where it remained until July 19. Condenser tube cleaning on July 19 and July 20 allowed the unit to return to full power for the remainder of the month of July.

August

The unit operated at approximately 100% power from August 1 through August 26. On August 26, at 0341, power was reduced to approximately 93% for main turbine valve testing. Power remained at approximately 93% for the remainder of August to minimize xenon transients, and to begin coastdown for the upcoming refueling outage.

September

The unit was operating at 93% power on September 1, 1994, when it entered the end of core-life coastdown. On September 14, 1994, at 0001, the generator output breakers were opened, and the unit began the seventh refueling outage.

October

The unit was shut down for refueling during October. By midnight of October 31, 1994, the unit had been heated up to full temperature, and low-power physics testing had been completed with the plant in Mode 2, startup.

Following is a list of major safety-related corrective maintenance performed during the seventh refueling outage:

Replaced the seal injection throttle valves
Replaced Reactor Coolant Pump "A" seals
Performed eddy current testing (100%) on Steam Generators "B" and "C"
Replaced inconel 600 plugs with inconel 690 plugs on Steam Generators "B" and "C"
Completed sludge lancing and pressure pulse cleaning of all four steam generators

Performed inspection of feedwater nozzles on Steam Generators "B" and "C"
Changed out safety valves on Pressurizer
Modified conoseals on Reactor head
Performed inspection on underside of Reactor head for cracking around Control Rod Drive Mechanism penetration welds
Changed inlet and outlet isolation valves, and eliminated isolation by-pass loop on containment coolers
Overhauled diesel generators, including modification to the exhaust system; and elimination of the fuel injector cooling system
Replaced environmentally qualified parts on shaft seals of Residual Heat Removal Pump "B"
Replaced rotating assembly of Centrifugal Charging Pump "B"
Performed fiber optic search and retrieval (FOSAR) of Reactor vessel
Completed the in-plant portion of Generic Letter 89-10 requirements for motor operated valves
Modified steam generator supports and snubbers

November

The unit was restarted following the completion of the seventh refueling outage. On November 1, 1994, at 0118, the unit entered Mode 1, Power Operation. Completed Turbine Generator Torsional Restraint Testing; results indicated no problems. On November 2, 1994, at 1231, the generator was synchronized to the grid. On November 2, 1994, at 1610, the plant held power at approximately 30% power for steam generator secondary side chemistry control. On November 3, 1994, at 0400, the unit commenced raising power. On November 6, 1994, at 1426, the unit achieved 100% power, and remained at that level for the remainder of November.

December

The unit operated at or near 100% for the month of December, 1994.

2. SUMMARY OF OUTAGES AND FORCED POWER REDUCTIONS

Provided below is a summary of the 1994 outages and forced power reductions of over 20 percent of design power level where the reduction extended for more than four hours:

1. Start Date: January 14, 1994 — Completion Date: January 17, 1994
   Type: Scheduled — Duration: 68 hours

   Reason: Repair of Containment Cavity Cooling Fan

2. Start Date: January 26, 1994 — Completion Date: January 29, 1994
   Type: Forced — Duration: 68.5 hours

   Reason: Rod Control Urgent Failure Alarm

3. Start Date: September 16, 1994 Completion Date: November 2, 1994

Type: Scheduled Duration: 1141.5 hours

Reason: Manual shutdown on September 16, 1994, for seventh refueling outage.

3. EXPOSURE INFORMATION

a. NUMBER OF PERSONNEL AND MAN-REM BY WORK AND JOB FUNCTION REPORT - 1994

WORK AND JOB FUNCTION	PERSONNEL (> 100 mrem) [1] STATION	UTILITY	CONTRACT	TOTAL MAN-REM [2] STATION	UTILITY	CONTRACT
REACTOR OPERATIONS AND SURVEILLANCE						
MAINTENANCE AND CONSTRUCTION	4	0	4	1.423	0.000	1.815
OPERATIONS	13	2	3	4.332	0.679	0.372
HEALTH PHYSICS AND LAB	18	1	36	6.201	0.207	10.575
SUPERVISORY AND OFFICE STAFF	14	0	6	4.156	0.001	2.247
ENGINEERING STAFF	6	1	1	2.796	0.407	0.528
ROUTINE PLANT MAINTENANCE						
MAINTENANCE AND CONSTRUCTION	15	0	29	5.751	0.009	13.129
OPERATIONS	1	0	0	0.[illegible]3	0.014	0.018
HEALTH PHYSICS AND LAB	1	0	1	0.6[illegible]	0.005	0.153
SUPERVISORY AND OFFICE STAFF	5	0	0	1.545	0.060	0.688
ENGINEERING STAFF	1	0	0	0.495	0.055	0.211
INSERVICE INSPECTION						
MAINTENANCE AND CONSTRUCTION	15	0	32	5.422	0.000	11.641
OPERATIONS	0	0	0	0.115	0.000	0.147
HEALTH PHYSICS AND LAB	5	0	12	1.555	0.000	3.319
SUPERVISORY AND OFFICE STAFF	3	0	4	1.419	0.000	1.874
ENGINEERING STAFF	7	1	55	3.043	0.404	31.114
SPECIAL PLANT MAINTENANCE						
MAINTENANCE AND CONSTRUCTION	15	0	119	7.448	0.000	51.816
OPERATIONS	0	0	0	0.127	0.000	0.005
HEALTH PHYSICS AND LAB	10	0	3	3.104	0.052	1.275
SUPERVISORY AND OFFICE STAFF	2	0	5	2.119	0.000	2.554
ENGINEERING STAFF	3	0	46	1.220	0.234	14.155
WASTE PROCESSING						
MAINTENANCE AND CONSTRUCTION	0	0	0	0.733	0.000	0.501
OPERATIONS	1	0	0	0.326	0.005	0.064
HEALTH PHYSICS AND LAB	12	0	15	4.335	0.009	5.515
SUPERVISORY AND OFFICE STAFF	0	0	0	0.420	0.000	0.000
ENGINEERING STAFF	0	0	0	0.002	0.009	0.000
REFUELING						
MAINTENANCE AND CONSTRUCTION	0	0	2	0.629	0.000	1.490
OPERATIONS	2	0	0	0.737	0.009	0.000
HEALTH PHYSICS AND LAB	3	0	1	0.666	0.000	0.773
SUPERVISORY AND OFFICE STAFF	3	0	2	1.309	0.000	0.624
ENGINEERING STAFF	2	0	47	0.749	0.005	13.253
TOTALS						
MAINTENANCE AND CONSTRUCTION	49	0	186	21.404	0.009	80.393
OPERATIONS	17	2	3	5.901	0.707	0.606
HEALTH PHYSICS AND LAB	49	1	68	16.537	0.273	21.610
SUPERVISORY AND OFFICE STAFF	27	0	17	10.967	0.061	7.988
ENGINEERING STAFF	19	2	149	8.305	1.114	59.261
GRAND TOTALS	161	5	423	63.114	2.164	169.857

[1] Number of personnel > 100 mrem based on PIC data
[2] Total man-rem based on ratio of PIC data applied to TLD data
Actual total mRem = 235088 (numbers may vary due to rounding)

4. SINGLE RELEASE OF RADIOACTIVITY OR RADIATION EXPOSURE GREATER THAN 10 PERCENT OF ALLOWABLE ANNUAL VALUES

During 1994, no single release of radioactivity exceeded 10 percent of the allowable annual value.

During 1994, there was no single radiation exposure specifically associated with an outage which accounted for more than 10 percent of the allowable annual values.

5. CHALLENGES TO THE PORVS AND SAFETY VALVES

During 1994, there were no challenges to the Pressurizer Power Operated Relief Valves (PORVs) or Safety Valves.

6. INDICATIONS OF FAILED FUEL

During the seventh refueling outage in the fall of 1994, ultrasonic inspection of the entire core positively identified two failed rods in one assembly (H33), which was scheduled for discharge. The failed rods were visually inspected in-situ. The collective information of assembly location, rod locations, rod conditions, and manufacturing traceability evaluation support a conclusion that the failure root cause is identical to that observed in the previous two cycles (i.e., grid-to-rod fretting at the bottom grid caused by fluid elastic instability of the fuel rods).

Following startup of the reactor in November, 1994, and through the end of the year, reactor coolant fission product activity indicated no failed fuel.

7. REACTOR COOLANT SYSTEM SPECIFIC ACTIVITY IN EXCESS OF TECHNICAL SPECIFICATION 3.4.8 LIMITATION

The Reactor Coolant System Specific Activity did not exceed the Technical Specification 3.4.8 limitation during 1994.