WOLF CREEK
NUCLEAR OPERATING CORPORATION

Clay C. Warren
Chief Operating Officer

February 21, 1997

WO 97-0029

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

Subject: Docket No. 50-482: 1996 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, 1996, through December 31, 1996. If you have any questions regarding this report, please contact me at (316) 364-8831, extension 4000, or Mr. Richard D. Flannigan at extension 4500.

Very truly yours,

Clay C. Warren

Clay C. Warren

CCW/jad

Attachment

cc: J. E. Dyer (NRC), w/a
D. N. Graves (NRC), w/a
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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. 12

Reporting Period: January 1, 1996 through December 31, 1996

EXECUTIVE SUMMARY

This Annual Operating Report provides a summary of the operating experience at Wolf Creek Generating Station. This report also provides a summary of the major safety-related maintenance activities completed during the year, and covers the period beginning on January 1, 1996, and ending on December 31, 1996.

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 1996, the availability factor for Wolf Creek Generating Station (WCGS) was 80.6 percent with a capacity factor (using maximum dependable capacity) of 80.2 percent. WCGS experienced a Reactor trip due to loss of Circulating Water in January, 1996, and subsequently entered the Refuel VIII outage earlier than scheduled. WCGS returned to power in early April, 1996, decreased load briefly for turbine balancing, and synchronized to the grid on April 20, 1996. In June, 1996, the unit experienced a reactor trip caused by the failure of a roll pin in a Main Feedwater Control Valve causing the valve to close. This resulted in a "low low" Steam Generator "C" water level, and subsequent Reactor trip. In August, 1996, the unit reduced power to repair a crack in a weld at condenser connection #072. Also in August, 1996, the unit reduced power to replace power supply cards in order to eliminate recurring oil fluctuations and filter alarms on the "A" Main Feedwater Pumps. In October, 1996, power was reduced to repair a damaged wire in the "A" Main Feedwater Pump speed control panel.

1. SUMMARY OF OPERATING EXPERIENCE

A summary of Wolf Creek Generating Station's operating experience and major safety-related maintenance activities completed during 1996 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, 1996.

January

The unit operated at or near 100% power, Mode 1, from January 1, 1996, until 0337, January 30, 1996. At that time, the unit was manually tripped due to an ice accumulation on the screens at the Circulating Water Intake Structure. At 1531, on January 30, 1996, the unit entered Mode 4, and at 2248, on January 31, 1996, the unit entered Mode 5.

The unit was scheduled for Refuel VIII Outage to begin approximately March 1, 1996. Because of this event, the unit began the outage at 1800 on February 3, 1996.

February

The unit remained shutdown the entire month of February, 1996, as activities associated with Refuel VIII continued. The unit began the month in Mode 5, and entered Mode 6 at 0315, February 14, 1996. The unit completed fuel off-load at 0623, February 23, 1996.

March

The unit remained in outage conditions throughout the month of March, 1996, as activities associated with Refuel VIII continued. The unit completed reloading fuel on March 16, 1996, in Mode 6. The unit entered Mode 5 at 1343 on March 20, 1996, and entered Mode 4 at 0313 on March 29, 1996.

April

The unit began the month of April, 1996, in Mode 4. The unit was in the process of start-up following Refuel VIII. The unit entered Mode 3 at 2312, April 2, 1996; Mode 2 at 2315 on April 5, 1996; and Mode 1 at 0550 April 7, 1996. The plant reached Mode 1, 100% power at 0430, April 11, 1996. The unit operated at approximately 100% power until commencing turbine/generator load decrease at 2106, April 19, 1996; at 0950 April 20, 1996, the unit was in Mode 2, approximately 5% power, to balance the turbine. Upon completion of turbine balancing work, the unit commenced increasing power. The unit reentered Mode 1 at 1458, and the generator was synchronized to the grid at 2145, April 20, 1996. The unit reached Mode 1, 100% power, at 0000, April 22, 1996, and remained at that level through the end of April, 1996.

May

The unit operated at or near 100% power, Mode 1, from May 1, 1996, through May 31, 1996.

June

The unit operated at or near 100% power, Mode 1, June 1, 1996, until 1320, June 6, 1996, when the Unit experienced a reactor trip caused by a "low-low" level in Steam Generator "C". This resulted from the failure of a 3/16" roll pin in the "C" Steam Generator Main Feedwater Regulating Valve (FRV) which allowed the valve plug to separate from the valve stem. After the pin was replaced in the "C" FRV and pins were replaced in two other FRVs, the unit reached criticality at 0435, June 8, 1996, and the main generator output breakers were closed at 1421, June 8, 1996. The unit remained at or near 100% power, Mode 1, throughout the remainder of June, 1996.

July

The unit operated at or near 100 % power, Mode 1, from July 1, 1996, through July 31, 1996.

August

The unit operated at or near 100% power, Mode 1, August 1, 1996, through August 19, 1996, when power was reduced to repair a crack in the weld at condenser connection #072. At 0505, August 19, 1996, power was stabilized at 55%. Repairs were completed, and at 1800, August 19, 1996, the unit commenced power ascension. The unit was stabilized at 100% power, Mode 1, at 2258, August 19, 1996.

At 0836, August 20, 1996, the unit commenced power reduction for recurring oil fluctuations and filter alarms on the "A" Main Feedwater Pumps. At 1128, August 20, 1996, power was stabilized at 55% for troubleshooting on power supply cards. Replacements were completed, and the unit commenced increasing power at 2200, August 20, 1996. The unit stabilized at 100% power, Mode 1, at 0220, August 21, 1996. The unit remained at 100% power, Mode 1, for the remainder of August, 1996.

September

The unit operated at or near 100% power, Mode 1, September 1, 1996, through September 30, 1996.

October

The unit operated at or near 100% power, Mode 1, October 1, 1996, through 1617 on October 25, 1996. The unit commenced power decrease to repair a damaged wire in the "A" Main Feedwater Pump speed control panel. At 1821, October 25, 1996, power was decreased to approximately 60%. At 2057, October 25, 1996, the unit stabilized at approximately 50% power; repairs were accomplished. At 1207, October 26, 1996, the unit commenced increasing power, and reached 96% at 1522, October 26, 1996. At 1653, October 26, 1996, the unit achieved 100% power, Mode 1, and continued operating at that level through the end of October, 1996.

November

The unit operated at or near 100% power, Mode 1, November 1, 1996, through November 30, 1996.

December

The unit operated at or near 100% power, Mode 1, December 1, 1996 through December 31, 1996.

2. SUMMARY OF OUTAGES AND FORCED POWER REDUCTIONS

Provided below is a summary of the 1996 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 30, 1996 Completion Date: February 3, 1996
   Type: Forced Duration: 88.5 hours
   Reason: Manual Reactor trip necessitated by an ice accumulation at the Circulating Water Intake Structure.

2. Start Date: February 3, 1996 Completion Date: April 7, 1996
   Type: Scheduled Duration: 1528.2 hours
   Reason: Refuel VIII Outage

3. Start Date: April 19, 1996 Completion Date: April 22, 1996
   Type: Scheduled Duration: 16.1 hours
   Reason: Power was reduced to 5%, Mode 2, for turbine balancing.

4. Start Date: June 6, 1996 Completion Date: June 8, 1996
   Type: Forced Duration: 49 hours
   Reason: Replacement of failed pins in Main Feedwater Regulating Valves

5. Start Date: August 19, 1996 Completion Date: August 19, 1996
   Type: Forced Duration: 13 hours
   Reason: Repair condenser connection #072 (weld) (Power reduction)

6. Start Date: August 20, 1996 Completion Date: August 20, 1996
   Type: Forced Duration: 10.5 hours
   Reason: Replacement of power supply cards (Power reduction)

7. Start Date: October 25, 1996 Completion Date: October 26, 1996
   Type: Forced Duration: 21 hours
   Reason: Repair a damaged wire on the :A: Main Feed Pump speed control panel (power reduction)

3. **EXPOSURE INFORMATION**

a. NUMBER OF PERSONNEL AND MAN-REM BY WORK AND JOB FUNCTION REPORT - 1996

WOLF CREEK NUCLEAR OPERATING CORPORATION - WCGS
PO BOX 411
BURLINGTON, KANSAS 66839

LICENSE: NPF-42

REGULATORY GUIDE 1.16 INFORMATION
INTERIM REPORT FOR: 960101 TO 961231

WORK AND JOB FUNCTION	PERSONNEL (> 100 mrem) STATION	UTILITY	CONTRACT	TOTAL MAN-REM STATION	UTILITY	CONTRACT
REACTOR OPERATIONS AND SURVEILLANCE						
MAINTENANCE AND CONSTRUCTION	0	0	0	0.446	0.000	0.555
OPERATIONS	11	1	0	5.446	0.535	0.007
HEALTH PHYSICS AND LAB	21	0	31	7.414	0.258	7.753
SUPERVISORY AND OFFICE STAFF	4	0	3	2.082	0.000	0.849
ENGINEERING STAFF	3	0	1	1.629	0.238	0.456
ROUTINE PLANT MAINTENANCE						
MAINTENANCE AND CONSTRUCTION	10	0	12	6.227	0.000	7.119
OPERATIONS	0	0	0	0.330	0.054	0.010
HEALTH PHYSICS AND LAB	0	0	0	0.870	0.105	0.024
SUPERVISORY AND OFFICE STAFF	5	0	0	2.369	0.004	0.758
ENGINEERING STAFF	0	0	0	0.855	0.174	0.599
INSERVICE INSPECTION						
MAINTENANCE AND CONSTRUCTION	9	0	13	2.288	0.000	5.143
OPERATIONS	0	0	0	0.015	0.000	0.004
HEALTH PHYSICS AND LAB	3	0	7	0.885	0.000	2.101
SUPERVISORY AND OFFICE STAFF	2	0	4	0.626	0.000	2.066
ENGINEERING STAFF	1	0	31	0.598	0.096	14.167
SPECIAL PLANT MAINTENANCE						
MAINTENANCE AND CONSTRUCTION	13	0	105	7.362	0.023	33.553
OPERATIONS	1	0	0	0.319	0.000	0.000
HEALTH PHYSICS AND LAB	2	0	1	1.039	0.020	0.678
SUPERVISORY AND OFFICE STAFF	6	0	3	2.870	0.000	1.508
ENGINEERING STAFF	1	1	70	0.838	0.144	18.522
WASTE PROCESSING						
MAINTENANCE AND CONSTRUCTION	0	0	0	0.562	0.000	0.387
OPERATIONS	1	0	1	0.562	0.022	0.328
HEALTH PHYSICS AND LAB	15	0	13	4.972	0.067	4.110
SUPERVISORY AND OFFICE STAFF	0	0	0	0.342	0.000	0.027
ENGINEERING STAFF	0	0	0	0.045	0.000	0.036
REFUELING						
MAINTENANCE AND CONSTRUCTION	1	0	9	1.211	0.000	3.933
OPERATIONS	1	0	0	0.256	0.007	0.000
HEALTH PHYSICS AND LAB	2	0	1	0.848	0.000	0.324
SUPERVISORY AND OFFICE STAFF	2	0	3	0.815	0.000	1.394
ENGINEERING STAFF	3	0	11	1.605	0.022	7.320
TOTALS						
MAINTENANCE AND CONSTRUCTION	33	0	139	18.095	0.023	50.689
OPERATIONS	14	1	1	6.928	0.618	0.349
HEALTH PHYSICS AND LAB	43	0	53	16.028	0.450	14.991
SUPERVISORY AND OFFICE STAFF	19	0	13	9.104	0.004	6.601
ENGINEERING STAFF	8	1	113	5.570	0.673	41.101
GRAND TOTALS	117	2	319	55.725	1.769	113.731

Number of personnel > 100 mrem based on PIC data
Total man-rem based on ratio of PIC data applied to TLD data
Actual total mRem = 171138 (numbers may vary due to rounding)

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

During 1996, no single release of radioactivity exceeded 10 percent of the allowable annual value.

5. **CHALLENGES TO THE PORVS AND SAFETY VALVES**

During 1996, there were no challenges to the Reactor Coolant System PORVs or the Reactor Coolant System Safety Valves.

6. **INDICATIONS OF FAILED FUEL**

The Westinghouse computer modeling program indicated the presence of six fuel defects prior to Refuel VIII. There were no indications of failed fuel after Refuel VIII.

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 of 100/E-bar during 1996.

However, Technical Specification 4.4.8 limitation of 1 microCurie per gram Dose Equivalent I-131 was exceeded when the reactor was tripped January 30, 1996. The peak value was 2.162 uCi/ml DEI at 0539 on January 30, 1996. Technical Specification 4.4.8 was exited at 1735 on January 30, 1996, when coolant activity returned to less than 1 uCi/ml DEI.