August 9, 1999

Mr. Otto L. Maynard
President and Chief Executive Officer
Wolf Creek Nuclear Operating Corporation
Post Office Box 411
Burlington, KA 66839

SUBJECT: WOLF CREEK GENERATING STATION - ISSUANCE OF AMENDMENT (TAC NO. MA5714)

Dear Mr. Maynard:

The Commission has issued the enclosed Amendment No. 126 to Facility Operating License No. NPF-42 for the Wolf Creek Generating Station. The amendment consists of changes to the Technical Specifications (TS) in response to your application dated June 10, 1999.

The amendment revises TS Table 3.3-4, Functional Unit 7.b., Automatic Switchover to Containment Sump (Refueling Water Storage Tank Level - Low-Low), to reflect the results of calculations that were performed for the associated instrumentation setpoints to consider the density variations due to temperature and boric acid concentrations.

A copy of our related Safety Evaluation is enclosed. The Notice of Issuance will be included in the Commission's next biweekly Federal Register notice.

Sincerely,
Original Signed By
Jack N. Donohew, Senior Project Manager, Section 2
Project Directorate IV & Decommissioning
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-482

Enclosures: 1. Amendment No. 126 to NPF-42
2. Safety Evaluation

cc w/encls: See next page

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

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Jack N. Donohew, Senior Project Manager, Section 2
Project Directorate IV & Decommissioning
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-482

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2. Safety Evaluation

cc w/encls: See next page

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

WOLF CREEK NUCLEAR OPERATING CORPORATION

WOLF CREEK GENERATING STATION

DOCKET NO. 50-482

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 126
License No. NPF-42

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment to the Wolf Creek Generating Station (the facility) Facility Operating License No. NPF-42 filed by the Wolf Creek Nuclear Operating Corporation (the Corporation), dated June 10, 1999, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, as amended, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this license amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

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2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and Paragraph 2.C.(2) of Facility Operating License No. NPF-42 is hereby amended to read as follows:

   2. Technical Specifications

      The Technical Specifications contained in Appendix A, as revised through Amendment No. 126, and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto, are hereby incorporated in the license. The Corporation shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. The license amendment is effective as of its date of issuance and shall be implemented within 60 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Stephen Dembek, Chief, Section 2
Project Directorate IV & Decommissioning
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: August 9, 1999

ATTACHMENT TO LICENSE AMENDMENT NO. 126

FACILITY OPERATING LICENSE NO. NPF-42

DOCKET NO. 50-482

Revise the current Appendix A Technical Specifications (CTS), including the issued but not yet implemented Improved Technical Specifications (ITS), by removing the pages identified below and inserting the enclosed pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change. The corresponding overleaf pages are also provided for the CTS and ITS to maintain document completeness.

REMOVE	INSERT
CTS 3/4 3-26	CTS 3/4 3-26
ITS 3.3-36	ITS 3.3-36

TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TOTAL ALLOWANCE (TA)	Z	SENSOR ERROR (S)	TRIP SETPOINT	ALLOWABLE VALUE
5. Turbine Trip and Feedwater Isolation					
a. Automatic Actuation Logic and Actuation Relays (SSPS)	N.A.	N.A	N.A.	N.A.	N.A.
b. Steam Generator Water Level-High-High	5.0	2.18	2.51	$\leq$ 78% of narrow range instrument span	$\leq$ 79.7% of narrow range instrument span
c. Safety Injection	See Item 1. above for all Safety Injection Trip Setpoints and Allowable Values.				
6. Auxiliary Feedwater					
a. Manual Initiation	N.A.	N.A.	N.A.	N.A.	N.A.
b. Automatic Actuation Logic and Actuation Relays (SSPS)	N.A.	N.A.	N.A.	N.A.	N.A.
c. Automatic Actuation Logic and Actuation Relays (BOP ESFAS)	N.A.	N.A.	N.A.	N.A.	N.A.
d. Steam Generator Water Level-Low-Low					
1) Start Motor-Driven Pumps	23.5	21.18	2.51	$\geq$ 23.5% of narrow range instrument span	$\geq$ 22.3% of narrow range instrument span

TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TOTAL ALLOWANCE (TA)	Z	SENSOR ERROR (S)	TRIP SETPOINT	ALLOWABLE VALUE
6. Auxiliary Feedwater (Continued)					
2) Start Turbine-Driven Pumps	23.5	21.18	2.51	≥ 23.5% of narrow range instrument span	≥ 22.3% of narrow range instrument span
e. Safety Injection - Start Motor-Driven Pumps	See Item 1. above for all Safety Injection Trip Setpoints and Allowable Values.				
f. Loss of Offsite Power-Start Turbine-Driven Pump					
1) 4 kV Bus Undervoltage - Loss of Voltage	See Item 8.a below for Trip Setpoints and Allowable Values.				
2) Automatic Actuation Logic and Actuation Relays (LSELS and BOP ESFAS)	N.A.	N.A.	N.A.	N.A.	N.A.
g. Trip of All Main Feedwater Pumps - Start Motor-Driven Pumps	N.A.	N.A.	N.A.	N.A.	N.A.
h. Auxiliary Feedwater Pump Suction Pressure-Low (Transfer to ESW)	N.A.	N.A.	N.A.	≥ 21.60 psia	≥ 20.53 psia
7. Automatic Switchover to Containment Sump					
a. Automatic Actuation Logic and Actuation Relays (SSPS)	N.A.	N.A.	N.A.	N.A.	N.A.
b. RWST Level-Low-Low	3.4	1.65	1.82	≥ 36% of instrument span	≥ 35.5% of instrument span
Coincident with Safety Injection	See Item 1. above for Safety Injection Trip Setpoints and Allowable Values.				

Table 3.3.2-1 (page 4 of 5)
Engineered Safety Feature Actuation System Instrumentation

	FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE (a)
6.	Auxiliary Feedwater					
a.	Manual Initiation	1,2,3	1 per pump	O	SR 3.3.2.8	NA
b.	Automatic Actuation Logic and Actuation Relays (Solid State Protection System)	1,2,3	2 trains	G	SR 3.3.2.2 SR 3.3.2.4 SR 3.3.2.6	NA
c.	Automatic Actuation Logic and Actuation Relays (Balance of Plant ESFAS)	1,2,3	2 trains	N	SR 3.3.2.3	NA
d.	SG Water Level Low - Low	1,2,3	4 per SG	D	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10	≥ 22.3% of Narrow Range Instrument Span
e.	Safety Injection	Refer to Function 1 (Safety Injection) for all initiation functions and requirements.				
f.	Loss of Offsite Power	1,2,3	2 trains	P	SR 3.3.2.7	NA
g.	Trip of all Main Feedwater Pumps	1	2 per pump	J	SR 3.3.2.8	NA
h.	Auxiliary Feedwater Pump Suction Transfer on Suction Pressure - Low	1,2,3	3	M	SR 3.3.2.1 SR 3.3.2.9 SR 3.3.2.12	≥ 20.53 psia

(continued)

(a) The Allowable Value defines the Limiting Safety System Setting. See the Bases for the Trip Setpoints.

Table 3.3.2-1 (page 5 of 5)
Engineered Safety Feature Actuation System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE[a]
7. Automatic Switchover to Containment Sump					
a. Automatic Actuation Logic and Actuation Relays	1,2,3,4	2 trains	C	SR 3.3.2.2 SR 3.3.2.4 SR 3.3.2.6 SR 3.3.2.13	NA
b. Refueling Water Storage Tank (RWST) Level - Low Low	1,2,3,4	4	K	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 SR 3.3.2.10	≥ 35.5% of instrument span
Coincident with Safety Injection	Refer to Function 1 (Safety Injection) for all initiation functions and requirements.				
8. ESFAS Interlocks					
a. Reactor Trip, P-4	1,2,3	2 per train, 2 trains	F	SR 3.3.2.11	NA
b. Pressurizer Pressure, P-11	1,2,3	3	L	SR 3.3.2.5 SR 3.3.2.9	≤ 1979 psig

(a) The Allowable Value defines the Limiting Safety System Settings. See the Bases for the Trip Setpoints.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 126 TO FACILITY OPERATING LICENSE NO. NPF-42

WOLF CREEK NUCLEAR OPERATING CORPORATION

WOLF CREEK GENERATING STATION

DOCKET NO. 50-482

1.0 INTRODUCTION

By application dated June 10, 1999, Wolf Creek Nuclear Operating Corporation (the licensee) requested changes to the Technical Specifications (TSs, Appendix A to Facility Operating License No. NPF-42) for the Wolf Creek Generating Station (WCGS). The proposed changes would revise Technical Specification Table 3.3-4, Functional Unit 7.b., Automatic Switchover to Containment Sump (Refueling Water Storage Tank Level - Low-Low) to reflect the results of calculations that were performed for the associated instrumentation setpoints to consider the density variations due to temperature and boric acid concentrations. The licensee did not submit any changes to the Bases of TSs.

The proposed changes are to both the current TSs and the improved TSs. The improved TSs were approved in Amendment No. 123, issued March 31, 1999, but have not yet been implemented. The improved TSs are to be implemented by December 31, 1999.

2.0 EVALUATION

The refueling water storage tank (RWST) supplies borated water to both trains of the emergency core cooling water system (ECCS) and the containment spray system through a common suction line to each system's supply header during the injection phase of a loss of coolant accident (LOCA). At the end of the injection phase of a LOCA, the source of water is automatically switched to the containment recirculation sumps. The recirculation mode is entered when the level in the RWST reaches the RWST Low-Low 1 automatic transfer signal coincident with a safety injection signal. Switchover from the RWST to the containment sumps must occur before the RWST empties to prevent damage to the ECCS pumps, and must not occur before there is sufficient water in the containment sumps to support ECCS pump operation.

To accomplish the automatic switchover, the RWST is equipped with four safety-related level transmitters, which feed five bistables that provide indication of a range of levels in the RWST (e.g., Hi, Low, Low-Low 1, Low-Low 2, and Empty). The RWST Low-Low 1 allowable value/trip setpoint is selected to ensure adequate water remains in the RWST to complete the switchover to the containment sumps.

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The current RWST Low-Low 1 setpoint is greater than or equal to 36 percent of instrument span with an allowable value of greater than or equal to 35.1 percent of instrument span. Both include consideration for instrument uncertainty. However, the RWST instrument loop uncertainty calculation associated with the current TS values did not consider the density variations due to temperature and boric acid concentration. Specifically, the four RWST level transmitters are calibrated with water at a reference temperature of 68°F. With this calibration methodology, two components of error are introduced: (1) water density due to a change in temperature, and (2) bias error in the transmitter span for the differences between the density of the boric acid concentration in the RWST and the density of the water used for calibration at the same temperature.

A revised calculation of the RWST level instrument uncertainty and TS values was performed in accordance with Topical Report 89-001, "WCNOC Nuclear Safety Analysis Setpoint Methodology for the Reactor Protection System." As a result of the new calculation, it was determined that the RWST level instrumentation allowable value should be increased from 35.1 percent of instrument span to 35.5 percent of instrument span. The allowable value increase is more restrictive than the current value, which results in the allowable value being the same as the calibration tolerance band. However, this is acceptable since the measurement error (e.g., instrument drift) has been insignificant during the surveillance interval and the quarterly analog channel operational tests have demonstrated that the instrumentation has remained well within the calibration tolerance band.

In addition to a change in the allowable value, the revised calculation resulted in changes to terms used to ensure the total allowance value (e.g., the difference between the safety analysis limit and the nominal trip setpoint) is not exceeded. Specifically, the "Z" term (e.g., the square root of the sum of the squares of those terms for which there is no periodic surveillance) changed from 1.21 to 1.65, and the "S" term (e.g., the sensor error in TS Table 3.3-4) changed from 1.86 to 1.82.

The changes to the "Z" and "S" terms and the allowable value do not impact the ECCS injection volume. Further, the safety analysis limit and nominal trip setpoints are not affected when accounting for the density variations due to temperature and boric acid concentrations. Therefore, adequate water remains in the RWST following receipt of the RWST Level Low-Low 1 signal to complete switchover of the ECCS pumps for recirculation. Additionally, the changes to the "Z" and "S" terms and the allowable value have no impact on containment spray system operation. Other RWST level setpoints exist to ensure a timely switchover of the containment spray pumps to the containment sumps as a suction source.

The proposed changes impose a more restrictive allowable value for the RWST Low-Low 1 switchover setpoint than currently exists in the WCGS TS and are consistent with the revised uncertainty calculation. Based on the above, the proposed changes are acceptable.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Kansas State Official was notified of the proposed issuance of the amendment. The State official had no comments.

4.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding (64 FR 35215). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

5.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: K. Thomas

Date: August 9, 1999