

April 3, 1989

Docket No. 50-482

Mr. Bart D. Withers
President and Chief Executive Officer
Wolf Creek Nuclear Operating Corporation
Post Office Box 411
Burlington, Kansas 66839

Dear Mr. Withers:

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SUBJECT: WOLF CREEK GENERATING STATION - AMENDMENT NO. 29 TO FACILITY
OPERATING LICENSE NO. NPF-42 (TAC NO. 68670)

The Commission has issued the enclosed Amendment No. 29 to Facility Operating License No. NPF-42 for the Wolf Creek Generating Station. The amendment consists of changes to the Technical Specifications in response to your application dated July 6, 1988.

The amendment revises Technical Specification Tables 3.3-3 and 4.3-2 which address Engineered Safety Features Actuation System Instrumentation. This amendment request removes the Mode 2 applicability requirements from TABLE 3.3-3 Functional Unit 6.g and TABLE 4.3-2 Functional Unit 6.g, "Trip of All Main Feedwater Pumps - Start Motor Driven Pumps".

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,

/s/

Douglas V. Pickett, Project Manager
Project Directorate - IV
Division of Reactor Projects - III,
IV, V and Special Projects
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 29 to License No. NPF-42
2. Safety Evaluation

cc w/enclosures:
See next page

DOCUMENT NAME: WC AMENDMENT TAC 68670

PD4/LA *[initials]*
PNoonan
03/19/89

PD4/PM *[initials]*
DPickett:sr
03/20/89

SRXB *[initials]*
WHodges
03/20/89

OGC-Rockville
[Signature]
03/22/89

PD4/D
JCalvo
03/23/89

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JC
3/31

No legal objection noted with corrections noted to SE to reflect staff's full evaluation. 2/27/89

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

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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,

A handwritten signature in dark ink that reads "Douglas V. Pickett".

Douglas V. Pickett, Project Manager
Project Directorate - IV
Division of Reactor Projects - III,
IV, V and Special Projects
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 29 to
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2. Safety Evaluation

cc w/enclosures:
See next page

Mr. Bart D. Withers
Wolf Creek Nuclear Operating Corporation

Wolf Creek Generating Station
Unit No. 1

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

WOLF CREEK NUCLEAR OPERATING CORPORATION

WOLF CREEK GENERATING STATION

DOCKET NO. 50-482

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 29
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 July 6, 1988, 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.

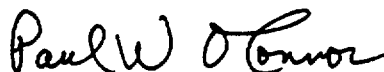
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and Paragraph 2.C.(2) of Facility Operating License No. NPF-42 is hereby amended to read as follows:

2. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 29, 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.

FOR THE NUCLEAR REGULATORY COMMISSION



for Jose A. Calvo, Director
Project Directorate - IV
Division of Reactor Projects - III,
IV, V and Special Projects
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: April 3, 1989

ATTACHMENT TO LICENSE AMENDMENT NO. 29

FACILITY OPERATING LICENSE NO. NPF-42

DOCKET NO. 50-482

Revise Appendix A Technical Specifications 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 area of change. The corresponding overleaf pages are also provided to maintain document completeness.

REMOVE PAGES

3/4 3-18
3/4 3-37

INSERT PAGES

3/4 3-18
3/4 3-37

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION

<u>FUNCTIONAL UNIT</u>	<u>TOTAL NO. OF CHANNELS</u>	<u>CHANNELS TO TRIP</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABLE MODES</u>	<u>ACTION</u>
6. Auxiliary Feedwater					
a. Manual Initiation	3(1/pump)	1/pump	1/pump	1, 2, 3	24
b. Automatic Actuation Logic and Actuation Relays (SSPS)	2	1	2	1, 2, 3	21
c. Automatic Actuation Logic and Actuation Relays (BOP ESFAS)	2	1	2	1, 2, 3	21
d. Stm. Gen. Water Level-Low-Low					
1) Start Motor-Driven Pumps	4/stm. gen.	2/stm. gen. in any opera- ting stm. gen.	3/stm. gen. in each operating stm. gen.	1, 2, 3	19*
2) Start Turbine-Driven Pump	4/stm. gen.	2/stm. gen. in any 2 operating stm. gen.	3/stm. gen. in each operating stm. gen.	1, 2, 3	19*
e. Safety Injection - Start Motor-Driven Pumps	See Item 1. above for all Safety Injection initiating functions and requirements.				
f. Loss-of-Offsite Power - Start Turbine-Driven Pump	2	1	2	1,2,3	22

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION

<u>FUNCTIONAL UNIT</u>	<u>TOTAL NO. OF CHANNELS</u>	<u>CHANNELS TO TRIP</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABLE MODES</u>	<u>ACTION</u>
6. Auxiliary Feedwater (Continued)					
g. Trip of All Main Feedwater Pumps - Start Motor-Driven Pumps	4-(2/pump)**	2-(1/pump in same separation)	3	1	19
h. Auxiliary Feedwater Pump Suction Pressure-Low (Transfer to ESW)	3	2	2	1, 2, 3	15*
7. Automatic Switchover to Containment Sump					
a. Automatic Actuation Logic and Actuation Relays (SSPS)	2	1	2	1, 2, 3, 4	14
b. RWST Level - Low-Low Coincident With Safety Injection	4	2	3	1, 2, 3, 4	16
	See Item 1. above for Safety Injection initiating functions and requirements.				
8. Loss of Power					
a. 4 kV Bus Undervoltage -Loss of Voltage	4/Bus	2/Bus	3/Bus	1, 2, 3, 4	19*
b. 4 kV Bus Undervoltage -Grid Degraded Voltage	4/Bus	2/Bus	3/Bus	1, 2, 3, 4	19*

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION
SURVEILLANCE REQUIREMENTS

<u>FUNCTIONAL UNIT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>ANALOG CHANNEL OPERATIONAL TEST</u>	<u>TRIP ACTUATING DEVICE OPERATIONAL TEST</u>	<u>ACTUATION LOGIC TEST</u>	<u>MASTER RELAY TEST</u>	<u>SLAVE RELAY TEST</u>	<u>MODES FOR WHICH SURVEILLANCE IS REQUIRED</u>
6. Auxiliary Feedwater (Continued)								
c. Automatic Actuation Logic and Actuation Relays (BOP ESFAS)	N.A.	N.A.	N.A.	N.A.	M(1)(2)	N.A.	N.A.	1, 2, 3
d. Steam Generator Water Level-Low-Low	S	R	M	N.A.	N.A.	N.A.	N.A.	1, 2, 3
e. Safety Injection	See Item 1 above for all Safety Injection Surveillance Requirements							
f. Loss-Offsite Power	N.A.	R	N.A.	M	N.A.	N.A.	N.A.	1, 2, 3
g. Trip of All Main Feedwater Pumps	N.A.	N.A.	N.A.	R	N.A.	N.A.	N.A.	1
h. Auxiliary Feedwater Pump Suction Pressure-Low	S	R	M	N.A.	N.A.	N.A.	N.A.	1, 2, 3
7. Automatic Switchover to Containment Sump								
a. Automatic Actuation Logic and Actuation Relays (SSPS)	N.A.	N.A.	N.A.	N.A.	M(1)	M(1)	Q(3)	1, 2, 3, 4
b. RWST Level - Low-Low Coincident With Safety Injection	S	R	M	N.A.	N.A.	N.A.	N.A.	1, 2, 3, 4
	See Item 1. above for all Safety Injection Surveillance Requirements.							
8. Loss of Power								
a. 4 kV Undervoltage - Loss of Voltage	N.A.	R	N.A.	M	N.A.	N.A.	N.A.	1, 2, 3, 4
b. 4 kV Undervoltage - Grid Degraded Voltage	N.A.	R	N.A.	M	N.A.	N.A.	N.A.	1, 2, 3, 4

WOLF CREEK - UNIT 1

3/4 3-37

Amendment No. 29

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION
SURVEILLANCE REQUIREMENTS

<u>FUNCTIONAL UNIT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>ANALOG CHANNEL OPERATIONAL TEST</u>	<u>TRIP ACTUATING DEVICE OPERATIONAL TEST</u>	<u>ACTUATION LOGIC TEST</u>	<u>MASTER RELAY TEST</u>	<u>SLAVE RELAY TEST</u>	<u>MODES FOR WHICH SURVEILLANCE IS REQUIRED</u>
9. Control Room Isolation								
a. Manual Initiation	N.A.	N.A.	N.A.	R	N.A.	N.A.	N.A.	A11
b. Automatic Actuation Logic and Actuation Relays (SSPS)	N.A.	N.A.	N.A.	N.A.	M(1)	M(1)	Q(3)	1, 2, 3, 4
c. Automatic Actuation Logic and Actuation Relays (BOP ESFAS)	N.A.	N.A.	N.A.	N.A.	M(1)(2)	N.A.	N.A.	A11
d. Phase "A" Isolation	See Item 3.a. above for all Phase "A" Isolation Surveillance Requirements.							
10. Solid-State Load Sequencer	N.A.	N.A.	N.A.	N.A.	M(1)(2)	N.A.	N.A.	1, 2, 3, 4
11. Engineered Safety Features Actuation System Interlocks								
a. Pressurizer Pressure, P-11	N.A.	R	M	N.A.	N.A.	N.A.	N.A.	1, 2, 3
b. Reactor Trip, P-4	N.A.	N.A.	N.A.	R	N.A.	N.A.	N.A.	1, 2, 3

TABLE NOTATIONS

- (1) Each train shall be tested at least every 62 days on a STAGGERED TEST BASIS.
- (2) Continuity check may be excluded from the ACTUATION LOGIC TEST.
- (3) Except Relays K602, K620, K622, K624, K630, K740, and K741, which shall be tested at least once per 18 months during refueling and during each COLD SHUTDOWN exceeding 24 hours unless they have been tested within the previous 90 days.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 29 TO FACILITY OPERATING LICENSE NO. NPF-42
WOLF CREEK NUCLEAR OPERATING CORPORATION
WOLF CREEK GENERATING STATION
DOCKET NO. 50-482

INTRODUCTION

The Wolf Creek Generating Station Technical Specification Table 3.3-3, "Engineered Safety Features Actuation System Instrumentation", states that while in Modes 1 or 2, a trip of all main feedwater pumps will result in the automatic actuation of the motor driven auxiliary feedwater pumps. This feature could be undesirable during certain portions of plant startup or shutdown operations while in MODE 2.

During normal startup operation in MODE 2, the steam generators are normally being fed by either the startup motor driven feedwater pump or the auxiliary feedwater pumps. A turbine driven main feedwater pump (TDMFP) is not started until the reactor is at approximately 2% power and preparations are being made to start the main turbine generator. Once a TDMFP is placed in service, reactor power is then increased above 5% into MODE 1, and the main turbine is rolled up to speed.

When the plant is being shutdown, the main turbine generator is taken off line, reactor power is dropped below 5% (entering MODE 2) to approximately 2%, the startup motor driven feedwater pump is placed in service, the last TDMFP is taken out of service and then the Reactor Operator inserts the control rods and lowers the plant into MODE 3.

The problem that can develop is that during plant shutdown, at least one TDMFP must be reset (i.e., no trip signals) prior to entering MODE 2. Similarly, during plant startup while in MODE 2, at least one TDMFP must be reset prior to startup of the first TDMFP. The TDMFPs exhaust their steam into the Main Condensers. Therefore if there is no vacuum in the Main Condensers, the TDMFP cannot be reset, or if while in MODE 2, condenser vacuum must be taken out, an Auxiliary Feedwater Actuation will occur. An auxiliary feedwater actuation under such conditions is undesirable because 1) it is unnecessary from an operations viewpoint and 2) it causes thermal cycling by injecting cold water from the condensate storage tank to the hot steam generators.

By letter dated July 6, 1988, the licensee submitted a proposed amendment that revises Wolf Creek Generating Station (WCGS), Unit No. 1, Technical Specification Tables 3.3-3 and 4.3-2, which address the Engineered Safety Features Actuation System Instrumentation. This amendment request removes the MODE 2 applicability requirements from TABLE 3.3-3 Functional Unit 6.g and TABLE 4.3-2 Functional Unit 6.g, "Trip of all Main Feedwater Pumps - Start Motor Driven Pumps".

EVALUATION

This proposed amendment allows the actuation signal to remain blocked until a TDMFP is placed in service, and when shutting down to allow blocking the signal before securing the last TDMFP. This action is consistent with the following statements in the NRC Safety Evaluation Report for Wolf Creek, Section 7.3.2.7:

"The signal which initiates auxiliary feedwater when the main feedwater pumps are tripped is manually blocked on normal shutdown of the main feedwater pumps. The design is such that the block is not automatically removed when the plant is returned to an operating mode where auxiliary feedwater initiation on loss of main feedwater is needed. Even though the signal to initiate auxiliary feedwater when the main feedwater pumps are tripped is considered to be an "anticipatory signal," for which no credit is taken in the analyses in SNUPPS FSAR Chapter 15, the staff position was that the design should include appropriate features to ensure that the block is removed when the plant is returned to an operating mode where auxiliary feedwater initiation on loss of main feedwater is needed. The applicant has committed to provide automatic indication of the block of the signals which initiate auxiliary feedwater on loss of both main feedwater pumps on the bypassed and inoperable status panel. Operating procedures will limit the operating modes during which the block can be in effect. Blocking will be permitted just before shutdown of the last operating main feedwater pump and removed just after the first main feedwater pump is put into service. The staff concludes that the applicant's design and operating procedures will provide adequate assurance that the auxiliary feedwater start signal on loss of both main feedwater pumps will not be blocked during operating modes when the diversity of this signal is desirable. The applicant's design is, therefore, acceptable. The license will be conditioned to require the bypassed and inoperable status panel indication described above."

In accordance with the above, the blocking of the TDMFP and associated indication is described in USAR Section 7.3.6.1.1. There is no need for the Auxiliary Feedwater Actuation function below 5% power, since there is sufficient time for operator actions to occur prior to steam generator levels decreasing to the low-low level reactor trip setpoint.

Should no operator actions occur, the reactor will trip and both motor driven auxiliary feedwater pumps will start when the first steam generator level drops to the low-low level setpoint. Should a second steam generator level reach its low-low level setpoint, the turbine driven auxiliary feedwater pump starts. With all 3 auxiliary feedwater pumps, the steam generator levels are rapidly recovered. Procedurally, the signal will be unblocked just after the first TDMFP is placed in service during startups, and will be blocked just prior to securing the last TDMFP during shutdowns.

During a normal shutdown of the main feedwater pumps, and also during the startup of the main feedwater pumps, the automatic initiation signal for the auxiliary feedwater system should be blocked. This will allow for greater operational flexibility during normal shutdowns and startup of the plant when automatic initiation of auxiliary feedwater flow, upon the trip of both main feedwater pumps, is not needed.

The proposed revision to the TS clarifies the conditions upon which the automatic initiation signal for auxiliary feedwater flow upon a loss of main feedwater flow can be blocked. The proposed wording is consistent with the staff's SER on the Wolf Creek Plant. In addition, the accident analysis in Chapter 15 of the FSAR states that no credit is taken for the signal to initiate auxiliary feedwater when the main feedwater pumps are tripped. Thus, the staff finds the proposed change acceptable.

ENVIRONMENTAL CONSIDERATION

The amendment involves a change in the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The 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 exposures. 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. Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR Section 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.

CONCLUSION

The staff 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, and (2) such activities will be conducted in compliance with the Commission's regulations, and the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Date: April 3, 1989

Principal Contributor: Douglas V. Pickett