

January 9, 1995

Mr. Neil S. Carns
President and Chief Executive Officer
Wolf Creek Nuclear Operating Corporation
Post Office Box 411
Burlington, Kansas 66839

SUBJECT: WOLF CREEK GENERATING STATION - AMENDMENT NO. 83 TO FACILITY
OPERATING LICENSE NO. NPF-42 (TAC NO. M88128)

Dear Mr. Carns:

The Commission has issued the enclosed Amendment No. 83 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 October 27, 1993.

The amendment changes Note 5 of TS Table 4.3-1 to reflect the use of integral bias curves, rather than detector plateau curves, to calibrate the source range instrumentation. Detector plateau curves will continue to be used to calibrate intermediate range and power range channels.

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:

James C. Stone, Senior Project Manager
Project Directorate IV-2
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

Docket No. 50-482

Enclosures: 1. Amendment No. 83 to NPF-42
2. Safety Evaluation

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

January 9, 1995

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Sincerely,

A handwritten signature in cursive script that reads "James C. Stone".

James C. Stone, Senior Project Manager
Project Directorate IV-2
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

Docket No. 50-482

Enclosures: 1. Amendment No. 83 to NPF-42
2. Safety Evaluation

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Mr. Neil S. Carns

- 2 -

cc w/enclosures:

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Office of the Governor
State of Kansas
Topeka, Kansas 66612

Attorney General
Judicial Center
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Topeka, Kansas 66612

County Clerk
Coffey County Courthouse
Burlington, Kansas 66839

Public Health Physicist
Bureau of Air & Radiation
Division of Environment
Kansas Department of Health
and Environment
Forbes Field Building 283
Topeka, Kansas 66620



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. 83
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 October 27, 1993, 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. 83, 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 30 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



James C. Stone, Senior Project Manager
Project Directorate IV-2
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: January 9, 1995

ATTACHMENT TO LICENSE AMENDMENT NO. 83

FACILITY OPERATING LICENSE NO. NPF-42

DOCKET NO. 50-482

Replace the following page of the Appendix A Technical Specifications with the attached page. The revised page is identified by Amendment number and contains marginal lines indicating the areas of change. The corresponding overleaf page is also provided to maintain document completeness.

REMOVE

3/4 3-12

INSERT

3/4 3-12

TABLE 4.3-1

REACTOR TRIP 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>MODES FOR WHICH SURVEILLANCE IS REQUIRED</u>
18. Reactor Trip System Interlocks (Continued)						
d. Power Range Neutron Flux, P-10	N.A.	R(4)	R	N.A.	N.A.	1, 2
e. Turbine Impulse Chamber Pressure, P-13	N.A.	R	R	N.A.	N.A.	1
19. Reactor Trip Breaker	N.A.	N.A.	N.A.	M(7, 16)	N.A.	1, 2, 3*, 4*, 5*
20. Automatic Trip and Interlock Logic	N.A.	N.A.	N.A.	N.A.	M (7)	1, 2, 3*, 4*, 5*
21. Reactor Trip Bypass Breaker	N.A.	N.A.	N.A.	M(17),R(18)	N.A.	1, 2, 3*, 4*, 5*

WOLF CREEK - UNIT 1

3/4 3-11

Amendment No. 12, 26

TABLE 4.3-1 (Continued)

TABLE NOTATIONS

*Only if the Reactor Trip System breakers happen to be closed and the control rod drive system is capable of rod withdrawal.

##Below P-6 (Intermediate Range Neutron Flux Interlock) Setpoint.

###Below P-10 (Low Setpoint Power Range Neutron Flux Interlock) Setpoint.

- (1) If not performed in previous 31 days.
- (2) Comparison of calorimetric to excore power indication above 15% of RATED THERMAL POWER. Adjust excore channel gains consistent with calorimetric power if absolute difference is greater than 2%. The provisions of Specification 4.0.4 are not applicable for entry into MODE 2 or 1.
- (3) Single point comparison of incore to excore AXIAL FLUX DIFFERENCE above 15% of RATED THERMAL POWER. Recalibrate if the absolute difference is greater than or equal to 3%. The provisions of Specification 4.0.4 are not applicable for entry into MODE 2 or 1.
- (4) Neutron detectors may be excluded from CHANNEL CALIBRATION.
- (5) For Source Range detectors, integral bias curves are obtained, evaluated, and compared to manufacturer's data. For Intermediate Range and Power Range channels, detector plateau curves shall be obtained, evaluated, and compared to manufacturer's data. For the Intermediate Range and Power Range Neutron Flux channels the provisions of Specification 4.0.4 are not applicable for entry into MODE 2 or 1.
- (6) Incore - Excore Calibration, above 75% of RATED THERMAL POWER. The provisions of Specification 4.0.4 are not applicable for entry into MODE 2 or 1.
- (7) Each train shall be tested at least every 62 days on a STAGGERED TEST BASIS.
- (9) Quarterly surveillance in MODES 3*, 4* and 5* shall also include verification that permissives P-6 and P-10 are in their required state for existing plant conditions by observation of the permissive annunciator window. Quarterly surveillance shall include verification of the Boron Dilution Alarm Setpoint of less than or equal to an increase of twice the count rate within a 10-minute period.
- (10) Setpoint verification is not required.
- ** (11) The TRIP ACTUATING DEVICE OPERATIONAL TEST shall independently verify the OPERABILITY of the undervoltage and shunt trip circuits for the Manual Reactor Trip Function. The test shall also verify the OPERABILITY of the Bypass Breaker trip circuit(s).
- (12) At least once per 18 months during shutdown, verify that on a simulated Boron Dilution-Doubling test signal the normal CVCS discharge valves will close and the centrifugal charging pumps suction valves from the RWST will open within 30 seconds.

**Complete verification of OPERABILITY of the manual reactor trip switch circuitry shall be performed prior to startup from the first shutdown to Mode 3 occurring after August 14, 1992.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 83 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 October 27, 1993, Wolf Creek Nuclear Operating Corporation (the licensee) requested a change to the Technical Specifications (Appendix A to Facility Operating License No. NPF-42) (TS) for the Wolf Creek Generating Station. The proposed change would revise Note 5 of TS Table 4.3-1, "Reactor Trip Instrumentation Surveillance Requirements." The change reflects the use of integral bias curves, rather than detector plateau curves, to calibrate the source range instrumentation. Both calibration methods measure the boron trifluoride (BF_3) gas multiplication in the nuclear instrument detectors.

2.0 EVALUATION

The implementation of the boron mitigation system at Wolf Creek added a low-noise preamplifier to the source range detector channel of the nuclear instrumentation system (NIS) as originally designed. The Westinghouse NIS manual recommends the integral bias curve as the required calibration method for source range instrumentation calibration in NISs that have low-noise preamplifiers. The integral bias curve is considered to be a more inclusive calibration providing the same information as the detector plateau curve (i.e., high-voltage setpoint).

According to Westinghouse, the source range high-voltage setting cannot be obtained by using the detector high-voltage plateau curves in systems that have low-noise preamplifiers installed in the source range NIS channels. The detector plateau curves have a charge-sensitive design that integrates the pulses in the area under the curve and could result in erroneous settings if gamma pulses and noise are present. Since the low-noise preamplifier is a voltage-sensitive design, the high-voltage plateau curve will not retain the typical "knee" of the curve and the characteristic few-100-volt plateau length.

The integral bias curves set up the high voltage as well as the gains and the discriminator bias. The alignment and calibration procedure for the integral bias curve uses a pulse height method to determine the detector high-voltage setpoint. This procedure counts the statistically expected minimum pulse height that exceeds the discriminator setting and also counts the

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statistically expected maximum pulse height that will not saturate the source range pulse amplifier electronics.

The gas multiplication efficiency for the source range detector is determined from the performance of the integral bias curve and a subsequent comparison of the present high-voltage operating point with the high-voltage operating point obtained from previous integral bias curves. The gas multiplication efficiency of the source range detector provides information regarding the life expectancy of the detector. As the detector ages, the pulse amplitude decreases because the gas multiplication is less efficient. The decrease in the pulse amplitude for a given high voltage setting can be adjusted by increasing the detector high voltage to compensate for the lower gas multiplication efficiency.

The NRC staff has verified that the new Revised Standard Technical Specifications reflect the applicability of the integral bias curves as a method for source range instrumentation calibration. The staff has reviewed the proposed change to the Wolf Creek TS and finds it consistent with the staff's position. Therefore, the staff has concluded that the proposed change is acceptable. The detector plateau curves will continue to be used to calibrate intermediate range and power range channels.

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 surveillance requirements. 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 (58 FR 62159). 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: J. Stone

Date: January 9, 1995