August 25, 1994

Docket No. 50-482

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WReckley	OPA

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

Dear Mr. Carns:

SUBJECT: WOLF CREEK GENERATING STATION - AMENDMENT NO. 79 TO FACILITY OPERATING LICENSE NO. NPF-42 (TAC NO. M89654)

The Commission has issued the enclosed Amendment No. 79 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 7, 1994.

The amendment revises TS Table 2.2-1, "Reactor Trip System Instrumentation Setpoints," to change the over-temperature-delta-temperature (OTDT) axial flux difference (AFD) limits to reflect the results of the Cycle 8 core maneuvering analysis.

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:

William D. Reckley, Project Manager
Project Directorate IV-2
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

Enclosures:
1. Amendment No. 79 to NPF-42
2. Safety Evaluation

cc w/enclosures:
See next page

OFFICE	PDIV-2/LA	PDIV-2/PM	SRXB/BC	OGC	PDIV-2/D
NAME	EPeyton	WReckley:PK	RC Jones	MYoung	TQuay
DATE	8/5/94	8/9/94	8/9/94	8/22/94	8/25/94

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cc w/enclosures:
See next page

OFFICE	PDIV-2/LA	PDIV-2/PM	SRXB /BC	OGC w/comments incorporated	PDIV-2/D
NAME	EPeyton	WReckley:PK WDR	RC Jones	MYoung	TQuay
DATE	8/15/94	8/19/94	8/19/94	8/22/94	8/25/94

OFFICIAL RECORD COPY/ FILENAME: WC89654.AMD

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

August 25, 1994

Docket No. 50-482

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

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Sincerely,

William D Reckley

William D. Reckley, Project Manager
Project Directorate IV-2
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

Enclosures:
1. Amendment No. 79 to NPF-42
2. Safety Evaluation

cc w/enclosures:
See next page

cc w/enclosures:
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Shaw, Pittman, Potts & Trowbridge
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Chief Engineer
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Office of the Governor
State of Kansas
Topeka, Kansas 66612

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1st Floor - The Statehouse
Topeka, Kansas 66612

County Clerk
Coffey County Courthouse
Burlington, Kansas 66839

Mr. Gerald Allen
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U.S. Nuclear Regulatory Commission
Resident Inspectors Office
8201 NRC Road
Steedman, Missouri 65077-1302

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. 79
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 7, 1994, 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. 79, 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 prior to restart from the seventh refueling outage.

FOR THE NUCLEAR REGULATORY COMMISSION

Theodore R. Quay, Director
Project Directorate IV-2
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: August 25, 1994

ATTACHMENT TO LICENSE AMENDMENT NO. 79

FACILITY OPERATING LICENSE NO. NPF-42

DOCKET NO. 50-482

Replace the following pages of the Appendix A Technical Specifications with the attached 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 to maintain document completeness.

REMOVE	INSERT
2-4	2-4
2-8	2-8

TABLE 2.2.-1

REACTOR TRIP SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TOTAL ALLOWANCE (TA)	Z	SENSOR ERROR (S)	TRIP SETPOINT	ALLOWABLE VALUE
1. Manual Reactor Trip	N.A.	N.A.	N.A.	N.A.	N.A.
2. Power Range, Neutron Flux a. High Setpoint	7.5	4.56	0	≤109% of RTP*	≤112.3% of RTP*
b. Low Setpoint	8.3	4.56	0	≤25% of RTP*	≤28.3% of RTP*
3. Power Range, Neutron Flux, High Positive Rate	2.4	0.5	0	≤4% of RTP* with a time constant ≥2 seconds	≤6.3% of RTP* with a time constant ≥2 seconds
4. Power Range, Neutron Flux, High Negative Rate	2.4	0.5	0	≤4% of RTP* with a time constant ≥2 seconds	≤6.3% of RTP* with a time constant ≥2 seconds
5. Intermediate Range, Neutron Flux	17.0	8.41	0	≤25% of RTP*	≤35.3% of RTP*
6. Source Range, Neutron Flux	17.0	10.01	0	$\leq 10^5$ cps	$\leq 1.6 \times 10^5$ cps
7. Overtemperature ΔT	7.0	5.39	1.67	See Note 1	See Note 2
8. Overpower ΔT	4.6	2.02	0.14	See Note 3	See Note 4
9. Pressurizer Pressure-Low	3.7	0.71	2.49	≥1915 psig	≥1906 psig
10. Pressurizer Pressure-High	7.5	0.71	2.49	≤2385 psig	≤2400 psig
11. Pressurizer Water Level-High	8.0	2.18	1.96	≤92% of instrument span	≤93.9% of instrument span

* RTP = RATED THERMAL POWER
**Loop design flow = 93,600 gpm

Amendment No. 7,23,54,52,61,69,72,79

TABLE 2.2-1 (Continued)

TABLE NOTATIONS

NOTE 1: OVERTEMPERATURE ΔT

$$\Delta T \left(\frac{1 + \tau_1 S}{1 + \tau_2 S}\right)\left(\frac{1}{1 + \tau_3 S}\right) \leq \Delta T_0 \left\{K_1 - K_2 \frac{(1 + \tau_4 S)}{(1 + \tau_5 S)}\left[T\left(\frac{1}{1 + \tau_6 S}\right) - T'\right] + K_3(P - P') - f_1(\Delta I)\right\}$$

Where:

ΔT = Measured ΔT;

$\frac{1 + \tau_1 S}{1 + \tau_2 S}$ = Lead-lag compensator on measured ΔT;

τ_1, τ_2 = Time constants utilized in lead-lag compensator for ΔT, $\tau_1 = 5$ s, $\tau_2 = 3$ s;

$\frac{1}{1 + \tau_3 S}$ = Lag compensator on measured ΔT;

τ_3 = Time constant utilized in the lag compensator for ΔT, $\tau_3 = 2$ s;

ΔT_0 = Indicated ΔT at RATED THERMAL POWER;

K_1 = 1.10;

K_2 = 0.0137/°F;

$\frac{1 + \tau_4 S}{1 + \tau_5 S}$ = The function generated by the lead-lag compensator for T_{avg} dynamic compensation;

τ_4, τ_5 = Time constants utilized in the lead-lag compensator for T_{avg}, $\tau_4 = 16$ s, $\tau_5 = 4$ s;

T = Average temperature, °F;

$\frac{1}{1 + \tau_6 S}$ = Lag compensator on measured T_{avg};

τ_6 = Time constant utilized in the measured T_{avg} lag compensator, $\tau_6 = 0$ s;

TABLE NOTATIONS (Continued)

NOTE 1: (Continued)

T' $\leq$ 586.5°F (Nominal T_{avg} AT RATED THERMAL POWER);

K_3 = 0.000671;

P = Pressurizer pressure, psig;

P' = 2235 psig (Nominal RCS operating pressure);

S = Laplace transform operator, s^{-1};

and $f_1(\Delta I)$ is a function of the indicated difference between top and bottom detectors of the power-range neutron ion chambers; with gains to be selected based on measured instrument response during plant STARTUP tests such that:

(i) for $q_t - q_b$ between -23% and + 5%, $f_1(\Delta I) = 0$, where q_t and q_b are percent RATED THERMAL POWER in the top and bottom halves of the core respectively, and $q_t + q_b$ is total THERMAL POWER in percent of RATED THERMAL POWER;

(ii) for each percent that the magnitude of $q_t - q_b$ exceeds -23%, the ΔT Trip Setpoint shall be automatically reduced by 2.27% of its value at RATED THERMAL POWER; and

(iii) for each percent that the magnitude of $q_t - q_b$ exceeds +5%, the ΔT Trip Setpoint shall be automatically reduced by 1.84% of its value at RATED THERMAL POWER.

NOTE 2: The channel's maximum Trip Setpoint shall not exceed its computed Trip Setpoint by more than 1.3% of ΔT span.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 79 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 7, 1994, Wolf Creek Nuclear Operating Corporation (the licensee) requested changes to the Technical Specifications (TS) (Appendix A to Facility Operating License No. NPF-42) for the Wolf Creek Generating Station. The proposed changes would revise TS Table 2.2-1, "Reactor Trip System Instrumentation Setpoints," to change the over-temperature-delta-temperature (OTDT) axial flux difference (AFD) limits to reflect results of the Cycle 8 core maneuvering analysis.

2.0 EVALUATION

Core reload analyses are performed to ensure that key safety parameters remain bounded by the assumptions of the design basis transient analyses. For limits related to core power distributions, the analyses model variations in power, xenon distributions, control rod positions, and other variables associated with the planned reload cycle. The simulated power distributions for a specific cycle are compared to established core peaking limits. Failure to satisfy the peaking criteria can result in either justification of revised peaking criteria or determination of revised limits for parameters such as allowable control rod positions or AFD. Additional information about the licensee's determination of limits and about comparisons performed for specific reload cycles can be found in the NRC-approved topical reports listed in TS 6.9.1.9, "Core Operating Limits Report (COLR)."

The licensee's core reload analyses supporting plant operation during the eighth operating cycle confirmed that key safety parameters remained bounded by the design basis, provided that the OTDT AFD limits were made slightly more restrictive. The OTDT and over-power-delta-temperature (OPDT) reactor trip limits are established to prevent exceeding reactor protection system departure from nucleate boiling (DNB) or centerline fuel melting criteria. The changes proposed by the licensee include the slopes and negative breakpoint of the OTDT AFD envelope based on the Cycle 8 maneuvering analysis and associated changes in the OTDT setpoint terms "Z" and allowable value. Other key parameters, including the planned operation at a nominal vessel average reactor coolant temperature of 586.5 °F, were verified to be within established limits.

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The staff has reviewed the licensee's submittal related to the revised setpoints derived using NRC-approved methodologies, and has determined that the licensee has shown that operation in the proposed manner is within applicable safety parameters and limits. Therefore, the staff finds the proposed changes 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 (59 FR 34672). 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.

6.0 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: W. Reckley

Date: August 25, 1994