

50-482



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

July 21, 1998

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

SUBJECT: WOLF CREEK GENERATING STATION - AMENDMENT NO. 119 TO FACILITY  
OPERATING LICENSE NO. NPF-42 (TAC NO. M91859)

Dear Mr. Maynard:

The Commission has issued the enclosed Amendment No. 119 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 March 24, 1995, as supplemented by letters dated July 26, 1995 and September 5, 1996.

The amendment would add a new action statement to TS 3.5.1 which provides a 72-hour allowed outage time (AOT) for one accumulator to be inoperable because its boron concentration did not meet the 2300-2500 parts per million (ppm) band. Surveillance requirements would also be changed to incorporate the guidance of Generic Letter 93-05, "Line-Item Technical Specifications Improvements to Reduce Surveillance Requirements for Testing During Operation" that is applicable to the accumulators. Finally, the Bases section for TS 3/4.5.1 would be revised to reflect the changes described above.

The change to eliminate the requirement to verify boron concentration after an accumulator volume increase, provided the source of the makeup water is the refueling water storage tank, was approved on May 30, 1995, in Amendment 87. The change that allowed verification of accumulator operability based on acceptable level and pressure instead of the absence of alarms was approved on November 22, 1996, in Amendment 103. By letter dated July 17, 1998, the request to change the AOT for other reasons of accumulator inoperability from 1 hour to 24 hours was withdrawn. The Notice of Partial Withdrawal has been forwarded to the Federal Register for publication and a copy is enclosed for your information.

This amendment authorizes you, through a license condition, to relocate the instrumentation surveillance requirements from the technical specifications to Chapter 16 of the Updated Safety Analysis Report, as described in your submittal dated March 24, 1995, as supplemented by letters dated July 26, 1995, and September 5, 1996.

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Mr. Otto L. Maynard

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July 21, 1998

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,

*Kristine M Thomas*

Kristine M. Thomas, 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. 119 to NPF-42  
2. Safety Evaluation  
3. Notice

cc w/encl: See next page

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Document Name: WC91859.AMD

OFC	PDIV-2	PDIV-2	OTSB <i>wb</i>	OGC <i>sup</i>
NAME	<i>KMT</i> KThomas	<i>esp</i> EPeyton	WBeckner	<i>WJohnson</i>
DATE	6/26/98	6/25/98	6/29/98	7/7/98

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Mr. Otto L. Maynard

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July 21, 1998

cc w/encls:

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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. 119  
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 March 24, 1995, as supplemented by letters dated July 26, 1995, and September 5, 1996, 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. 119, 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.

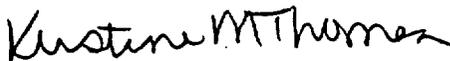
Also, Paragraph 2.C.(15) of Facility Operating License No. NPF-42 is hereby amended to read as follows:

- (15) Additional Conditions

The Additional Conditions contained in Appendix D, as revised through Amendment No. 119, are hereby incorporated into this license. Wolf Creek Nuclear Operating Corporation shall operate the facility in accordance with the Additional Conditions.

3. The license amendment is effective as of its date of issuance and shall be implemented within 30 days of the date of issuance. Implementation of the license amendment shall include the relocation of certain technical specifications requirements to the appropriate licensee-controlled document as described in the licensee's application dated March 24, 1995, as supplemented by letters dated July 26, 1995, and September 5, 1996, and evaluated in the staff's safety evaluation attached to this amendment.

FOR THE NUCLEAR REGULATORY COMMISSION



Kristine M. Thomas, Project Manager  
Project Directorate IV-2  
Division of Reactor Projects III/IV  
Office of Nuclear Reactor Regulation

- Attachments: 1. Changes to the Technical Specifications  
2. Appendix D - Additional Conditions

Date of Issuance: July 21, 1998

ATTACHMENT TO LICENSE AMENDMENT NO. 119

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

3/4 5-1

3/4 5-2

B 3/4 5-1

INSERT

3/4 5-1

3/4 5-2

B 3/4 5-1

### 3/4.5 EMERGENCY CORE COOLING SYSTEMS

#### 3/4.5.1 ACCUMULATORS

##### LIMITING CONDITION FOR OPERATION

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3.5.1 Each Reactor Coolant System accumulator shall be OPERABLE with:

- a. The isolation valve open and power removed.
- b. A contained borated water volume of between 6122 and 6594 gallons.
- c. A boron concentration of between 2300 and 2500 ppm, and
- d. A nitrogen cover-pressure of between 585 and 665 psig.

APPLICABILITY: MODES 1, 2, and 3\*.

##### ACTION:

- a. With one accumulator inoperable due to boron concentration not within limits, either restore the boron concentration to within the above limits within 72 hours or be in at least HOT STANDBY within the next 6 hours and reduce RCS pressure to less than 1000 psig within the following 6 hours.
- b. With one accumulator inoperable for reasons other than ACTION a., restore the inoperable accumulator to OPERABLE status within 1 hour or be in at least HOT STANDBY within the next 6 hours and reduce RCS pressure to less than 1000 psig within the following 6 hours.

##### SURVEILLANCE REQUIREMENTS

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4.5.1.1 Each accumulator shall be demonstrated OPERABLE:

- a. At least once per 12 hours by:
  - 1) Verifying that the contained borated water volume and nitrogen cover-pressure in the tanks are within their limits, and
  - 2) Verifying that each accumulator isolation valve is open.

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\*Pressurizer pressure above 1000 psig.

EMERGENCY CORE COOLING SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

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- b. At least once per 31 days and within 6 hours after each solution volume increase of greater than or equal to 70 gallons by verifying the boron concentration of the accumulator solution. This surveillance is not required when the volume increase makeup source is the RWST and the RWST has not been diluted since verifying that its boron concentration is within limits of Specification 3.5.5.
- c. At least once per 31 days when the RCS pressure is above 1000 psig by verifying that the circuit breaker supplying power to the isolation valve operator is open.

## 3/4.5 EMERGENCY CORE COOLING SYSTEMS

### BASES

#### 3/4.5.1 ACCUMULATORS

The OPERABILITY of each Reactor Coolant System (RCS) accumulator ensures that a sufficient volume of borated water will be immediately forced into the core through each of the cold legs in the event the RCS pressure falls below the pressure of the accumulators. This initial surge of water into the core provides the initial cooling mechanism during large RCS pipe ruptures.

The limits on accumulator volume, boron concentration and pressure ensure that the assumptions used for accumulator injection in the safety analysis are met.

The accumulator power operated isolation valves are considered to be "operating bypasses" in the context of IEEE Std. 279-1971, which requires that bypasses of a protective function be removed automatically whenever permissive conditions are not met. In addition, as these accumulator isolation valves fail to meet single failure criteria, removal of power to the valves is required.

The allowed outage time limit for operation with one accumulator inoperable due to boron concentration not within limits reflects the fact that no credit is taken in the accident analysis for boron concentration in the accumulators during the LOCA blowdown phase. Injection of borated water provides the fluid medium for heat transfer from the core and prevents excessive clad temperatures, contributing to the filling of the reactor vessel downcomer. The downcomer water elevation head provides the driving force required for the reflooding of the reactor core. Negative reactivity is initially a function of the void formation in the core. One accumulator below the minimum boron concentration limit will have no effect on available ECCS water and an insignificant effect on core subcriticality during reflood. Boiling of ECCS water in the core during reflood concentrates boron in the saturated liquid that remains in the core. Boron concentration during the sump recirculation phase is dominated by the RWST boron concentration.

Technical Specification 4.5.1.2, which required the performance of a channel calibration of each accumulator water level and pressure channel once per 18 months, was relocated to the Updated Safety Analysis Report. This was accomplished in accordance with the recommendations of Generic Letter 93-05 and NUREG-1366. These recommendations were based on the recognition that accumulator instrumentation operability is not directly related to the capability of the accumulators to perform their safety function.

#### 3/4.5.2, 3/4.5.3, and 3/4.5.4 ECCS SUBSYSTEMS

The OPERABILITY of two independent ECCS subsystems ensures that sufficient emergency core cooling capability will be available in the event of a LOCA assuming the loss of one subsystem through any single failure consideration. Either subsystem operating in conjunction with the accumulators is capable of supplying sufficient core cooling to limit the peak cladding temperatures within acceptable limits for all postulated break sizes ranging from the double ended break of the largest RCS cold leg pipe downward. In addition, each ECCS subsystem provides long-term core cooling capability in the recirculation mode during the accident recovery period.

With the RCS temperature below 350°F, one OPERABLE ECCS subsystem is acceptable without single failure consideration on the basis of the stable reactivity condition of the reactor and the limited core cooling requirements.

## EMERGENCY CORE COOLING SYSTEMS

### BASES

#### ECCS SUBSYSTEMS (Continued)

The limitation for a maximum of one centrifugal charging pump to be OPERABLE and the Surveillance Requirements to verify all charging pumps except the required OPERABLE charging pump to be inoperable in MODES 4 and 5 and in MODE 6 with the reactor vessel head on, provides assurance that a mass addition pressure transient can be relieved by the operation of a single PORV or RHR suction relief valve. In addition, the requirement to verify all Safety Injection pumps to be inoperable in MODE 4, in MODE 5 with the water level above the top of the reactor vessel flange, and in MODE 6 with the reactor vessel head on and with water level above the top of the reactor vessel flange, provides assurance that the mass addition can be relieved by a single PORV or RHR suction relief valve.

With the water level not above the top of the reactor vessel flange and with the vessel head on, Safety Injection pumps may be available to mitigate the affects of a loss of decay heat removal during a reduced RCS inventory condition.

The Surveillance Requirements provided to ensure OPERABILITY of each component ensures that at a minimum, the assumptions used in the safety analyses are met and that subsystem OPERABILITY is maintained. Surveillance Requirements for throttle valve position stops and flow balance testing provide assurance that proper ECCS flows will be maintained in the event of a LOCA. Maintenance of proper flow resistance and pressure drop in the piping system to each injection point is necessary to: (1) prevent total pump flow from exceeding runout conditions when the system is in its minimum resistance configuration, (2) provide the proper flow split between injection points in accordance with the assumptions used in the ECCS-LOCA analyses, and (3) provide an acceptable level of total ECCS flow to all injection points equal to or above that assumed in the ECCS-LOCA analyses. The Surveillance Requirements for leakage testing of ECCS check valves ensures that a failure of one valve will not cause an intersystem LOCA. The Surveillance Requirements to vent the ECCS pump casings and accessible, i.e., can be reached without personnel hazard or high radiation dose, discharge piping ensures against inoperable pumps caused by gas binding or water hammer in ECCS piping.

#### 3/4.5.5 REFUELING WATER STORAGE TANK

The OPERABILITY of the refueling water storage tank (RWST) as part of the ECCS ensures that a sufficient supply of borated water is available for injection by the ECCS in the event of a LOCA. The limits on RWST minimum volume and boron concentration ensure that: (1) sufficient water is available within containment to permit recirculation cooling flow to the core, and (2) the reactor will remain subcritical in the cold condition following mixing of the RWST and the RCS water volumes assuming all the control rods are out of the core. These assumptions are consistent with the LOCA analyses.

APPENDIX D

ADDITIONAL CONDITIONS

FACILITY OPERATING LICENSE NO. NPF-42

Wolf Creek Nuclear Operating Corporation shall comply with the following conditions on the schedules noted below:

<u>Amendment Number</u>	<u>Additional Condition</u>	<u>Implementation Date</u>
108	The licensee is authorized to relocate certain technical specification requirements to licensee-controlled documents. Implementation of this amendment shall include the relocation of these technical specification requirements to the appropriate documents, as described in the licensee's application dated February 17, 1997, and evaluated in the staff's safety evaluation dated July 23, 1997.	The amendment shall be implemented 30 days from the date of issuance.
119	The licensee is authorized to relocate certain technical specification requirements to licensee-controlled documents. Implementation of this amendment shall include the relocation of these technical specification requirements to the appropriate documents, as described in the licensee's application dated March 24, 1995, as supplemented by letters dated July 26, 1995, and September 5, 1996, and evaluated in the staff's safety evaluation dated July 21, 1998.	The amendment shall be implemented 30 days from the date of issuance.

Amendment No. 408,119



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 119 TO FACILITY OPERATING LICENSE NO. NPF-42  
WOLF CREEK NUCLEAR OPERATING CORPORATION  
WOLF CREEK GENERATING STATION

DOCKET NO. 50-482

1.0 INTRODUCTION

By letter dated March 24, 1995, as supplemented by letters dated July 26, 1995, and September 5, 1996, Wolf Creek Nuclear Operating Corporation (the licensee) requested changes to the Technical Specifications (Appendix A to Facility Operating License No. NPF-42) for the Wolf Creek Generating Station. The proposed changes would add a new action statement to Technical Specification (TS) 3.5.1 which would provide a 72-hour allowed outage time (AOT) for one accumulator to be inoperable because its boron concentration did not meet the 2300-2500 parts per million (ppm) band. The current action statement would be followed if an accumulator is inoperable for any other reason. This approach is consistent with NUREG-1431, "Standard Technical Specifications - Westinghouse Power Plants."

Changes to the surveillance requirements are also proposed which would base the operability of the accumulator on the contained water volume and cover gas pressure and move the requirement to perform calibrations of the pressure and level channels from the TS to Chapter 16 of the Updated Safety Analysis Report (USAR). In addition, the Bases section for TS 3/4.5.1 is being revised to reflect the changes described above.

The proposal to eliminate the requirement to verify boron concentration after an accumulator volume increase, provided the source of makeup water is the refueling water storage tank, was approved on May 30, 1995, as Amendment 87. The change that allowed verification of accumulator operability based on acceptable level and pressure instead of the absence of alarms was approved on November 22, 1996, in Amendment 103. By letter dated July 17, 1998, the proposal to change the AOT for other reasons of inoperability from 1 hour to 24 hours was withdrawn.

The July 26, 1995, and September 5, 1996, supplemental letters provided additional clarifying information and did not change the initial no significant hazards consideration determination published in the Federal Register on April 12, 1995 (60 FR 18632).

## 2.0 EVALUATION

The changes proposed by the licensee to TS 3.5.1 to incorporate a 72-hour AOT because of boron concentration limits are consistent with NUREG-1431 (April 1995), "Standard Technical Specifications for Westinghouse Power Plants." The current action statement would be followed if an accumulator is inoperable for any other reason. The 72-hour AOT ensures core subcriticality during reflood. With an accumulator declared inoperable due to its boron concentration being out of specification, the ability to maintain subcriticality or minimum boron precipitation time may be reduced. The boron in the accumulators contributes to the assumption that the combined emergency core cooling system water in the partially recovered core during the early reflooding phase of a large break loss of coolant accident is sufficient to keep that portion of the core subcritical. One accumulator below the minimum boron concentration limit, however, will have no effect on available emergency core cooling system water and an insignificant effect on core subcriticality during reflood. As such, 72 hours is appropriate to return the boron concentration to within limits and is therefore, acceptable.

The changes proposed by the licensee to relocate TS Surveillance Requirement 4.5.1.2 to Chapter 16 of the USAR is consistent with the guidance of GL 93-05 regarding removal of surveillance requirements for instrumentation. The basis for this revision is to eliminate ineffective tests that place undue burden on plant personnel without commensurate safety benefit. The current Wolf Creek TS do not differentiate between an accumulator that is inoperable due to tank inventory or nitrogen gas pressure discrepancies and an accumulator whose inventory or gas pressure cannot be verified due solely to malfunctioning water level instrumentation or pressure instrumentation. Because these instruments provide no safety function, it is reasonable to relocate the instrumentation surveillance requirements from the TS to Chapter 16 of the USAR. In addition, the staff evaluated the proposed changes to determine if the surveillance requirement to be relocated met any of the four criteria in 10 CFR 50.36 for items to be included in the technical specifications. The staff concluded that the surveillance requirements did not meet any of the four criteria. Based on the above, the proposed relocation is acceptable. A condition has been added to Appendix D of the license to reflect this relocation.

The changes proposed to the Bases section for TS 3/4.5.1 were determined to reflect the changes described above, and are therefore 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 and changes a surveillance requirement. 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 (60 FR 18362). 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: July 21, 1998

UNITED STATES NUCLEAR REGULATORY COMMISSION

WOLF CREEK NUCLEAR OPERATING CORPORATION

DOCKET NO. 50-482

NOTICE OF PARTIAL WITHDRAWAL OF APPLICATION FOR AMENDMENT  
TO FACILITY OPERATING LICENSE

The U.S. Nuclear Regulatory Commission (the Commission) has granted a request by Wolf Creek Nuclear Operating Corporation (the licensee) to withdraw part of its March 24, 1995, application for an amendment to Facility Operating License No. NPF-42, issued to the licensee for operation of the Wolf Creek Nuclear Generating Station, Unit No. 1, located in Coffey County, Kansas. Notice of Consideration of Issuance of this amendment was published in the FEDERAL REGISTER on April 12, 1995 (60 FR 18632).

The portion of the licensee's amendment request which is being withdrawn is the revision of the Technical Specifications (TS) that would change the allowed outage time (AOT) for other reasons of accumulator inoperability from 1 hour to 24 hours.

Subsequently the licensee informed the staff that this portion of the amendment will be resubmitted at a later time. Thus, this portion of the amendment application is considered to be withdrawn by the licensee.

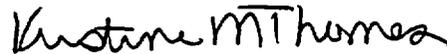
For further details with respect to this action, see (1) the application for amendment dated March 24, 1995, as supplemented by letters dated July 26, 1995 and September 5, 1996, and (2) the staff's letter dated July 21, 1998.

These documents are available for public inspection at the Commission's Public Document Room, the Gelman Building, 2120 L Street, NW., Washington, DC and at the

Emporia State University, William Allen White Library, 1200 Commercial Street, Emporia,  
Kansas 66801 and Washburn University School of Law Library, Topeka, Kansas 66621.

Dated at Rockville, Maryland, this 21st day of July 1998.

**FOR THE NUCLEAR REGULATORY COMMISSION**



Kristine M. Thomas, Project Manager  
Project Directorate IV-2  
Division of Reactor Projects III/IV  
Office of Nuclear Reactor Regulation