

August 29, 2006

Mr. Rick A. Muench
President and Chief Executive Officer
Wolf Creek Nuclear Operating Corporation
Post Office Box 411
Burlington, KS 66839

SUBJECT: WOLF CREEK GENERATING STATION - ISSUANCE OF AMENDMENT RE:
ADDITION OF SURVEILLANCE REQUIREMENT 3.3.1.16 TO TECHNICAL
SPECIFICATION TABLE 3.3.1-1 (TAC NO. MD0027)

Dear Mr. Muench:

The U.S. Nuclear Regulatory Commission (the Commission) has issued the enclosed Amendment No. 165 to Facility Operating License No. NPF-42 for the Wolf Creek Generating Station. The amendment consists of changes to the Technical Specifications (TSs) in response to your application dated February 7, 2006 (ET 06-0002), as supplemented by letter dated July 25, 2006 (ET 06-0030).

The amendment revises TS Table 3.3.1-1, "Reactor Trip System Instrumentation," by adding the existing Surveillance Requirement 3.3.1.16 to Function 3.a of the table.

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,

/RA/

Jack Donohew, Senior Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-482

Enclosures: 1. Amendment No. 165 to NPF-42
2. Safety Evaluation

cc w/encls: See next page

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WOLF CREEK NUCLEAR OPERATING CORPORATION

WOLF CREEK GENERATING STATION

DOCKET NO. 50-482

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 165

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 February 7, 2006, as supplemented by letter dated July 25, 2006, 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. 165, 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 90 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

David Terao, Chief
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical
Specifications

Date of Issuance: August 29, 2006

ATTACHMENT TO LICENSE AMENDMENT NO. 165

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 an amendment number and contains a marginal line indicating the area of change. The corresponding overleaf page is provided to maintain document completeness.

REMOVE

3.3-15

INSERT

3.3-15

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 165 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 February 7, 2006 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML060690030), as supplemented by letter dated July 25, 2006 (ADAMS Accession No. ML062140101), 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 amendment would revise TS Table 3.3.1-1, "Reactor Trip System [RTS] Instrumentation," by adding the existing Surveillance Requirement (SR) 3.3.1.16 to Function 3.a of the table.

The supplemental letter dated July 25, 2006, provided additional clarifying information, did not expand the scope of the application as originally noticed, and did not change the staff's original proposed no significant hazards consideration determination published in the *Federal Register* on February 28, 2006 (71 FR 10080).

2.0 REGULATORY EVALUATION

In Section 36 of Part 50 of Title 10 of the *Code of Federal Regulations* (10 CFR 50.36), the Nuclear Regulatory Commission (NRC) issued a rule and established its regulatory requirements related to the content of TSs. In doing so, the NRC emphasized those matters related to the prevention of accidents and mitigation of consequences of such accidents. As recorded in the Statements of Consideration, Technical Specifications for Facility Licenses: Safety Analysis Reports (33 FR 18610, December 17, 1968), the NRC noted that licensees are expected to incorporate into their plant TSs those items that are directly related to maintaining the integrity of the physical barriers designed to contain radioactivity. Pursuant to 10 CFR 50.36, TSs are required to include items in five specific categories related to station operation. Specifically, those categories include: (1) safety limits, limiting safety system settings, and limiting control settings; (2) limiting conditions for operation (LCOs) for structure, systems, and components (SSCs); (3) SRs; (4) design features; and (5) administrative controls. However, the rule does not specify the specific requirements to be included in a plant's TSs.

In 10 CFR 50.36(c)(3), "Surveillance requirements," SRs are requirements relating to test, calibration, or inspection to assure that the necessary quality of SSCs is maintained, that facility operation will be within safety limits, and that the LCOs are being met.

3.0 TECHNICAL EVALUATION

In its application, the licensee has proposed to add the existing SR 3.3.1.16 to RTS Trip Function 3.a, the power range neutron flux rate-high positive rate, of TS Table 3.3.1-1, "Reactor Trip System Instrumentation." The RTS instrumentation is the instrumentation that initiates a unit shutdown by tripping the reactor on values of selected unit parameters to protect the reactor core fuel design limits and reactor coolant system pressure boundary during anticipated operational occurrences (AOOs) and to assist engineered safety features in mitigating accidents. The protection and monitoring systems of the RTS have been designed to assure safe operation of the reactor by specifying allowable values for the parameters monitored by the RTS to protect the limited safety system settings.

For this amendment, the relevant parameter being monitored by the RTS is the power range neutron flux rate-high positive rate (i.e., RTS Trip Function 3.a in TS Table 3.3.1-1). The RTS trip function on the power range neutron flux rate-high positive rate ensures that protection is provided to the reactor against rapid increases in neutron flux that is characteristic of a rupture of a rod cluster control assembly (RCCA) drive rod housing and the accompanying ejection of the RCCA. This design-basis accident (DBA) is the uncontrolled RCCA withdrawal at power (RWAP) event, which is analyzed for WCGS in Updated Safety Analysis Report (USAR) Section 15.4.2. This RTS trip function is applicable only for Modes 1 and 2 when there is a potential to add a large amount of positive reactivity from an RCCA-ejection accident or event (e.g., the design-basis RWAP event).

The licensee is not proposing to change the applicable modes, required channels, the conditions for any inoperable channel, or the allowable value for RTS Trip Function 3.a. The licensee is proposing only to increase the requirements on RTS Trip Function 3.a by requiring an additional surveillance requirement to determine if the RTS trip function is operable, and, thus, LCO 3.3.1 is being met.

3.1 Background

The existing SR 3.3.1.16 requires the verification that the RTS channel actuation response times are less than or equal to the maximum values assumed in the accident analyses. The response time limits are listed in Table B 3.3.1-1 of the TS Bases, and SR 3.3.1.16 requires that periodically the RTS channel be tested to verify the RTS response time is within the limits listed in Table B 3.1.1-1. The RTS response times are defined in the TSs as that time interval from when the monitored parameter exceeds its RTS trip setpoint at the channel sensor until loss of stationary gripper coil voltage. The loss of stationary gripper coil voltage is when the operable RCCAs drop into the reactor core and shut down or trip the reactor.

In its application, the licensee explained that, in August 2002, Westinghouse Electric Corporation issued Nuclear Safety Advisory Letter (NSAL) 02-11, "Reactor Protection System Response Time Requirements," which notified licensees that some positive neutron flux rate trip (i.e., PFRT trip) functions may be credited for protection against AOOs or postulated accidents, but may not be explicitly credited for primary protection in the DBAs in Chapter 15 of the USAR for their plants. In an evaluation of the NSAL, the licensee for WCGS determined that this is true of the USAR for WCGS. Since then, the licensee stated that it has re-analyzed the RWAP event using more conservative techniques and has determined that the RTS Trip Function 3.a is being taken credit for in the RWAP safety analysis for primary protection of the

reactor core. Based on this, the licensee stated that it has proposed to add SR 3.3.1.16 to the surveillance requirements in TS Table 3.3.1-1, which is required for determining the operability (i.e., determining that a system is capable of performing its safety function) of RTS Trip Function 3.a.

3.2 Re-Analysis of the Design-Basis RWAP Event

In addressing the re-analysis of the design-basis RWAP event in its application, the licensee made the following statement: "The assumptions and methods used for this analysis are consistent with earlier analyses performed for this event [RWAP] as described in USAR Section 15.4.2 to a great extent." In a conference call and email (ADAMS Accession No. ML060960463), the licensee explained that the statement meant that an evaluation of the RWAP re-analysis was made in accordance with Section 50.59 of 10 CFR and it was determined that the changes to the analysis were conservative, with the exception of the licensee now taking credit for the power range neutron flux rate-high positive rate trip (i.e., RTS Trip Function 3.a in TS Table 3.3-1), which required a change to the TSs (i.e., approval of this amendment request). The licensee stated further that the use of the RETRAN-3D in the RETRAN-02 mode in the re-analysis is considered a change in methodology; however, the use of RETRAN-3D in RETRAN-02 modes has been reviewed and approved for plants by the NRC and found acceptable for use by licensees in the NRC safety evaluation (SE) dated January 4, 2001, for Electric Power Research Institute (EPRI) Topical Report NP-7450(P), "RETRAN-3D - A Program for Transient Thermal-Hydraulic Analysis of Complex Fluid Flow Systems (TAC No. MA4311)," Revision 4. Because this SE approval for the use of RETRAN-3D applies to WCGS, the use of RETRAN-03 in the RETRAN-02 mode for the re-analysis of the RWAP event is acceptable. The 10 CFR 50.59 evaluation for the RWAP re-analysis will, therefore, be completed after the issuance of this amendment, by which the NRC approves the credit being taken by the licensee for use of the power range neutron flux rate-high positive rate trip. The licensee stated that the 50.59 evaluation will be completed as part of the implementation of the amendment.

In a conference call on May 25, 2006, the NRC staff discussed the licensee's use of RETRAN-3D in the RETRAN-02 mode. In response to this conference call, the licensee submitted its supplemental letter dated July 25, 2006. In that letter, the licensee stated that the NRC has approved the use of RETRAN-02 in the SE dated September 30, 1993, for the WCGS Topical report NSAG-006, "Transient Analysis Methodology for the Wolf Creek Generating Station." This is the third NRC-approved method that is listed in Part b of TS 5.6.5, "Core Operating Limits Report." The licensee explained that the upgrade of the RETRAN code model to RETRAN-3D, which was used in the re-analysis of the RWAP event, was performed using the licensee's calculation process; it had completed a design verification report to document a validity assessment of applying the RETRAN-3D in the RETRAN-02 mode to WCGS. This assessment included ensuring that the conditions and limitations in the NRC SE that approved the use RETRAN-3D code were complied with and that the correct RETRAN-02 models contained in the RETRAN-3D code were used for WCGS. The licensee stated that none of the RETRAN-3D models listed in the limitations are being used. Therefore, the licensee concluded that it is using an NRC-approved RETRAN-3D in the RETRAN-02 mode for WCGS.

The licensee further stated in the July 25, 2006, letter that it compared results between (1) the RETRAN-02 analysis and (2) the RETRAN-3D code in the RETRAN-02 mode analysis for the RWAP event for the limiting departure from nucleate boiling, overpressure, and overfill cases of

the current analysis of record at both minimum and maximum reactivity feedback conditions. The licensee stated that there is considerable consistency between the results for the two analyses. The licensee concluded that this provided an acceptable level of confidence in the use of RETRAN-3D in the RETRAN-02 mode. In the conference call of May 25, 2006, the NRC staff had requested that the licensee include in its core operating limits report for WCGS a reference to the EPRI topical report for the RETRAN-3D code and a statement that the RETRAN-3D code would be used only in the RETRAN-02 mode. The licensee stated in the July 26, 2006, letter that it will do this.

Based on the above evaluation, the NRC staff concludes that the licensee's use of 10 CFR 50.59 in addressing the change to the plant with respect to the re-analysis of the RWAP event is acceptable, and that it is acceptable for the licensee to have used the RETRAN-3D code in the RETRAN-02 mode for the RWAP event.

3.3 Crediting RTS Trip Function 3.a in TS Table 3.3-1

In taking credit for trip Function 3.a in the design-basis RWAP event, the licensee is crediting this trip function as the primary (or only) trip to shut down the reactor core in its analysis of the consequences of the DBA. For the licensee to take credit for this trip function in a DBA, it has to require that the trip function is response time tested by SR 3.3.1.16 to demonstrate the "necessary quality" of the trip function pursuant to 50.36(c)(3). Therefore, the licensee has proposed in this amendment to add SR 3.3.1.16 to require in the TSs that this trip function be response time tested on a periodic basis. SR 3.3.1.16 is the surveillance requirement in the TSs that response time tests an RTS trip function. This RTS trip function has not been previously required to be response time tested because it was not being previously credited as the primary trip of the reactor core in a DBA.

The licensee stated that a rate setpoint of 9 percent of rated thermal power (RTP) with a time lag of 2.0 seconds and a 3.0 second trip delay were assumed in the RWAP re-analysis, both for consistency with the Westinghouse Safety Analysis Standard No.2, "Uncontrolled RCCA Bank Withdrawal at Power," Revision 6, dated March 2003, and for conservatism. The licensee further stated that these assumptions for the re-analysis bound (1) the response time of less than or equal to 0.5 seconds that the licensee will be adding to TS Bases Table B 3.3.1-1 for RTS Trip Function 3.a, which is shown in Attachment IV to the application, and (2) the allowable value of less than or equal to 6.3 percent of RTP with a time constant of less than or equal to 2 seconds for RTS Trip Function 3.a in TS Table 3.3.1-1. Therefore, the licensee concluded that the allowable value for RTS Trip Function 3.a in TS Table 3.3.1-1 does not need to be changed, and a response time limit will be specified for RTS Trip Function 3.a. The NRC staff agrees that the value of less than or equal to 0.5 seconds, which will be added to Table B 3.3.1-1 for the response time limit for RTS Trip Function 3.a, is bounded by the assumptions in the re-analysis of the RWAP event. The NRC staff, therefore, concludes that the response time limit of less than or equal to 0.5 seconds for RTS Trip Function 3.a in TS Table 3.3.1-1 is acceptable.

In the TSs, SR 3.3.1.16 has the surveillance test interval (STI) at 18 months on a staggered test basis. As explained in the TS Bases for SR 3.3.1.16, the response times cannot be determined during unit operation because equipment operation is required to measure response times, and experience has shown that these components tested per SR 3.3.1.16 usually pass this surveillance requirement. The licensee stated in its application that it has been administratively

response time testing the components of RTS Trip Function 3.a on an operating basis since Refueling Outage 13, conducted in the fall of 2003, with satisfactory results. Based on the licensee's experienced response time testing the trip function, the NRC staff concludes that the STI for SR 3.3.1.16 is an acceptable STI for the response time testing of RTS Trip Function 3.a.

Based on the above evaluation and the fact that the licensee is taking credit for RTS Trip Function 3.a in its analysis of the RWAP event, the NRC staff concludes that the RTS trip function must be required to be response time tested per the TSs and that the addition of SR 3.3.1.16 in Table 3.3.1-1 is the appropriate requirement to demonstrate the "necessary quality" of the RTS trip function.

3.4 Conclusions

Because response time testing of RTS Trip Function 3.a of TS Table 3.3.1-1 is needed to demonstrate the "necessary quality" of the trip function, and because SR 3.3.1.16 and the specified STI are the appropriate surveillance requirement and STI to perform this testing, the NRC staff concludes that the proposed addition of SR 3.3.1.16 to RTS Trip Function 3.a in TS Table 3.3.1-1 meets Section 50.36 of 10 CFR and, therefore, the proposed amendment is acceptable.

4.0 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.

5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to the 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 (71 FR 10080; published February 28, 2006). 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: Jack Donohew

Date: August 29, 2006

Wolf Creek Generating Station
cc:

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