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March 23, 2000

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

SUBJECT: WOLF CREEK GENERATING STATION - ISSUANCE OF AMENDMENT RE: PRESSURIZER SAFETY VALVES (TAC NO. MA6969)

Dear Mr. Maynard:

The Commission has issued the enclosed Amendment No. 133 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 21, 1999 (ET 99-0025).

The amendment revises Technical Specification (TS) 3.4.10, Pressurizer Safety Valves [PSV], of the improved Technical Specifications (TSs) issued March 31, 1999. The amendment reduces the safety valve set pressure in the Limiting Condition for Operation (LCO) 3.4.10 and decreases the setpoint in Surveillance Requirement (SR) 3.4.10.1. The PSV setpoint and setpoint tolerance is changed from 2485 psig $\pm$ 1% to 2460 psig $\pm$ 2% in the LCO. The tolerance of $\pm$1% in the SR is for resetting the setpoint after testing, if this is needed, and is not changed. The licensee also submitted the Bases pages for TS 3.4.10, which show corrections to reflect the changes to the TSs.

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,

Jack Donohew, Senior Project Manager, Section 2
Project Directorate IV & Decommissioning
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-482

Enclosures: 1. Amendment No. 133 to NPF-42
2. Safety Evaluation

cc w/encls: See next page

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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. 133
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 21, 1999, 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. 133, 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 before the restart from refueling outage 11, which is the next refueling outage scheduled to begin October 2000.

FOR THE NUCLEAR REGULATORY COMMISSION

Stephen Dembek, Chief, Section 2
Project Directorate IV & Decommissioning
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: March 23, 2000

ATTACHMENT TO LICENSE AMENDMENT NO. 133

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.

REMOVE	INSERT
3.4-21	3.4-21
3.4-22	3.4-22

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.10 Pressurizer Safety Valves

LCO 3.4.10 Three pressurizer safety valves shall be OPERABLE with lift settings $\geq$ 2411 psig and $\leq$ 2509 psig.

APPLICABILITY: MODES 1, 2, and 3.

---NOTE---
The lift settings are not required to be within the LCO limits during MODE 3 for the purpose of setting the pressurizer safety valves under ambient (hot) conditions. This exception is allowed for 54 hours following entry into MODE 3 provided a preliminary cold setting was made prior to heatup.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One pressurizer safety valve inoperable.	A.1	Restore valve to OPERABLE status.	15 minutes
B. Required Action and associated Completion Time not met. OR Two or more pressurizer safety valves inoperable.	B.1 AND B.2	Be in MODE 3. Be in MODE 4.	6 hours 12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.10.1	Verify each pressurizer safety valve is OPERABLE in accordance with the Inservice Testing Program. Following testing, lift settings shall be within ± 1% of 2460 psig.	In accordance with the Inservice Testing Program

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 133 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 21, 1999, 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 changes would revise the limiting condition of operation (LCO) and surveillance requirement (SR) of Technical Specification (TS) 3.4.10, Pressurizer Safety Valves [PSV] of the TSs.

The proposed revision is to reduce the safety valve set pressure in LCO 3.4.10, and decrease the pressure setpoint in SR 3.4.10.1. The PSV setpoint and setpoint tolerance is proposed to be changed from 2485 psig $\pm$ 1% to 2460 psig $\pm$ 2% in the LCO. The tolerance of $\pm$1% in the SR is for resetting the setpoint after testing, if this is needed, and is not changed. The licensee also submitted the Bases pages for TS 3.4.10, which show corrections to reflect the proposed changes to the TSs.

In a telephone conversation on December 1, 1999, the licensee requested that the implementation date be changed from 60 days to before the restart from refueling outage 11, which is the next refueling outage scheduled to begin October 2000.

2.0 EVALUATION

The current pressurizer safety valve (PSV) set pressure (i.e., lift setpoint) in LCO 3.4.10 is $\geq$ 2461 psig and $\leq$ 2509 psig. This is a nominal lift setpoint of 2485 psig $\pm$ 1% for the valves. The licensee has proposed to lower the nominal setpoint by 1 percent and to increase the setpoint tolerance by 1 percent; therefore, the proposed lift setpoint would become $\geq$ 2411 psig and $\leq$ 2509 psig (i.e., 2460 psig $\pm$ 2%). Thus, the upper limit of the PSV settings remains unchanged. Also, the tolerance for resetting the setpoint after testing will remain unchanged at $\pm$ 1%, however, the lower nominal setting would become 2460 psig.

The PSVs provide overpressure protection of the reactor coolant system (RCS). The upper setpoint limit is based on the PSVs solely having the capability to limit the RCS pressure surge, resulting from a reactor core transient from full power, to 110% of pressurizer design pressure. The proposed change does not challenge the upper limit of the RCS overpressure protection

because the upper setpoint will remain $\leq$ 2509 psig, which the current analysis on RCS pressure surge is based. Therefore, the proposed amendment does not affect analyses performed for overpressure transients.

Although the lower setpoint will allow the possibility of a PSV opening at a lower RCS pressure and therefore a lower discharge flow from the valve, the lower flow from the RCS is more than compensated in the analysis by the lower pressure at which the flow begins. The RCS pressure surge analysis is not affected by the proposed amendment.

The licensee stated that it reviewed the new nominal setpoint and setpoint tolerance to determine the effect of the proposed amendment on the thermal and hydraulic analysis described in WCGS Updated Safety Analysis Report (USAR) Section 3.9(B).3.3. In this section, the RCS mechanical systems and components, including the pressurizer safety and relief system that contains the PSVs, are discussed. The licensee stated that the proposed amendment does not change the conclusions of the existing thermal hydraulic analysis for the pressurizer safety and relief system.

The proposed amendment was also evaluated by the licensee for any impact on control systems. The proposed amendment does not affect reactor protection or engineered safety features system trip setpoints. The licensee stated that the pressurizer power operated relief valve (PORV) actuation setpoint is 2335 psig, 76 psi below the proposed new lower setting of the PSVs. This proposed amendment is, therefore a reduction in the difference between the PORV-PSV actuation setpoints from 126 psi to 76 psi; however, the difference of 76 psi is considered sufficient so that the PORV would still actuate before the PSVs in the case of rising RCS pressure.

The licensee has performed an evaluation of the effects of the the proposed changes on the WCGS safety analyses discussed in Chapter 15 of the USAR for WCGS. The licensee concluded the following:

- The proposed changes in the PSV pressure settings do not affect the loss-of-coolant accident (LOCA) and the steam generator tube rupture (SGTR) evaluations because RCS pressure does not reach the lower limit of the PSV settings and the PSVs are not included in the accidents.

- The proposed changes in the PSV pressure settings do not affect the non-LOCA transient evaluations in Chapter 15 because where RCS pressure is affected, the pressurizer spray and PORV are sufficient to prevent actuation of the PSVs with the new lower setting in the transients.

Although not presented in USAR Chapter 15, the transient of a steamline break with coincidental rod cluster control assembly withdrawal at power was also evaluated by the licensee. In this case, as the second note above, the RCS pressure does not reach the proposed lower setting of the PSVs.

The licensee stated that it performed a revised pressurizer overfill analysis of the transient involving inadvertent operation of the ECC system (i.e., ECC injection into the RCS) at power. The current analysis assumes operator action to terminate the ECC injection in 10 minutes;

however, with the proposed lower lift setting of 2411 psig for the PSVs, there could be water flow through a PSV. If there was water flow through a PSV, this could damage the PSV. The licensee has revised the analysis to assume the operator action is in eight minutes, which will prevent the possibility of water flow through a PSV. The transient would not reach the lower lift setting of 2411 psig. The licensee stated the reduced time for operator action is supported by plant operations through a plant procedure.

In telecons with the licensee on February 8 and 9, 2000 (NRC Accession No. ML003689724), the licensee stated that all the actions required by operators to terminate an inadvertent safety injection (SI) are taken from the control room and all the required steps are in the plant's emergency operating procedure, which is based on Westinghouse Owner's Group Generic Guideline, E-0, "Reactor Trip or Safety Injection." There were no changes made by the licensee to the steps as a result of the reduced time allowed for the operators to terminate inadvertent SI. However, the licensee further stated that procedures were changed to put the SI termination in the E-0 portion of its procedures as a result of an earlier corrective action taken in 1998 concerning validation of operator actions that were taken credit for in transients.

The licensee further stated that two crews, minimally staffed, validated that inadvertent SI could be terminated within the reduced time limit of 8 minutes (performance times ranged from 5'56" to 4'19"). All crews have been trained on terminating inadvertent SI within the new 8 minute limit during their scheduled requalification training and, all crews were noted by the licensee to have performed successfully. Though the two crews used to validate the reduced time limit were aware of the scenario, the licensee did use a minimum crew staffing which resulted in performance times with significant margins available before the 8 minute limit would be exceeded. In addition, all crews demonstrated successful performance during requalification training. These results provide the staff with reasonable assurance that successful termination of an inadvertent SI should be achievable by Wolf Creek operators within the newly established 8 minute time limit. The licensee also determined that, "... the lower valve setting does not increase the probability that an event will occur which will result in the valve opening... [and] the lower valve lift setting and increased tolerance has no significant effect on the PSA." Hence, the overall plant risk should not be adversely effected if operators failed to take the required actions within the new time limit.

If the operators should take more than 8 minutes, water could pass through a PSV, as stated above, and the PSV could be damaged such that the valve would not seat properly, and there could then be uncontrolled leakage from the RCS (i.e., the leakage could not be stopped while the plant was at power). Because temperature is measured in the safety valve discharge line, the licensee will have indication of the PSV leakage from an increase in the temperature and the RCS operational leakage limits in LCO 3.4.13 will require the licensee to shut down the plant if the identified leakage (i.e., the leakage through a safety valve) is greater than 10 gpm for more than 4 hours. This leakage is accounted and analyzed for in the Wolf Creek design and discussed in updated safety analysis report (USAR) Section 15.5.1, "Inadvertent Opening of a Pressurizer Safety or Relief Valve," on the Wolf Creek design. The results of the analysis show that the pressurizer low pressure (from the decreasing pressure following the open PSV) and overtemperature deltaT reactor protection signals provide adequate protection against this RCS depressurization event, and the TSs will prevent the licensee from operating with a high leak (> 10 gpm) through the safety valves. However, before the pressurizer pressure reached the proposed expanded PSV pressure setpoints, the pressure would go above the high

pressurizer pressure reactor trip setpoints (> 2400 psig in Table 3.3.1-1 of the TSs) and there should be a reactor trip.

Based on the above, the staff concludes that the proposed PSV nominal setpoint of 2460 psig $\pm$ 2% psig is acceptable. After the valves are tested, the setpoints will be reset if they are not within 2460 psig $\pm$ 1% psig. The 1 percent tolerance for the as-left setpoints is not being changed by the proposed amendment; therefore, there will be less chance that the drift of the as-left setpoint will exceed the upper setpoint limit used in the overpressure analysis.

Therefore, the staff concludes that the proposed amendment is acceptable. In its application, the licensee stated that the amendment was to be implemented within 60 days of issuance; however, in the conference call of December 1, 1999, the licensee changed the implementation date to before the plant restart from refueling outage 11, which is the refueling outage scheduled to begin October 2000. The implementation date was altered because PSVs will have to be removed from the plant during this outage to have the lift settings changed to meet the settings approved in this amendment. The revised implementation date is 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 (64 FR 62718). 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: Jack Donohew
James Bongarra

Date: March 23, 2000