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

January 27, 2009

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: APPLICATION TO REVISE TECHNICAL SPECIFICATION 5.6.6, REACTOR COOLANT SYSTEM PRESSURE AND TEMPERATURE LIMITS REPORT (TAC NO. MD9217)

Dear Mr. Muench:

The U.S. Nuclear Regulatory Commission (the Commission) has issued the enclosed Amendment No. 180 to Renewed 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 July 10, 2008, as supplemented by letter dated August 26, 2008.

The amendment revises TS 5.6.6, "Reactor Coolant System (RCS) PRESSURE AND TEMPERATURE LIMITS REPORT (PTLR)." The change will remove a revision number from the PTLR methodology reference, thereby allowing the licensee to adopt subsequent revisions of the currently approved methodology without having to submit an amendment to the Renewed Facility Operating License.

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,

Balwant K Singal

Balwant K. Singal, 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. 180 to NPF-42
2. Safety Evaluation

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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 RENEWED FACILITY OPERATING LICENSE

Amendment No. 180
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) Renewed Facility Operating License No. NPF-42 filed by the Wolf Creek Nuclear Operating Corporation (the Corporation), dated July 10, 2008, as supplemented by letter dated August 26, 2008, 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 Renewed Facility Operating License No. NPF-42 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 180, 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

Michael T. Markley, Chief
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Renewed
Facility Operating License and
Technical Specifications

Date of Issuance: January 27, 2009

ATTACHMENT TO LICENSE AMENDMENT NO. 180

RENEWED FACILITY OPERATING LICENSE NO. NPF-42

DOCKET NO. 50-482

Replace the following pages of the Renewed Facility Operating License No. NPF-42 and Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change. The corresponding overleaf pages are provided to maintain document completeness.

Renewed Facility Operating License

REMOVE	INSERT
4	4

Technical Specifications

REMOVE	INSERT
1.1-5	1.1-5
5.0-27	5.0-27

(5) The Operating Corporation, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess, and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and

(6) The Operating Corporation, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.

C. This renewed operating license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations in 10 CFR Chapter I and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission, now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

(1) Maximum Power Level

The Operating Corporation is authorized to operate the facility at reactor core power levels not in excess of 3565 megawatts thermal (100% power) in accordance with the conditions specified herein.

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 180, 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) Antitrust Conditions

Kansas Gas & Electric Company and Kansas City Power & Light Company shall comply with the antitrust conditions delineated in Appendix C to this license.

(4) Environmental Qualification (Section 3.11, SSER #4, Section 3.11, SSER #5)*

Deleted per Amendment No. 141.

*The parenthetical notation following the title of many license conditions denotes the section of the supporting Safety Evaluation Report and/or its supplements wherein the license condition is discussed.

1.1 Definitions (continued)

PHYSICS TESTS	PHYSICS TESTS shall be those tests performed to measure the fundamental nuclear characteristics of the reactor core and related instrumentation. These tests are: a. Described in Chapter 14, of the USAR; b. Authorized under the provisions of 10 CFR 50.59; or c. Otherwise approved by the Nuclear Regulatory Commission.
PRESSURE AND TEMPERATURE LIMITS REPORT (PTLR)	The PTLR is the unit specific document that provides the reactor vessel pressure and temperature limits, including heatup and cooldown rates and the power operated relief valve lift settings and the Low Temperature Overpressure Protection (LTOP) System arming temperature, for the current reactor vessel fluence period. These pressure and temperature limits shall be determined for each fluence period in accordance with Specification 5.6.6.
QUADRANT POWER TILT RATIO (QPTR)	QPTR shall be the ratio of the maximum upper excore detector calibrated output to the average of the upper excore detector calibrated outputs, or the ratio of the maximum lower excore detector calibrated output to the average of the lower excore detector calibrated outputs, whichever is greater.
RATED THERMAL POWER (RTP)	RTP shall be a total reactor core heat transfer rate to the reactor coolant of 3565 MWt.
REACTOR TRIP SYSTEM (RTS) RESPONSE TIME	The RTS RESPONSE TIME shall be 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 response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured. In lieu of measurement, response time may be verified for selected components provided that the components and the methodology for verification have been previously reviewed and approved by the NRC.

(continued)

5.6 Reporting Requirements

5.6.6 Reactor Coolant System (RCS) PRESSURE AND TEMPERATURE LIMITS REPORT (PTLR)

a. RCS pressure and temperature limits for heat up, cooldown, low temperature operation, criticality, hydrostatic testing, LTOP arming, and PORV lift settings as well as heatup and cooldown rates shall be established and documented in the PTLR for the following:

1. Specification 3.4.3, "RCS Pressure and Temperature (P/T) Limits," and

2. Specification 3.4.12, "Low Temperature Overpressure Protection System."

b. The analytical methods used to determine the RCS pressure and temperature limits shall be those previously reviewed and approved by the NRC, specifically those described in the following document:

1. WCAP-14040-A, "Methodology Used to Develop Cold Overpressure Mitigating System Setpoints and RCS Heatup and Cooldown Limit Curves."

c. The PTLR shall be provided to the NRC upon issuance for each reactor vessel fluence period and for any revision or supplement thereto.

5.6.7 Not Used.

5.6.8 PAM Report

When a report is required by Condition B or F of LCO 3.3.3, "Post Accident Monitoring (PAM) Instrumentation," a report shall be submitted within the following 14 days. The report shall outline the preplanned alternate method of monitoring, the cause of the inoperability, and the plans and schedule for restoring the instrumentation channels of the Function to OPERABLE status.

5.6.9 Not Used.

(continued)

UNITED STATES
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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 180 TO

RENEWED 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 July 10, 2008 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML082000124), as supplemented by letter dated August 26, 2008 (ADAMS Accession No. ML082470533), Wolf Creek Nuclear Operating Corporation (the licensee) requested changes to the Technical Specifications (TSs) for the Wolf Creek Generating Station (WCGS). The proposed amendment would revise the TSs to reference only the Topical Report (TR) number and title in TS 5.6.6.b and delete reference to U.S. Nuclear Regulatory Commission (NRC) letter in existing TS 5.6.6.b.1. This would allow the use of currently approved TRs to determine the pressure and temperature (P/T) limits in the pressure and temperature limits report (PTLR) without having to submit an amendment to the Renewed Facility Operating License. The supplemental letter dated August 26, 2008, provided additional information that clarified the application, 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 as published in the *Federal Register* on August 26, 2008 (73 FR 50362).

The proposed amendment was submitted in accordance with Technical Specifications Task Force (TSTF) Improved Standard TS (ISTS) Change Traveler 419-A, Rev. 0, "Revise PTLR Definition and References in ISTS 5.6.6, RCS [Reactor Coolant System] PTLR" (Reference 2), and by extension, with the guidance developed by the NRC staff contained in Generic Letter (GL) 96-03, "Relocation of the Pressure Temperature Limit Curves and Low Temperature Overpressure Protection System Limits," dated January 31, 1996 (Reference 3).

TSTF-419-A provides for the relocation of P/T limit curves from the plant TSs to a PTLR, which remains under administrative control, and is incorporated by reference into the plant TSs. To implement TSTF-419-A, a licensee is required to use, and reference in the TSs, NRC-approved methodologies to develop the P/T limits. In this case, the licensee is using the methodology described in the NRC-approved TR Westinghouse Commercial Atomic Power (WCAP) 14040-A (Reference 4).

There are several NRC-approved revisions of WCAP-14040-A. The original, NRC-approved copy of WCAP 14040-A was issued as Revision 2, dated October 16, 1995. On February 27, 2004, the NRC staff issued a safety evaluation approving Revision 3 to WCAP-14040-A. The

Westinghouse Owner's Group subsequently reissued the approved TR as Revision 4 incorporating the NRC staff's safety evaluation and adding an Appendix B, "Correspondence with the NRC."

The requested change will remove a revision number from the PTLR methodology reference, thereby allowing the licensee to adopt subsequent revisions of the currently approved methodology without prior plant-specific review by the NRC. While the licensee stated in its application letter that it is not explicitly requesting approval to do so, it will be adopting Revision 4 of WCAP-14040-A in February 2009, provided that the NRC approves the licensee's request to implement TSTF-419A (Reference 1).

As described in the following subsections of this safety evaluation, the NRC staff evaluated this request as an administrative change. The NRC staff confirmed that the licensee's fluence calculations that support the current PTLR are adherent to Revision 2 of WCAP-14040-A. The licensee stated subsequently that it would be adopting Revision 4 of WCAP-14040-A. The NRC staff verified that the fluence calculations would also support the revised PTLR in accordance with WCAP-14040-A, Revision 4.

In its supplemental letter dated August 26, 2008 (Reference 6), the licensee stated that the fluence calculations that are currently planned to support the next revision to the licensee's PTLR are contained in WCAP-16028, "Analysis of Capsule X from Wolf Creek Nuclear Operating Corporation, Wolf Creek Reactor Vessel Radiation Surveillance Program" (Reference 7).

2.0 REGULATORY EVALUATION

Section 182a of the Atomic Energy Act requires applicants for nuclear power plant operating licenses to include TSs as part of the license. The TSs ensure the operational capability of structures, systems, and components that are required to protect the health and safety of the public. The NRC's regulatory requirements related to the content of the TSs are contained in Section 50.36 of Title 10 of the *Code of Federal Regulations* (10 CFR 50.36), which requires that the TS include items in the following specific categories: (1) safety limits, limiting safety systems settings, and limiting control settings; (2) limiting conditions for operation (LCO); (3) surveillance requirements; (4) design features; and (5) administrative controls. In accordance with 10 CFR 50.36(c)(5), administrative controls are the provisions relating to organization and management, procedures, recordkeeping, review and audit, and reporting necessary to assure operation of the facility in a safe manner. This amendment deals with the changes to administrative controls.

The NRC staff's review of the requested TS revision is also based on the NRC GL 96-03, "Relocation of the Pressure Temperature Limit Curves and Low Temperature Overpressure Protection System Limits," dated January 31, 1996. The subject GL allows licensees to relocate the P/T curves from their plant TSs to a PTLR or similar licensee-controlled document. The low temperature overpressure protection (LTOP) system limits were also allowed to be relocated to the same document. The methodology used to determine the P/T and LTOP system limits must comply with the specific requirements of Appendices G and H to 10 CFR Part 50, be documented in an NRC-approved topical report or an NRC-approved plant-specific submittal, and be incorporated by reference into the TSs. Subsequent changes in the methodology must

be approved by a license amendment. At WCGS, the cold overpressure mitigation system (COMS) is the plant LTOP system. Attachment 2 to GL 96-03 provides the complete regulatory basis for the requested TS change.

The licensee has implemented GL 96-03 and currently references a PTLR as an administrative requirement. However, the current PTLR reference incorporates a revision number, which means that a PTLR revision using an updated version of the same methodology would require a license amendment. TSTF-419-A provides the justification for removing the revision number from the PTLR references:

> The revision to ITS 5.6.6 to allow the Topical Reports to be identified by number and title would allow licensees to use current Topical Reports to support limits in the PTLR without having to submit an amendment to facility operating license every time the Topical Report is revised. The PTLR would provide specific information identifying the particular approved Topical Reports used to determine the P/T limits or LTOP [Low Temperature Overpressure Protection] System limits. This still provides the assurance that only the approved versions of the referenced Topical Reports will be used for the determination of the P/T limits or LTOP System limits since the complete citation will be provided in the PTLR.

The guidance contained in GL 96-03 provides three separate actions to be completed by the licensee to allow relocating P/T limit curves to a licensee-controlled document. As stated in GL 96-03, the licensee must:

(1) Reference a methodology approved by NRC in its TS,
(2) Develop a PTLR or a similar document that contain the figures, values, parameters, and any explanation necessary, and
(3) Modify the applicable sections of the TS accordingly.

GL 96-03 requires that the methodology shall describe how the neutron fluence is calculated, and the criterion references Regulatory Guide (RG) 1.190, "Calculational and Dosimetry Methods for Determining Pressure Vessel Neutron Fluence" (Reference 5)[1].

There are several NRC-approved methods that a licensee may reference for developing a PTLR, and would be acceptable for TSTF-419A implementation. Not all of these methods specifically address the fluence criterion of GL 96-03. The NRC staff has confirmed previously, however, that WCAP-14040-A addresses fluence in a manner that adheres to the guidance contained in RG 1.190 (for Revision 4), or its predecessor draft regulatory guide (Revision 2).

[1]GL 96-03 specifically states: "The methodology shall describe how the neutron fluence is calculated (reference new Regulatory Guide when it is issued)." At the time the NRC wrote GL 96-03, Regulatory Guide 1.190 had yet not been issued; however, RG 1.190 is the applicable Regulatory Guide that describes the attributes of an acceptable pressure vessel fluence calculation methodology.

In its letter dated July 10, 2008, the licensee stated that it plans to adopt Revision 4 of WCAP-14040-A. The NRC staff reviewed fluence calculations that support both the existing and the planned PTLR to determine the following with regard to both calculations:

(1) The fluence calculations are reasonably consistent with the methods described in Revisions 2 and 4 of WCAP-14040-A; and

(2) The fluence calculations adhere to the guidance contained in RG 1.190.

3.0 TECHNICAL EVALUATION

3.1 Technical Specification Changes

The staff reviewed the proposed changes for compliance with 10 CFR 50.36 and agreement with the precedent as established in NUREG-1431, "Standard Technical Specifications, Westinghouse Plants." In general, licensees cannot justify TS changes solely on the basis of adopting the model Standard Technical Specifications (STSs). Licensees may revise the TSs to adopt the ISTS format and content provided that the plant-specific review supports a finding of continued adequate safety because: (1) the change is editorial, administrative, or provides clarification (i.e., no requirements are materially altered); (2) the change is more restrictive than the licensee's current requirement; or (3) the change is less restrictive than the licensee's current requirement, but nonetheless still affords adequate assurance of safety when judged against current regulatory standards.

In general, there are two classes of changes to TSs: (1) changes needed to reflect contents of the design basis (TSs are derived from the design basis), and (2) voluntary changes to take advantage of the evolution in policy and guidance as to the required content and preferred format of TSs over time. This amendment deals with the second class of change, namely, administrative changes that reflect the current configuration of the plant.

3.1.1 Proposed Changes

The licensee has requested that the WCGS TS be modified to remove the TR revision number from the PLTR methodology reference in TS 5.6.6.b consistent with TSTF-419-A. TSTF-419-A provides for the relocation of P/T limit curves from the plant TS to a PTLR, which remains under administrative control, and is incorporated by reference into the plant TS. The licensee relocated WCGS P/T limit curves to the PTLR under Amendment No. 130, dated December 7, 1999. The requested change to remove the TR revision number would allow the licensee to adopt subsequent revisions of the currently approved methodology to update their PTLR methodology, without prior NRC staff review and a license amendment. The NRC staff has, however, already inherently endorsed providing this degree of flexibility to licensees by permitting the use of the NRC-approved TSTF-419-A format.

The staff's review of the licensee's original implementation of a PTLR at WGCS in 1999 (under GL 96-03) under Amendment No. 130 provides adequate assurance regarding the licensee's ability to implement a PTLR methodology and produce a PTLR which meets NRC requirements, as identified in GL 96-03. Hence, the licensee's conversion of the format of WCGS TS 5.6.6 from the GL 96-03 format to the TSTF-419-A format raises no new technical issues requiring

detailed staff review. Based on the licensee's submittal dated July 10, 2008 (Reference 1), the NRC staff concludes that the proposed amendment meets the criteria for an administrative change to the facility TS.

The specific proposed changes to the WCGS TS are as follows:

Change to TS 1.1, Definitions

- The definition of PTLR is revised to delete the reference to TSs LCO 3.4.3 regarding P/T limits and LCO 3.4.12 regarding the LTOP system.

Changes to TS 5.6.6, Reactor Coolant System (RCS) PRESSURE AND TEMPERATURE LIMITS REPORT (PTLR)

- The addition of "LTOP arming" into TS 5.6.6.a as an RCS P/T limit established and documented in the PTLR and the deletion of "and Cold Overpressure Mitigation System" from TS 5.6.6.b,

- The deletion of TS 5.6.6.b.1, which references NRC letter dated December 2, 1999, "Wolf Creek Generating Station, Acceptance for Referencing of Pressure Temperature Limits Report (TAC No. MA4572)," and

- Change to TS 5.6.6.b.2, renumbered as new TS 5.6.6.b.1, and deleting the reference to the document date for NRC-approved TR WCAP-14040-A.

3.1.2 Evaluation of the Proposed TS Changes

Change to TS 1.1, Definitions

Consistent with NUREG-1431, ISTS format, the definition of PTLR is revised to delete the reference to the TS LCO 3.4.3 and TS LCO 3.4.12.

The current definition of the PTLR identifies the TSs in which the P/T limits are addressed (TS LCO 3.4.3 and TS LCO 3.4.12). TS 5.6.6.a also identifies the individual specifications that address RCS P/T limits (TSs 3.4.3 and 3.4.12). The proposed change to the definition eliminates the duplication between the definition of PTLR and TS 5.6.6.a. The PTLR definition still retains the reference to TS 5.6.6.

The proposed change to TS 1.1 is administrative and editorial in nature. The change is consistent with the requirements of 10 CFR 50.36 and with the content and format of NUREG-1431. Based on the above, the NRC staff concludes that the proposed changes to TS 1.1 are acceptable.

Changes to TS 5.6.6, Reactor Coolant System (RCS) PRESSURE AND TEMPERATURE LIMITS REPORT (PTLR)

Consistent with NUREG-1431, the proposed change adds "LTOP arming" into TS 5.6.6.a and deletes "and Cold Overpressure Mitigation System" from TS 5.6.6.b. The proposed change

assures that specific LTOP arming limits are established and documented in the PTLR. The PTLR remains as a reference document in TS 3.4.12, "Low Temperature Overpressure Protection System." The "Cold Overpressure Mitigation System" in TS 5.6.6.b is not required due to the addition of "LTOP arming" into TS 5.6.6.a since these systems are synonymous.

The licensee proposed to delete TS 5.6.6.b.1 in its entirety, which references an NRC letter dated December 2, 1999. In its letter dated July 10, 2008, the licensee states that the document and its supporting safety evaluation were the basis for the original relocation of the PTLR and LTOP System/Cold Overpressure Mitigation System (COMS) curves from the TSs and reference to this document is not required in specifying the analytical methods used to determine the limits in TS 5.6.6.b.

Current TS 5.6.6.b.2 provides reference to the NRC-approved TR by number and the document date. This change deletes the revision date and the "NP" (Non-Proprietary) designation from the TR number. Additionally, TS 5.6.6.b.2 is renumbered as new TS 5.6.6.b.1 due to the proposed deletion of the current TS 5.6.6.b.1.

Consistent with TSTF-419-A, the proposed change to TS 5.6.6.b.2 allows the NRC-approved TR to be identified by number and title. This change allows the licensee to use a current TR to support limits identified in the PTLR, without having to submit an amendment to the renewed facility operating license if the TR is revised. The PTLR would provide the specific information identifying the particular approved TR used to determine the P/T limits or LTOP System limits. This change continues to provide assurance that only NRC-approved versions of the referenced TR will be used for the determination of the P/T limits or LTOP System limits. The requirements to operate within the limits in the PTLR are specified in, and controlled by, the WCGS TSs. The proposed change does not alter the requirements associated with the review and approval of the methodology or the TS requirements to operate within limits specified in the PTLR.

Hence, the proposed changes to TSs 5.6.6.a, 5.6.6.b, 5.6.6.b.1, and 5.6.6.b.2 are administrative and are consistent with the requirements of 10 CFR 50.36 and with the content and format of NUREG-1431. Based on the above, the NRC staff concludes that the proposed changes to TSs 5.6.6.a, 5.6.6.b, 5.6.6.b.1, and 5.6.6.b.2 are acceptable.

3.2 Acceptability of the Fluence Methodology

The licensee's fluence calculations supporting the current PTLR are described in WCAP-15078, "Analysis of Capsule V from Wolf Creek Nuclear Operating Corporation Wolf Creek Reactor Vessel Radiation Surveillance Program" (Reference 8), and shown in the third column of the following table. The fluence values were obtained as described in WCAP-14040-A, Revision 2 (as noted at the top of Column 3), and are also fully adherent to the guidance contained in RG 1.190. Hence, the current PTLR is based on fluence calculations described by NRC-approved methodologies as described by WCAP-14040A, and as such, the calculations are acceptable for implementation of TSTF-419A.

According to WCAP-16028, these calculations were based on Evaluated Nuclear Data File (ENDF)/B-VI derived nuclear cross-section data, and are consistent with the NRC-approved methodology described in WCAP-14040-A, Revision 2. Although the licensee's original application (Reference 1) stated that the licensee would be using the PTLR methodology

described in Revision 4 to WCAP-14040-A, the fluence calculations described in WCAP-16028 are, in fact, a hybrid of the techniques described in Revision 2 and Revision 4 to WCAP-14040-A. The NRC staff notes, however, that the calculational technique employed in WCAP-16028 differs slightly from that described in WCAP-14040-A, Revision 2.

The following table depicts the differences in the fluence calculation technique between WCAP-14040-A, Revision 2, and WCAP-16028. For further comparison, the technique described in WCAP-14040-A, Revision 4 is also shown, as are the minimum recommended approaches discussed in RG 1.190.

Since the licensee's letter dated August 26, 2008, states that the previous fluence calculations were performed using the WCAP-14040-A, Revision 2, methodology, the NRC staff compared 35 Effective Full Power Years (EFPYs) fluence projections for WCGS from the current Capsule X to the previous capsule analysis referenced by the licensee.

Approach	**WCAP-16028**	**WCAP-14040-A, Revision 2**	**WCAP-14040-A, Revision 4**	**RG 1.190 Recommendation**
Transport Code	DORT	DORT	DORT/TORT	DORT
Nuclear Data File	ENDF/B-VI	ENDF/B-VI	ENDF/B-VI	ENDF/B-VI
Cross Section Library	BUGLE-96	BUGLE-93	BUGLE-96	Based on ENDF/B-VI
Anisotropic Scattering	P_5 Legendre Expansion	P_3 Legendre Expansion	P_5 Legendre Expansion	P_3 Legendre Expansion
Angular Quadrature	(r) and (r,z): S_{16} (r,θ): S_8	S_8	S_{16}	S_8
35 EFPY Fluence, 15-degree Azimuth[2]	1.57E19	1.83E19	~16-percent difference	
35 EFPY Fluence, 45-degree Azimuth	2.23E19	2.13E19	~5-percent difference	

The fluence calculation approach used in WCAP-16028 is a hybrid of that used in the Revisions 2 and 4 of WCAP-14040-A. The fluence calculations described by WCAP-16028 are

[2] The 35 EFPY fluence projection comparison was obtained by comparing the Capsule X and Capsule V fluence calculations at the 15-degree azimuth. The Capsule V fluence projections were calculated using methods more closely aligned with WCAP-14040-A, Revision 2, as described in WCAP-15078, "Analysis of Capsule V from Wolf Creek Nuclear Operating Corporation Wolf Creek Reactor Vessel Radiation Surveillance Program" (Reference 8). The Capsule V fluence projections end at 35 EFPY, and while there is not an explicit fluence calculation for 35 EFPY contained in the Capsule X report, the NRC staff linearly interpolated the fluence values from 32 EFPY and 40 EFPY for comparison. The NRC staff selected the 15-degree azimuth for comparison because, while it is not a point of limiting exposure, it is the reported point with the most significant deviation between the two projections.

based on an updated cross-section library, use an improved anisotropic scattering approximation, and feature a finer angular quadrature than the method described in WCAP-14040-A, Revision 2.

There is some observable difference between the two fluence projections shown in the table above. The difference is, however, within the stated uncertainty of both calculations. In consideration of these uncertainties, the difference between the two is negligible. Also, the table illustrates that the WCAP-16028 fluence calculations adhere to the guidance in RG 1.190.

Based on the above, the NRC staff concludes that the fluence calculations that support both the current PTLR and the next revision to the PTLR are acceptably consistent with the fluence methodology presented in either revision of WCAP-14040-A. Therefore, the NRC staff concludes that the fluence calculations supporting the upcoming PTLR revision are acceptable for implementation of the guidance contained in TSTF-419-A.

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 the requirements with respect to use of a facility component located within the restricted area as defined in 10 CFR Part 20. The 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 published in the *Federal Register* on August 26, 2008 (73 FR 50362). 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.

7.0 REFERENCES

1. T. J. Garrett, Wolf Creek Nuclear Operating Corporation, letter to U.S. Nuclear Regulatory Commission, "Application to Revise Technical Specification 5.6.6, 'Reactor Coolant System Pressure and Temperature Limits Report,'" dated July 10, 2008 (ADAMS Accession No. ML082000124).

2. Technical Specifications Task Force (TSTF) Improved Standard TS Change Traveler 419-A, Revision 0, "Revise PTLR Definition and References in ISTS 5.6.6, RCS PTLR," September 16, 2001 (ADAMS Accession No. ML012690234).

3. U.S. Nuclear Regulatory Commission, "Relocation of the Pressure Temperature Limit Curves and Low Temperature Overpressure Protection System Limit," Generic Letter 96-03, dated January 31, 1996 (ADAMS Accession No. ML031110004).

4. Westinghouse Electric Company, Westinghouse Commercial Atomic Power (WCAP)-14040-A, Revisions 2 and 4, "Methodology Used to Develop Cold Overpressure Mitigating System Setpoints and RCS Heatup and Cooldown Limit Curves" (WCAP-14040-A, Revision 4, dated May 1, 2004, ADAMS Accession No. ML050120209).

5. U.S. Nuclear Regulatory Commission, "Calculational and Dosimetry Methods for Determining Pressure Vessel Neutron Fluence," Regulatory Guide 1.190, March 2001 (ADAMS Accession No. ML010890301).

6. T. J. Garrett, Wolf Creek Nuclear Operating Corporation, letter to U.S. Nuclear Regulatory Commission, "Submittal of Supplemental Information on Proposed Changes to Technical Specifications," dated August 26, 2008 (ADAMS Accession No. ML082470533).

7. Westinghouse Electric Company, WCAP-16028, Revision 0, March, 2003, "Analysis of Capsule X from Wolf Creek Nuclear Operating Corporation Wolf Creek Reactor Vessel Radiation Surveillance Program," Enclosure to WCNOC letter dated April 8, 2003 (ADAMS Accession No. ML031060076).

8. Westinghouse Electric Company, WCAP-15078, dated September 30, 1998, "Analysis of Capsule V from Wolf Creek Nuclear Operating Corporation Wolf Creek Reactor Vessel Radiation Surveillance Program."

Principal Contributors: Benjamin Parks
Gerald Waig

Date: January 27, 2009

January 27, 2009

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: APPLICATION TO REVISE TECHNICAL SPECIFICATION 5.6.6, REACTOR COOLANT SYSTEM PRESSURE AND TEMPERATURE LIMITS REPORT (TAC NO. MD9217)

Dear Mr. Muench:

The U.S. Nuclear Regulatory Commission (the Commission) has issued the enclosed Amendment No. 180 to Renewed 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 July 10, 2008, as supplemented by letter dated August 26, 2008.

The amendment revises TS 5.6.6, "Reactor Coolant System (RCS) PRESSURE AND TEMPERATURE LIMITS REPORT (PTLR)." The change will remove a revision number from the PTLR methodology reference, thereby allowing the licensee to adopt subsequent revisions of the currently approved methodology without having to submit an amendment to the Renewed Facility Operating License.

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/
Balwant K. Singal, 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. 180 to NPF-42
2. Safety Evaluation

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RidsOgcRp Resource
RidsRgn4MailCenter Resource
G. Waig, NRR/DIRS/ITSB
B. Parks, NRR/DSS/SRXB

ADAMS Accession No.: ML083430224 ***See previous concurrence**

OFFICE	NRR/LPL4/PE	NRR/LPL4/PM	NRR/LPL4/LA	NRR/SRXB/BC
NAME	NDiFrancesco*	BSingal	JBurkhardt*	GCranston*
DATE	12/29/08	1/27/09	12/24/2008	12/30/08
OFFICE	NRR/ITSB/BC	OGC	NRR/LPL4/BC	NRR/LPLR/PM
NAME	RElliott*	MSimon*	MMarkley	BSingal
DATE	12/30/08	1/22/09	1/27/09	1/27/09

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