



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

November 4, 2022

Mr. Cleveland Reasoner  
Chief Executive Officer and  
Chief Nuclear Officer  
Wolf Creek Nuclear Operating Corporation  
P.O. Box 411  
Burlington, KS 66839

SUBJECT: WOLF CREEK GENERATING STATION, UNIT 1 - ISSUANCE OF  
AMENDMENT NO. 234 RE: DIESEL GENERATOR COMPLETION TIME  
EXTENSION FOR TECHNICAL SPECIFICATION 3.8.1, "AC SOURCES –  
OPERATING" (EPID L-2021-LLA-0173)

Dear Mr. Reasoner:

The U.S. Nuclear Regulatory Commission (the Commission) has issued the enclosed Amendment No. 234 to Renewed Facility Operating License No. NPF-42 for the Wolf Creek Generating Station, Unit 1. The amendment consists of changes to the Technical Specifications (TSs) in response to your application dated September 29, 2021, as supplemented by letters dated April 13, 2022, and July 12, 2022.

The amendment revises TS 3.8.1, "AC [alternating current] Sources – Operating," by removing the requirements associated with the Sharpe Station generator sets and extending the completion time in Required Action B.4.1 for one inoperable diesel generator from 72 hours to 14 days based upon the availability of a supplemental AC power source (i.e., station blackout diesel generator system). The amendment also deletes the license conditions associated with Amendment No. 163.

A copy of the related Safety Evaluation is enclosed. Notice of Issuance will be included in the Commission's monthly *Federal Register* notice.

Sincerely,

***/RA/***

Samson S. Lee, Project Manager  
Plant Licensing Branch IV  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-482

Enclosures:

1. Amendment No. 234 to NPF-42
2. Safety Evaluation

cc: Listserv



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

WOLF CREEK NUCLEAR OPERATING CORPORATION

WOLF CREEK GENERATING STATION, UNIT 1

DOCKET NO. 50-482

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 234  
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, Unit 1 (the facility) Renewed Facility Operating License No. NPF-42 filed by the Wolf Creek Nuclear Operating Corporation (the Corporation), dated September 29, 2021, as supplemented by letters dated April 13, 2022, and July 12, 2022, 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 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. NPF42 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. 234, and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No 229, 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.

The license is also amended by changes as indicated in the attachment to this license amendment, and paragraph 2.C.(16) of Renewed Facility Operating License No. NPF-42 is hereby amended to read as follows:

(16) Additional conditions

The Additional Conditions contained in Appendix D, as revised through Amendment No. 234, 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 90 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Jennifer L. Dixon-Herrity, Chief  
Plant Licensing Branch IV  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

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

Date of Issuance: November 4, 2022

ATTACHMENT TO LICENSE AMENDMENT NO. 234 TO  
RENEWED FACILITY OPERATING LICENSE NO. NPF-42  
WOLF CREEK GENERATING STATION, UNIT 1  
DOCKET NO. 50-482

Replace the following pages of Renewed Facility Operating License No. NPF-42 and the 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.

Renewed Facility Operating License

<u>REMOVE</u>	<u>INSERT</u>
4	4
7	7

Technical Specifications

<u>REMOVE</u>	<u>INSERT</u>
3.8-2	3.8-2
3.8-3	3.8-3
3.8-4	3.8-4
3.8-6	3.8-6

Appendix D – Additional Conditions

<u>REMOVE</u>	<u>INSERT</u>
3	3

- (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. 234, and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 229, 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
- Evergy Kansas South, Inc. and Evergy Metro, Inc. 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.

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\*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.

(16) Additional conditions

The Additional Conditions contained in Appendix D, as revised through Amendment No. 234, are hereby incorporated into this license. Wolf Creek Nuclear Operating Corporation shall operate the facility in Accordance with the Additional Conditions.

- D. Exemptions from certain requirements of Appendix J to 10 CFR Part 50, and from a portion of the requirements of General Design Criterion 4 of Appendix A to 10 CFR Part 50, are described in the Safety Evaluation Report. These exemptions are authorized by law and will not endanger life or property or the common defense and security and are otherwise in the public interest. Therefore, these exemptions are hereby granted pursuant to 10 CFR 50.12. With the granting of these exemptions the facility will operate, to the extent authorized herein, in conformity with the application, as amended, the provisions of the Act, and the rules and regulations of the Commission.
- E. The licensee shall fully implement and maintain in effect all provisions of the Commission-approved physical security, training and qualification, and safeguards contingency plans including amendments made pursuant to provisions of the Miscellaneous Amendments and Search Requirements revisions to 10 CFR 73.55 (51 FR 27817 and 27822) and to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The set of combined plans, which contains Safeguards Information protected under 10 CFR 73.21, is entitled: "Wolf Creek Security Plan, Training and Qualification Plan, and Safeguard Contingency Plan," and was submitted on May 17, 2006.
- The licensee shall fully implement and maintain in effect all provisions of the Commission-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The licensee's CSP was approved by License Amendment No. 197, as supplemented by changes approved by License Amendment No. 202, License Amendment No. 210, and License Amendment No. 217.
- F. Deleted per Amendment No. 141.
- G. The licensees shall have and maintain financial protection of such type and in such amounts as the Commission shall require in accordance with Section 170 of the Atomic Energy Act of 1954, as amended, to cover public liability claims.
- H. The Updated Safety Analysis Report (USAR) supplement, as revised, submitted pursuant to 10 CFR 54.21(d), shall be included in the next scheduled update to the USAR required by 10 CFR 50.71(e)(4), as appropriate, following the issuance of this renewed operating license. Until that update is complete, WCNOC may make changes to the programs and activities described in the supplement without prior Commission approval, provided that WCNOC evaluates such changes pursuant to the criteria set forth in 10 CFR 50.59 and otherwise complies with the requirements in that section.

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	<p>Declare required feature(s) with no offsite power available inoperable when its redundant required feature(s) is inoperable.</p> <p><u>AND</u></p> <p>A.3 Restore offsite circuit to OPERABLE status.</p>	<p>24 hours from discovery of no offsite power to one train concurrent with inoperability of redundant required feature(s)</p> <p>72 hours</p> <p><u>AND</u></p> <p>17 days from discovery of failure to meet LCO</p>
B. One DG inoperable.	<p>B.1 Perform SR 3.8.1.1 for the offsite circuit(s).</p> <p><u>AND</u></p> <p>B.2 Verify the required Station Blackout (SBO) DGs are available.</p> <p><u>AND</u></p>	<p>1 hour</p> <p><u>AND</u></p> <p>Once per 8 hours thereafter</p> <p>1 hour</p> <p><u>AND</u></p> <p>Once per 8 hours thereafter</p> <p>(continued)</p>



ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. (continued)	<p>B.3 -----NOTE----- In MODES 1, 2, and 3, the turbine driven auxiliary feedwater pump is considered a required redundant feature. -----</p> <p>Declare required feature(s) supported by the inoperable DG inoperable when its required redundant feature(s) is inoperable.</p>	4 hours from discovery of Condition B concurrent with inoperability of redundant required feature(s)
	<p><u>AND</u></p>	
	<p>B.4.1 Determine OPERABLE DG is not inoperable due to common cause failure.</p>	24 hours
	<p><u>OR</u></p>	
<p>B.4.2 -----NOTE----- The Required Action of B.4.2 is satisfied by the automatic start and sequence loading of the DG. -----</p>		
<p>Perform SR 3.8.1.2 for OPERABLE DG.</p>	24 hours	
<p><u>AND</u></p>		

(continued)



ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>G. One load shedder and emergency load sequencer inoperable.</p>	<p>G.1 Declare affected DG and offsite circuit inoperable.</p> <p><u>AND</u></p> <p>G.2 Restore load shedder and emergency load sequencer to OPERABLE status.</p>	<p>Immediately</p> <p>12 hours</p>
<p>H. Required Action and associated Completion Time of Condition A, C, D, E, F, or G not met.</p> <p><u>OR</u></p> <p>Required Actions B.1, B.3, B.4.1, B.4.2, and B.5 and associated Completion Time not met.</p>	<p>H.1 Be in MODE 3.</p> <p><u>AND</u></p> <p>H.2 Be in MODE 5.</p>	<p>6 hours</p> <p>36 hours</p>
<p>I. Three or more required AC sources inoperable.</p>	<p>I.1 Enter LCO 3.0.3.</p>	<p>Immediately</p>

Amendment Number	Additional Condition	Implementation Date
123	For SRs that existed prior to this amendment whose intervals of performance are being extended, the first extended surveillance interval begins upon completion of the last surveillance performed prior to implementation of this amendment.	This amendment shall be implemented by December 31, 1999.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 234 TO

RENEWED FACILITY OPERATING LICENSE NO. NPF-42

WOLF CREEK NUCLEAR OPERATING CORPORATION

WOLF CREEK GENERATING STATION, UNIT 1

DOCKET NO. 50-482

1.0 INTRODUCTION

By application dated September 29, 2021 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML21272A369), as supplemented by letters dated April 13, 2022, and July 12, 2022 (ML22103A123 and ML22193A323, respectively), Wolf Creek Nuclear Operating Corporation (the licensee) requested changes to the Technical Specifications (TSs) for Wolf Creek Generating Station, Unit 1 (Wolf Creek or WCGS).

The proposed changes would revise TS 3.8.1, "AC [alternating current] Sources – Operating," by removing the requirements associated with the Sharpe Station generator sets (gensets) and extending the completion time (CT) in Required Action B.4.1, "Restore DG [Diesel Generator] to Operable Status," for one inoperable DG from 72 hours to 14 days based upon the availability of a supplemental AC power source (i.e., station blackout (SBO) DG System).

The licensee also proposed to revise the Renewed Facility Operating License No. NPF-42, Appendix D, "Additional Conditions," by deleting the license conditions associated with Amendment No. 163 dated April 26, 2006 (ML053490174).

The supplemental letters dated April 13, 2022, and July 12, 2022, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the U.S. Nuclear Regulatory Commission (NRC or the Commission) staff's original proposed no significant hazards consideration determination as published in the *Federal Register* on December 28, 2021 (86 FR 73821).

2.0 REGULATORY EVALUATION

2.1 Electrical Power Systems Description

In section 3.1.2, "Onsite Power System," of attachment I to the license amendment request (LAR), the licensee described the onsite power system. The system receives power from two independent and redundant sources: a circuit from the switchyard which supplies engineered

safety features (ESF) transformer XNB01 and a circuit that supplies power to the startup transformer that feeds two 13.8 kilovolt (kV) busses and the ESF transformer XNB02. The ESF transformers supply the 4.16 kV Class 1E busses. The onsite standby power sources are DGs A and B which supply 4.16 kV busses NB01 and NB02, respectively. The DGs are capable of supplying essential loads and safely shutting down the reactor.

The licensee indicated that the Wolf Creek onsite AC power supply includes an SBO DG system. In section 2.2, "Reason for the Proposed Change," of attachment I to the LAR, the licensee stated that the SBO DG system is provided to improve the plant safety resulting in additional margin in the Mitigating Systems Performance Index (MSPI)/Probabilistic Risk Assessment (PRA). The SBO DG system has the capacity to supply either train of safety-related loads, but it is not credited for coping with an SBO in accordance with the SBO rule in Title 10 of the *Code of Federal Regulations* (10 CFR), Section 50.63, "Loss of all alternating current power."

By letter dated April 26, 2006, the NRC issued Amendment No. 163 to Wolf Creek to increase the CT and add requirements on the generator sets at the Sharpe Station in TS 3.8.1 as a backup to the DGs.

## 2.2 Licensee Proposed Changes

### 2.2.1 Licensee Proposed TS 3.8.1 Changes

The limiting condition for operation (LCO) statement for TS 3.8.1 requires, among other things, two OPERABLE DGs capable of supplying the onsite class 1E power distribution subsystems. The ACTIONS table in TS 3.8.1 contains Conditions, Required Actions, and associated CTs for instances when the LCO is not met. The licensee proposed changes to Conditions, Required Actions, and CTs in the ACTIONS table of TS 3.8.1 for situations when a single DG is inoperable. The changes would remove requirements related to the Sharpe Station generator sets and add requirements related to SBO DGs to reflect the proposed change in licensing basis to credit the SBO DG system as a supplemental source of AC power when a single DG is inoperable.

The licensee's proposed TS changes are provided in attachment II, "Revised WCGS Technical Specification 3.8.1 Pages (Markup)," to the licensee's July 12, 2022, supplement. The licensee proposed to revise TS 3.81, Conditions A, B, C, and H to support the 14-day extension request.

Existing Condition A describes a situation where one offsite circuit is inoperable. Required Action A.3 requires restoration of the offsite circuit to operable status within a CT of "72 hours AND 6 days from discovery of failure to meet LCO." A NOTE which states: "A Completion Time of 10 days from discovery of failure to meet the LCO may be used with the 7-day Completion Time of Required Action B.4.2.2 for an inoperable DG." appears above the CT for Required Action A.3. The licensee proposed deleting the NOTE above the CT and proposed changing the CT to "72 hours AND 17 days from discovery of failure to meet LCO."

Existing Condition B describes a situation where one DG is inoperable. The licensee proposed to replace existing Required Action B.2 with new Required Action B.2 which would require verification that SBO DGs are available with a CT of "1 hour AND Once per 8 hours thereafter." The licensee proposed inserting a logical AND after new Required Action B.2 and renumbering existing Required Action B.2 to B.3 as well as renumbering existing Required Actions B.3.1, B.3.2 and B.4.1 to Required Actions B.4.1, B.4.2 and B.5.1, respectively. The licensee proposed

changing the CT for the required action renumbered Required Action B.5.1 from “72 hours AND 6 days from discovery of failure to meet LCO” to “14 days AND 17 days from discovery of failure to meet LCO.” The licensee also proposed to delete existing Required Actions B.4.2.1 and B.4.2.2 as well as the logical OR separating B.4.2.1 and B.4.2.2 from the other required actions for Condition B.

Existing Condition C describes the situation where existing Required Action B.4.2.1 and its associated CT are not met. Existing Required Action C.1 requires restoring the DG to OPERABLE status with a CT of 72 hours. The licensee proposed deleting existing Condition C and replacing it with a Condition stating: “Required Action B.2 and associated Completion Time not met.” The licensee proposed adding three new Required Actions C.2 through C.4, separated by logical OR connectors. Required Action C.1 would continue to require restoring the DG to OPERABLE status with a CT of 72 hours from Condition B entry. New Required Action C.2 would require restoring the DG to OPERABLE status with a CT of 24 hours from Condition C entry. New Required Action C.3 would require restoring the required SBO DGs to available status with a CT of 72 hours from Condition B entry. New Required Action C.4 would require restoring the required SBO DGs to available status with a CT of 24 hours from Condition C entry. Both CTs for Required Actions C.2 and C.4 would be preceded by a NOTE which would state: “Only allowed once within any given extended DG Completion Time.”

The second portion of existing Condition H states “Required Action B.1, B.2, B.3.1, B.3.2, B.4.1, and B.4.2.2 and associated Completion Time not met.” The licensee proposed changing statement to: “Required Action B.1, B.3, B.4.1, B.4.2, and B.5 and associated Completion Time not met.”

## 2.2.2 Licensee Proposed License Condition Changes

With the issuance of Amendment No. 163, three license conditions were added to Appendix D of the Wolf Creek operating license associated with the Sharpe Station generator sets. The licensee proposed to delete these license conditions.

## 2.3 Reason for Proposed Changes

In Section 2.2 of attachment I to the LAR, the licensee stated that TS changes are requested to provide time to perform planned preventative maintenance and surveillance testing to ensure DG continued reliability and availability. The proposed changes provide flexibility to resolve DG deficiencies and avoid unplanned plant shutdowns and transients, along with the challenges to safety systems.

## 2.4 Regulatory Requirements

The Commission’s regulatory requirements related to the content of the TSs are set forth in 10 CFR 50.36, “Technical specifications.” The regulation under 10 CFR 50.36(c)(2) requires that TSs contain LCOs, which are “the lowest functional capability or performance levels of equipment required for safe operation of the facility. When a limiting condition for operation of a nuclear reactor is not met, the licensee shall shut down the reactor or follow any remedial action permitted by the technical specifications until the [LCO] can be met.” Typically, the TSs require restoration of equipment operability in a timeframe commensurate with its safety significance, along with other engineering considerations. The regulation under 10 CFR 50.36(b) requires, in part, that “the technical specifications will be derived from the analyses and evaluation included in the safety analysis report, and amendments thereto....”

Appendix A to 10 CFR Part 50, "General Design Criteria for Nuclear Power Plants," General Design Criterion (GDC) 17, "Electric power systems," requires, in part, that:

An onsite electric power system and an offsite electric power system shall be provided to permit functioning of structures, systems, and components important to safety. The safety function for each system (assuming the other system is not functioning) shall be to provide sufficient capacity and capability to assure that (1) specified acceptable fuel design limits and design conditions of the reactor coolant pressure boundary are not exceeded as a result of anticipated operational occurrences and (2) the core is cooled and containment integrity and other vital functions are maintained in the event of postulated accidents.

The onsite electric power supplies, ... shall have sufficient independence, redundancy, and testability to perform their safety functions assuming a single failure.

## 2.5 Regulatory Guidance

The NRC staff's guidance for the review of TSs is in Chapter 16, "Technical Specifications," of NUREG-0800, Revision 3, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR [Light-Water Reactor] Edition," dated March 2010 (ML100351425). As described therein, as part of the regulatory standardization effort, the NRC staff has prepared Standard Technical Specifications (STS) for each of the LWR nuclear designs. The applicable STS for Wolf Creek are contained in NUREG-1431, "Standard Technical Specifications, Westinghouse Plants," Revision 5.0, Volume 1, "Specifications" and Volume 2, "Bases," dated September 2021 (ML21259A155 and ML21259A159, respectively). Chapter 16 of NUREG-0800 specifies that the NRC staff review whether the content and format of proposed TSs conform to the applicable STS. Where TS provisions depart from the reference TSs, the NRC staff determines whether proposed differences are justified by uniqueness in plant design or other considerations.

NUREG-0800, Branch Technical Position (BTP) 8-8, "Onsite (Emergency Diesel Generators) and Offsite Power Sources Allowed Outage Time Extensions," dated February 2012 (ML113640138), provides guidance from a deterministic perspective in reviewing amendment requests to extend allowed outage times (AOTs) for the DGs and offsite power sources to allow the licensee time to perform online maintenance, both planned and unplanned. The guidance in BTP 8-8 recommends that a supplemental power source, capable of supplying loss of offsite power (LOOP) loads to bring the unit to a cold shutdown, be provided as a backup to a single inoperable emergency DG, in case of a LOOP event concurrent with a failure of the remaining DG during the extended CT. The staff review evaluates the request from both deterministic and risk insight perspectives.

The guidance in NUREG-1764, "Guidance for the Review of Changes to Human Actions," Revision 1, dated September 2007 (ML072640413), describes how the NRC staff should assess changes to manual operator actions and assess the safety significance of the actions. It provides direction to determine the level of human factors review necessary and provides the correlated acceptance criteria with risk insights.



### 3.0 TECHNICAL EVALUATION

#### 3.1 Electrical Engineering

##### 3.1.1 TS 3.8.1 – Proposed Revised Conditions B and C – 14-day Extended Completion for Emergency DG

###### 3.1.1.1 Defense-in-Depth Considerations

In section 3.8, “Deterministic Assessment of Proposed DG Completion Time Extension,” of Attachment I to the LAR, the licensee stated, in part:

Each DG is connected exclusively to a single 4.16-kV engineered safety feature bus for one load group. The load groups are redundant and have similar safety related equipment. Each load group is adequate to satisfy minimum engineered safety features demand caused by a LOCA [loss-of-coolant accident] and/or loss of preferred power supply. Since the DGs can accommodate a single failure, extending the Completion Time for an inoperable DG has no impact on the system design basis. Safety analyses acceptance criteria, as provided in the Updated Safety Analysis Report (USAR), are not impacted by the proposed changes. AC power sources credited in the accident analyses will remain the same.

The NRC staff notes that during the maintenance of one emergency DG, the redundant emergency DG will be available to supply essential loads required to shut down the reactor and maintain it in a safe shutdown condition (assuming no failure in the redundant train), in the event of a design-basis event.

The licensee indicated that SBO DGs with the capability to power any essential bus in the event of a loss of all AC power event will be available as a backup to an inoperable DG to maintain the defense-in-depth design philosophy. The licensee also stated that Calculation XX-E-022, “SBO Diesel Generators – AC System Analysis,” and an engineering evaluation, which was performed with the Electrical Transient Analysis Program (ETAP), determined that two of the three SBO DGs can successfully start the minimum required safe shutdown loads with sufficient starting voltages provided the loads are manually started with at least 30 seconds between starts. In the supplement dated April 13, 2022, the licensee provided a summary of the analytical results of the ETAP load flow, short circuit, and motor starting analyses to demonstrate the capability of two 3250-kilowatt (kW) SBO DGs to successfully start the minimum required safe shutdown LOOP loads (5581 kW) with sufficient starting voltages. In the supplement dated April 13, 2022, the licensee stated that each SBO DG has an associated fuel oil tank to provide a minimum of 24 hours of run time at full load; and if fuel oil level is verified less than 91 percent during operator daily checks, more fuel oil is added to the SBO DG fuel oil tanks from a fuel oil truck maintained on site in accordance with a plant procedure.

The NRC staff reviewed the summary of the analyses and finds that two SBO DGs can successfully start the minimum required safe shutdown loads because the emergency busses and LOOP loads meet their voltage and current acceptance criteria during load flow, short circuit, and motor starting conditions. Also, the NRC staff finds that each SBO DG will have sufficient fuel oil through the refuel process to bring the unit to a cold shutdown, if necessary. Therefore, the NRC staff finds that two SBO DGs have adequate capacity and capability to supply LOOP loads and bring the unit to safe cold shutdown and are, therefore, acceptable in

this regard as a backup power source for an inoperable DG during the proposed extended CT, as recommended by the BTP 8-8 guidance.

In section 3.4.5, "Periodic Testing," of attachment I to the LAR, the licensee stated that periodic tests, including running the SBO DGs for greater than 20 minutes loaded or unloaded, are performed monthly and every 18 months to demonstrate the capability and reliability of the SBO DGs. In addition, in section 3.4.4, "Availability," of attachment I to the LAR, the licensee stated that the availability of the SBO DGs will be verified by (1) performing a one-time start/loaded test for the SBO DGs within 30 days of entry into the extended CT (either prior to a planned removal of an emergency DG from service or after an emergent DG outage); (2) verifying the fuel oil tank level for each required SBO DG is greater than or equal to 24-hour supply; and (3) verifying limits of support systems parameters for starting and operating each required SBO DG. The licensee also indicated that the SBO DGs will be routinely monitored during operator rounds and will be used to extend the CT for one inoperable DG at a time. Furthermore, the proposed new TS 3.8.1 Required Action B.2 will require verification of the availability of the required SBO DGs within 1 hour of TS 3.8.1 Condition B entry (i.e., one emergency DG inoperable) and once per 8 hours thereafter.

The NRC staff finds that (1) the proposed verification for the availability of the SBO DGs and support systems before entering the extended CT follows the guidance in BTP 8-8; and (2) the CTs for the proposed Required Action B.2 are consistent with the CTs for the existing Required Action B.1 and will allow the licensee to verify the availability of the SBO DGs once per shift. Thus, the NRC staff finds that the proposed verifications for the availability of the SBO DGs meet the guidance in BTP 8-8, and are, therefore acceptable.

In section 2.4.1, "DG Allowed Outage Time," of attachment I to the LAR, the licensee stated that minor maintenance activities, which are currently performed during refueling outages, for the emergency DG will be moved online and included in the maintenance activities to be performed during the 14-day CT outage. The licensee stated that the minor maintenance activities in conjunction with the activities currently performed under the 7-day CT (which is being deleted from the TS) would result in an expected outage duration of approximately 162 hours (6 days 18 hours). In addition, the licensee provided past planned maintenance on the emergency DG that resulted in a total out-of-service time of approximately 212 hours (8 days 20 hours). The licensee also stated that Wolf Creek planned maintenance activities are typically scheduled for only 50 percent of the CT, in accordance with a plant procedure, to accommodate unanticipated problems.

In view of the above, the NRC staff finds that the proposed 14-day CT for an emergency DG is reasonable based on the Wolf Creek past maintenance duration for restoring an emergency DG (approximately 9 days) and the margin assumed for maintenance scheduling. Therefore, the NRC finds that the proposed 14-day CT meets the BTP 8-8 guidance for its justification based on plant operating experience, and is, therefore, acceptable.

The maximum CT of 17 days will limit the total time that LCO 3.8.1 is not met while concurrently or simultaneously in existing Required Action A.3 (i.e., 72 hours) and renumbered Required Action B.5 (i.e., 14 days). The availability of the required SBO DGs will be verified in Required Action B.2. If the required SBO DGs become unavailable, the proposed revised Condition C provides Required Actions C.1, C.2, C.3, and C.4 to restore either the emergency DG to operable status or the SBO DG to available status before the unit shutdown is required. The proposed Required Action C.1 will require the applicant to restore the DG to operable status within 72 hours from Condition B entry and the proposed Required Action C.3 will require the

applicant to restore the required SBO DG(s) to available status within 72 hours from Condition B entry. Both Required Actions C.1 and C.3 will apply within the first 72 hours from the time the DG is declared inoperable. If the SBO DGs are not available or cannot be restored to available status within the first 72 hours from entry into Condition B, the CTs for Required Actions C.1 and C.3 will limit the restoration time for the emergency DG to 72 hours. If the operability of the emergency DG cannot be restored within 72 hours from Condition B entry while the SBO DGs are unavailable, the unit will enter the proposed revised Condition H to start the unit shutdown.

If two SBO DGs are available after 72 hours from Condition B entry, the unit will enter the 14-day extended CT for Required Action B.5 and the proposed Required Actions C.2 and C.4 will apply when the SBO DGs become unavailable. Required Action C.2 will require the licensee to restore the DG to operable status within 24 hours from Condition C entry and Required Action C.4 will require the licensee to restore the required SBO DGs to available status within 24 hours from Condition C entry. The CTs for Required Actions C.2 and C.4 are modified by a Note indicating that the 24 hours from Condition C entry is only allowed once within any given extended DG CT. If the emergency DG or the SBO DG cannot be restored within 24 hours from the time when the SBO DG is declared unavailable during the extended CT, the unit will enter the proposed revised Condition H to start the unit shutdown.

The NRC staff finds that (1) the proposed 14-day CT for Required Action B.5 is dependent on the availability of the SBO DGs, as recommended by BTP 8-8 guidance; (2) the proposed 17-day maximum CT for Required Action B.5 is an editorial change, which results from the 14-day extended CT; (3) the proposed 72-hour CT for Required Actions C.1 and C.3 when the SBO DGs are not available is consistent with the existing TS 3.8.1 allowed CT for an inoperable DG (Required Action B.4.1); and (4) the proposed 24 hours with the associated Note for a one-time use during an extended CT meets the BTP 8-8 guidance. Therefore, the NRC staff finds that the proposed Required Action B.5 with associated CTs and the proposed Condition C with associated required actions and CTs are acceptable because they meet the BTP 8-8 guidance regarding remedial actions for restoring the operability of the emergency DG.

In section 3.4.3, "SBO DG Operation," of attachment I to the LAR, the licensee estimated the time it will take to reenergize one of the emergency busses (NB01 or NB02) from the SBO DGs in the event of a loss of all AC power using plant procedures at approximately 26 minutes. In addition, in section 3.3, "Station Blackout Capability," of attachment I to the LAR, the licensee stated that Wolf Creek is an AC-independent plant with a 4-hour SBO coping capability. According to the Wolf Creek USAR, Appendix 8.3A, "Station Blackout," (Package ML22152A025) Wolf Creek relies on Class 1E batteries to cope with a 4-hour SBO.

The NRC staff finds that (1) the estimated timeframe (26 minutes) for connecting the SBO DGs to the emergency bus to supply the safe shutdown loads is within the 1-hour timeframe recommended by BTP 8-8 guidance, and (2) Wolf Creek can cope with an SBO without an alternate AC power source by using the Class 1E batteries for the estimated timeframe for the SBO DGs to supply the loads. Therefore, the NRC staff finds that the Wolf Creek estimated timeframe for making the SBO DGs available to supply the loads and its coping capability without an AC power source during that timeframe are acceptable because they meet BTP 8-8 guidance in this regard.

Based on the above evaluation, the NRC staff finds that the proposed availability of the SBO DGs during the 14-day extended CT for one emergency DG maintenance meets the defense\_in-depth measures called for by the BTP 8-8 guidance, and is therefore, acceptable. The NRC staff also finds that the proposed revised TS 3.8.1 Conditions B and C provide

remedial actions with associated CTs that allow for the restoration of an inoperable emergency DG in accordance with 10 CFR 50.36(c)(2)(i) and are, therefore, acceptable.

### 3.1.1.2 Compensatory Measures

In attachment IX to the LAR, the licensee identified compensatory measures that are currently or will be implemented for an emergency DG outage. The licensee discussed these compensatory measures in attachment IX to the LAR and section 3.7, "Risk Management/Work Control and Scheduling," of attachment I to the LAR. In section 3.7 of attachment I to the LAR, the licensee stated that the plant Procedure AP 22C-003, "On-Line Nuclear Safety and Generation Risk Assessment," is used to address compensatory measures, risk mitigating actions, and contingency plans for risk significant activities.

The compensatory measures discussed in attachment IX to the LAR and section 3.7 of attachment I to the LAR are summarized below:

- TS required systems, subsystems, trains, components, and devices that depend on the remaining power sources will be verified to be operable and positive measures will be provided to preclude subsequent testing or maintenance activities on these systems, subsystems, trains, components, and devices.
- Weather conditions will be considered to determine if they are conducive to an extended DG CT.
- The offsite power supply and switchyard condition are conducive to an extended DG CT, which includes ensuring that switchyard access is restricted and no elective maintenance within the switchyard is performed that would challenge offsite power availability. Elective maintenance or testing that would challenge offsite power availability is that activity that could result in an electrical power distribution system (offsite circuit or transmission network) transient or make the offsite circuit(s) unavailable or inoperable. The operational risk assessment procedure provides a list of equipment that could challenge offsite power availability.
- Protected equipment during the use of an extended DG CT is identified in plant Procedures AP 22C-003 and AI 22C-013, "Protected Equipment Program." No equipment or systems assumed to be available for supporting the extended DG CT are removed from service. The equipment or systems assumed to be available (including required support systems, e.g., associated room coolers) are as follows:
  - Auxiliary Feedwater System (three trains)
  - Component Cooling Water System (both trains and all four pumps)
  - Essential Service Water System (both trains)
  - Emergency Core Cooling System (two trains).
- The extended CT for an inoperable DG will be used no more than once in an 18-month period (a refueling interval) on a per DG basis to perform DG planned maintenance activities.

- The transmission system operator and control room operators will have daily communications on the status of the plant and the transmission system when a DG is taken out of service.

The NRC staff finds that the above compensatory measures follow the recommendations of the BTP 8-8 guidance for measures necessary to ensure adequate defense-in-depth during the extended CT, and are, therefore, acceptable.

### 3.1.2 Evaluation of Additional TS Changes

#### 3.1.2.1 TS 3.8.1 – Condition A

The licensee proposed to revise Condition A by extending the maximum CT for Required Action A.3 (restore offsite circuit to operable status) from 6 days to 17 days. The maximum CT for Required Action A.3 limits the total time that TS 3.8.1 LCO is not met while concurrently or simultaneously in Condition A (one offsite circuit inoperable) and Condition B (one DG inoperable). Required Action A.3 requires restoration of the operability of the offsite circuit within 3 days; and the CT for restoring the operability of the emergency DG is revised to 14 days if the required SBO DGs are available, as discussed in section 3.1.1 of this safety evaluation (SE). Therefore, the maximum CT for Required Action A.3 is being revised to 17 days, which is the total time for Required Actions A.3 and renumbered Action B.5.

The NRC staff finds that the proposed revised 17-day CT for Required Action A.3 is editorial since it results from the change to the CT for an inoperable DG, and is therefore, acceptable.

#### 3.1.2.2 TS 3.8.1 – Renumbering of Required Actions in Condition B and Condition H

The addition of the new Required Action B.2 to TS 3.8.1 results in the renumbering of existing Required Actions B.2, B.3.1, B.3.2, and B.4.1 as Required Actions B.3, B.4.1, B.4.2, and B.5, respectively, in the revised Condition B and Condition H.

The NRC staff finds the proposed changes are editorial in nature and are, therefore, acceptable.

#### 3.1.2.3 TS 3.8.1 – Removal of Sharpe Station Generator Sets Requirements

The proposed changes would eliminate existing required actions and Notes associated with the use of the Sharpe Station generator sets in TS 3.8.1 Conditions A, B, and H. In section 2.3.1.1, “Changes to Condition A,” of attachment I to the LAR, the licensee stated it will no longer be relying on the use of the Sharpe Station generator sets with the approval of the proposed license amendment.

The NRC staff finds that the elimination of the TS actions related to the Sharpe Station generator sets is acceptable since the licensee will no longer rely on the Sharpe Station generator sets to extend the CT of an inoperable DG.

### 3.1.3 License Conditions from Amendment No. 163

By letter dated April 26, 2006, the NRC issued Amendment No. 163 to Wolf Creek to increase the CT and add requirements for Sharpe Station generator sets in TS 3.8.1. Specifically, the revised TS included required actions and CTs that allowed 7 days to restore an inoperable DG that was taken out of service for voluntary planned maintenance activities. The justification for

the 7-day CT was based on the availability of the Sharpe Station generator sets that are located approximately 2 miles north of Wolf Creek.

The licensee proposed to delete the license conditions associated with Amendment No. 163 from Appendix D of the Wolf Creek operating license. As discussed above in sections 3.1.1 and 3.1.2 of this SE, the NRC staff finds it acceptable to extend the CT of an inoperable emergency DG from 72 hours to 14 days based on the availability of the SBO DGs without crediting the existing Sharpe Station generator sets. As such, the 7-day CT of Required Action B.4.2.2 associated with the Sharpe Station generator sets would be deleted from the TS. The NRC staff finds these license conditions associated with the Sharpe Station generator sets are not necessary and are acceptable for deletion.

### 3.1.4 Electrical Engineering Conclusion

The NRC staff reviewed the proposed changes to Wolf Creek TS 3.8.1 to extend the CT of one inoperable emergency DG to 14 days based on the availability of two SBO DGs. Based on its review, the NRC staff finds that Wolf Creek's use of SBO DGs and compensatory measures during maintenance of one emergency DG meets the NRC staff's guidance in BTP 8-8 since (1) two SBO DGs provide an acceptable supplemental power source as defense-in-depth measure during the extended CT and (2) the compensatory measures ensure adequate defense-in-depth for the safe operation of the plant during the extended CT. The NRC staff also finds that the proposed TS actions for the 14-day extended CT are acceptable because they provide acceptable remedial actions to meet TS LCO 3.8.1 in accordance with 10 CFR 50.36(c)(2)(i) and, as a result, maintain the redundancy of the emergency DG required by GDC 17. Therefore, in view of the above, the NRC staff concludes that the proposed changes are acceptable with respect to defense-in-depth. In addition, the NRC staff concludes that the proposed deletion of the license conditions associated with Amendment No. 163 is acceptable because the Sharpe Station generator sets are not required for the proposed 14-day extended CT and their associated TS actions are deleted.

## 3.2 Human Factors Engineering

### 3.2.1 Determination of Human Factors Level of Review

The NRC staff reviewed the proposed changes and considered the related actions involving the DGs and the recovery of emergency AC or offsite power. The LAR is a deterministic assessment (non-risk-informed) supplemented by risk insights, which is consistent with BTP 8-8 guidance. As such, the NRC staff proceeded with a non-risk-informed screening process as outlined in NUREG-1764.

The NRC staff assessed the safety significance of the identified human action by reviewing Table A.2, "Generic PWR [Pressurized Water Reactor] Human Actions That Are Risk-Important," in Appendix A of NUREG-1764. The NRC staff verified that no actions from "Group 1: PWR Human Actions That Are Risk-important," are included in the submittal. However, in "Group 2: PWR Potentially Risk-Important Human Actions," the following action is included: Recover Emergency AC or Offsite Power. This includes recovering AC power by either manual transfer of the source of offsite power, or recovery of onsite normal/emergency AC power. The proposed Required Action B.2 falls into this category. Due to the potential risk, the NRC staff further screened the identified human action and the associated TS changes to determine the level of review required.

The proposed TS changes pertaining to the transfer of the source of AC power includes a replacement of the source of power from the Sharpe Station generator sets to the SBOs. In section 3.10.1, "Defense-in-Depth," of attachment I to the LAR, the licensee stated that the proposed extension to the CT does not introduce any new operator actions. The proposed changes require operators to align and ensure availability of the SBO DGs in the LCO associated with one inoperable DG. Licensed operators and nuclear station operators are trained on the purpose and use of the SBO DG System and the associated procedures.

In section 3.9, "Risk Assessment," of attachment I to the LAR, the licensee provided supplemental risk insights, including a quantitative and qualitative analysis of the change in risk associated with the proposed TS CT extension for both DGs (NE01 and NE02) individually. The guidance in NUREG-1764 states that plant modifications and their associated human actions, such as the change proposed by the licensee can be categorized into regions of high (I), medium (II), and low risk (III), which contributes to the determination of the necessary level of human factors engineering (HFE) review. The margins for each region in NUREG-1764 are set in accordance with the acceptable changes in risk implications. The NRC staff performed an independent evaluation by using a Standardized Plant Analysis Risk (SPAR) model of an inoperable DG without available Sharpe Station generator sets for the proposed CT. The evaluation included a deterministic assessment of the safety significance of the identified human actions as previously mentioned combined with the plant-specific PRA knowledge regarding the proposed changes. The results of the NRC staff's evaluation are consistent with the risk insights provided by the licensee and align within the margins of region III based on NUREG-1764.

The NRC staff reviewed Required Action B.2. The CT associated with Required Action B.2 is 1 hour and once per 8 hours thereafter. The associated tasks are administrative, clearly defined, proceduralized, and included in the TS bases. In section 3.4.5 of attachment I to the LAR, the licensee described the administrative verification of the records for monthly testing and daily monitoring activities that are completed prior to placing a DG in an outage via Procedures STN KU-010, "Station Blackout Diesel and Non-Safety AFW [Auxiliary Feedwater] Pump Test," and CKL ZL-009, respectively. The licensee also provided information confirming Wolf Creek ability to cope with loss of all AC power for 1 hour independent of an alternate AC power source (i.e., additional diesels, gas or combustion turbines, hydro units, or other power sources) as recommended by BTP 8-8 guidance. This calculation did not credit any supplemental AC power source.

As the proposed TS changes are related to changes in the recovery of emergency AC or offsite power, the NRC staff also reviewed the information provided by the licensee regarding the change from Sharpe Station generator sets to SBO DGs. Consistent with BTP 8-8 guidance, the licensee described how Wolf Creek can make the alternate AC or supplemental power source available, including accomplishing the cross-connection states, in approximately 1 hour to enable restoration of battery chargers and control reactor coolant system inventory. The licensee provided a detailed description of associated procedures and provided the times associated to complete the tasks. The licensee had multiple crews perform a walkthrough of the applicable steps in the plant and performing the tasks on the simulator included in the relevant procedures concerning the proposed changes. This includes Procedures EMG C-0, "Loss of All AC Power"; OFN NB-030, "Loss of AC Emergency Bus NB01 (NB02)"; and SYS KU-121, "Energizing NB01 from Station Blackout Diesel Generators" or SYS KU-122, "Energizing NB02 from Station Blackout Diesel Generators," depending on which emergency bus is energized. The completion time observed by the licensee was approximately 40 minutes or less on average. This is within the 1-hour timeframe, and this conforms to BTP 8-8.



In section 3.4.3 of attachment I to the LAR, the licensee stated:

Licensed Operators and Nuclear Station Operators received training on the purpose and use of the SBO DG System prior to the system being placed in service. The task to monitor and operate the SBO DGs is currently covered in the Licensed Operator Requalification program every four years.

The NRC staff reviewed the following aspects of the proposed TS changes in accordance with NUREG-1764:

<b>Aspect</b>	<b>Inquiry</b>	<b>Answer</b>
Operating Experience	is there history of issue with the tasks associated?	No
New Actions	Is there an introduction of an action not previously performed by personnel (automated)?	No
Change in Automation	Has the proposed change given personnel a new functional responsibility?	No
Change in Tasks	Has the proposed change significantly modified the way in which personnel perform their tasks?	No
Change in Performance Context	Has the proposed change created a new context, identified a previously unrecognized context, or address a context previously not modeled for task performance?	No

Based on the review of Table A.2, in NUREG-1764, the results of the NRC staff's independent evaluation, a qualitative assessment of the safety-significance of Required Action B.2, the clarity of provided procedures, and the time allotted for the actions included in the proposed TS change, a Level III (low-level) human factors review was determined to be appropriate. Therefore, the NRC staff applied the criteria for a Level III review.

### 3.2.2 Human Factors Technical Evaluation

The licensee described the activities associated with proposed extended CT. The NRC staff reviewed Required Action B.2 added to the proposed TS. The NRC staff also reviewed the actions associated with the change of alternative AC source as recommended by BTP 8-8 and determined there are no new actions or change in actions because the SBO DG system is already in place. The NRC staff verified that the actions are in the low-risk category after assessing the risk insights provided in the submittal and by completing a qualitative assessment of the action identified by the licensee which could potentially pose a risk in accordance with NUREG-1764. Thus, there is no need for further analysis as there is no risk significance regarding HFE aspects of the proposed change to the TS. Accordingly, the NRC staff finds the requested change to TS 3.8.1 acceptable regarding HFE.



### 3.2.3 Human Factors Conclusion

The NRC staff concludes that the licensee's request does not have an adverse effect on safety with respect to HFE considerations. The NRC staff reviewed the licensee's analysis methods and detailed descriptions to verify that only a Level III HFE review is necessary. For the reasons stated above, the NRC staff finds that there is no degradation in the operators' ability to provide an emergency alternative power source. The NRC staff finds that the existing operator actions contained in the current licensing basis continue to provide a reasonable means of ensuring safety during the extended CT proposed. Ultimately the NRC staff finds that the elements in NUREG-1764 were met, and the proposed changes are acceptable with regard to HFE.

### 3.3 Risk Insights

In the LAR, the licensee stated that the proposed amendment was a deterministic amendment supplemented by risk insights. In section 3.9 of attachment I to the LAR, the licensee stated that a quantitative and qualitative risk assessment was performed to support the LAR. The licensee provided the risk assessment in attachment II to the LAR.

Because this LAR is not a risk-informed application, the NRC staff did not review the licensee's PRA models to determine their technical acceptability as a basis to support this application. As a result, the NRC staff did not rely on the quantitative risk information provided by the licensee in attachment II to the LAR. However, the NRC staff considered the licensee's risk insights to aid in the deterministic review of the proposed change.

The NRC staff determined that "special circumstances," as discussed in NUREG-0800, Section 19.2, "Review of Risk Information Used to Support Permanent Plant-Specific Changes to the Licensing Basis: General Guidance," dated June 2007 (ML071700658), which would have necessitated additional risk information to be provided, did not exist for the proposed change.

In section 3.4.1 of attachment I to the LAR, the licensee stated that the SBO DG system includes three non-safety-related DGs. In section 3.4.2, "SBO DG – AC System Analysis," of attachment I to the LAR, the licensee stated that the three SBO DGs are designed to start and connect in parallel to either safety-related Class 1E bus within 10 minutes of an SBO and that the three SBO DGs are sufficient to power all LOOP loads. The licensee also stated that two SBO DGs are sufficient to start the minimum required safe shutdown loads, provided the loads are manually started with at least 30 seconds provided between starts. In section 5.11, "Risk Insights," of attachment II to the LAR, the licensee stated that there is inherent defense-in-depth whenever a DG is unavailable because the SBO DG system is capable of supplying essential loads on the Class 1E busses.

In section 4.1, "External Hazards," of attachment II to the LAR, the licensee described the risk insights for fire, seismic, and high winds external hazards. The licensee screened the remaining external hazards from consideration in the LAR.

For the fire hazard, the licensee stated that the fire risk associated with a DG being out of service for the extended CT will increase for areas where a fire can damage the capability to receive offsite power to the safeguards busses. The licensee further stated that the only area where an internal fire can cause a LOOP is the communications corridor.

In the LAR supplement dated April 13, 2022, the licensee clarified the fire risk insights and risk mitigation actions associated with the SBO DGs and the communications corridor. The licensee

stated that it identified three cables that could be affected by a fire in the communications corridor. Since the extended CT is based on the availability of two SBO DGs, the licensee stated that Procedure AP 22C-003 will be revised to include the necessary risk mitigation actions/compensatory measures for Fire Area CC-1 (the communications corridor) associated with a DG being out of service.

For the seismic hazard, the licensee described the impact of a seismic event on the DGs and stated that the primary impact expected from a seismic event is a LOOP. The licensee also stated that the seismically induced failures of the DGs are assumed to be correlated, meaning that any seismic event that fails one DG will also fail the other DG. Any such seismic event would be beyond the design basis event. Therefore, one DG being out of service would not impact the seismic response. The licensee concluded that the change in risk associated with a DG being out of service for the extended CT was equivalent to the change in risk from the internal events model for random failures.

The NRC staff noted that the SBO DGs may fail at lower seismic demands than the DGs. Specifically, a seismic event could result in a LOOP and a seismically induced correlated failure of all three SBO DGs without a corresponding loss of the DGs. In the context of the proposed change, this could result in a scenario involving a seismically induced LOOP combined with a seismically induced correlated failure of all SBO DGs and a random failure of the available DG with the other DG being out of service. In this scenario, it was unclear to the NRC staff that the change in seismic risk associated with a DG being out of service for the extended CT would be equivalent to the change in risk from the internal events model for random failures.

In the LAR supplement dated April 13, 2022, the licensee clarified the seismic risk insights and risk mitigation actions associated with the SBO DGs, including the preceding scenario identified by the NRC staff. The licensee stated that the SBO DGs are not credited in the event of a seismic event, although they might be available. For the preceding scenario identified by the NRC staff, the licensee stated that this scenario would require a seismic event that is strong enough to fail the SBO DGs but is not strong enough to fail the safety-related DGs, one DG in the extended CT, and the protected DG failing due to an independent failure. The licensee stated that this very specific scenario would have a very low probability of occurring during the period of the extended CT. Based on the licensee's assumption of correlated DG failures and the low probability of occurrence for the seismic scenario described above, the NRC staff finds that the licensee's seismic risk insights support the proposed change.

In addition to reviewing the licensee's risk insights, the NRC staff performed an independent assessment using the NRC's SPAR model for Wolf Creek. The NRC staff used the SPAR model for Wolf Creek to assess the proposed change, with and without the availability of the Sharpe Station, and identified risk insights and the dominant risk contributors for the proposed change. The NRC staff concluded the licensee's risk insights support the proposed change and the licensee appropriately identified the dominant risk scenarios for the proposed change. The NRC staff noted that the licensee's diverse and flexible coping (FLEX) strategies provide an additional level of defense-in-depth during the proposed change. The NRC staff further noted that the licensee stated it would revise Procedure AP 22C-003 to include risk mitigation actions/compensatory measures for the communications corridor.

In view of the above, the NRC staff determined that: (1) the licensee appropriately identified the dominant risk scenarios for the proposed change, and (2) the licensee's available procedures appropriately manage the risk from the dominant risk scenarios. Therefore, the NRC staff concludes that the licensee's risk insights support the proposed change.

### 3.4 Technical Specifications Evaluation

The LCO statement for TS 3.8.1 requires, among other things, two operable DGs capable of supplying the onsite class 1E power distribution subsystems. The ACTIONS table in TS 3.8.1 contains conditions, required actions, and associated CTs for instances when the LCO is not met. The licensee proposed changes to conditions, required actions, and CTs in the ACTIONS table of TS 3.8.1 for situations when a single DG is inoperable. The changes would remove requirements related to the Sharpe Station generator sets and add requirements related to SBO DGs to reflect the proposed change in licensing basis to credit the SBO DG system as a supplemental source of AC power when a single DG is inoperable. The final version of the licensee's proposed changes is contained in attachment II to the July 12, 2022, supplement.

The NRC staff reviewed the licensee's justification for the proposed changes and finds it acceptable as discussed in sections 3.1 to 3.4 of this SE. The NRC staff determined that the proposed revised Required Actions and existing usage rules in the Wolf Creek TS will continue to provide acceptable remedial actions while in the associated Conditions.

The NRC staff also determined that the proposed TS changes represent a departure from the format and content for TS found in NUREG-1431. In accordance with Chapter 16 of NUREG-0800, such departures warrant special attention to determine whether proposed differences are justified by uniqueness in plant design or other considerations so that 10 CFR 50.36 is met. Because NUREG-1431 does not credit a supplemental AC source, the NRC staff determined the SBO DG system represents a uniqueness in plant design, which justifies the differences between the proposed Wolf Creek TS and NUREG-1431.

#### 3.4.1 Technical Specifications Conclusion

Section 50.36(b) of 10 CFR requires TSs to be derived from the analyses and evaluation included in the safety analysis report, and amendments thereto. The licensee provided an evaluation and justification of the proposed changes to Wolf Creek TS 3.8.1.

The NRC staff reviewed the proposed changes as well as the licensee's justifications for the changes. The licensee has met the requirements of 10 CFR 50.36(a) because a summary statement of the reasons for the TS was provided. The NRC staff determined the regulatory requirements of 10 CFR 50.36(b) will continue to be met because the TS will continue to be derived from the analyses and evaluation included in the safety analysis report, and amendments thereto. The NRC staff determined that the regulatory requirements of 10 CFR 50.36(c)(2) will continue to be met because the LCO will continue to describe the lowest functional capability or performance level of equipment required for safe operation of the facility and the remedial actions mandated by the TSs if the LCOs are not met have been deemed acceptable to the NRC staff. Finally, while the format and content of the proposed changes do not conform to the guidance in NUREG-1431, the licensee provided adequate justification for the proposed changes. Therefore, the NRC staff determined the proposed changes are acceptable in accordance with requirements in 10 CFR 50.36 and guidance in NUREG-0800.

### 3.5 Licensee's New Commitments

The licensee included new commitments in attachment VIII, "List of Regulatory Commitments," to the LAR. The NRC staff notes that these commitments are not material to the NRC staff's review of the LAR and therefore are not within the scope of NRC staff's review.

### 3.6 Technical Specification Bases

The regulation under 10 CFR 50.36(a)(1) states, in part: "A summary statement of the bases or reasons for such specifications ... shall also be included in the application but shall not become part of the technical specifications." The NRC staff notes that the licensee submitted proposed TS Bases changes, which detail the new equipment, for information only.

### 3.7 Technical Evaluation Conclusion

The NRC staff concludes that the licensee's proposed revision to TS 3.8.1, provides an acceptable remedial action when the LCO is not met and is consistent with BTP 8-8 guidance. The NRC staff also concluded that the licensee's proposed deletion of the three license conditions added to Appendix D of the operating license with the issuance of Amendment No. 163 is acceptable because these license conditions are associated with the Sharpe Station generator sets, which are no longer credited. The licensee will continue to meet the requirements of 10 CFR 50.36(c)(2)(i) and GDC 17. The NRC staff also concludes that the licensee's risk insights support the proposed change. Therefore, the NRC staff finds the licensee's proposed revision to TS 3.8.1 and deletion of license conditions issued with Amendment No. 163 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 on July 13, 2022. The State official had no comments.

### 5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, published in the *Federal Register* on December 28, 2021 (86 FR 73821), and there has been no public comment on such finding. 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) there is reasonable assurance that 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.

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Date: November 4, 2022

SUBJECT: WOLF CREEK GENERATING STATION, UNIT 1 - ISSUANCE OF AMENDMENT NO. 234 RE: DIESEL GENERATOR COMPLETION TIME EXTENSION FOR TECHNICAL SPECIFICATION 3.8.1, "AC SOURCES – OPERATING" (EPID L-2021-LLA-0173) DATED NOVEMBER 4, 2022

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RidsNrrDexEmib Resource	AFoli, NRR	JHuang, NRR
RidsNrrDraAplc Resource	HKodali, NRR	KHsu, NRR
RidsNrrDssScpb Resource	SAIferink, NRR	CHenderson, RGN IV

**ADAMS Accession No.: ML2252A151**

\*by email

OFFICE	NRR/DORL/LPL4/PM*	NRR/DORL/LPL4/LA*	NRR/DSS/STSB/BC*	NRR/DSS/SCP/BC*
NAME	SLee	PBlechman	VCusumano	BWittick
DATE	9/8/2022	9/12/2022	8/19/2022	8/23/2022
OFFICE	NRR/DEX/EEEE/BC*	NRR/DEX/EMIB/BC*	NRR/DRO/IOLB/BC*	NRR/DRA/APLC/BC*
NAME	WMorton	SBailey	LNist	SRosenberg (SVasavada for)
DATE	8/26/2022	8/2/2022	8/23/2022	5/25/2022
OFFICE	OGC – NLO*	NRR/DORL/LPL4/BC*	NRR/DORL/LPL4/PM*	
NAME	RWeisman	JDixon-Herrity	SLee	
DATE	11/1/2022	11/3/2022	11/4/2022	

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