

# Wolf Creek Generating Station, Unit 1

Revisions to Safety Evaluation Related to  
Amendment 237, Request for Deviation from  
Fire Protection Requirements

Public Meeting

March 25, 2024

# Revisions to Wolf Creek Safety Evaluation Related to Amendment 237, Request for Deviation from Fire Protection Requirements

## Meeting Purpose

- To Present the NRC's Revisions to the Safety Evaluation Related to Amendment 237, Request For Deviation from Fire Protection Requirements (ML23165A250)

# Revisions to Wolf Creek Safety Evaluation Related to Amendment 237, Request for Deviation from Fire Protection Requirements

- LAR Submitted August 2, 2022  
(ML22215A000)
- Amendment Issued August 31, 2023  
(ML23165A250)
- Licensee Submitted Request for  
Correction Letter October 19, 2023  
(ML23292A357)

# Revisions to Wolf Creek Safety Evaluation Related to Amendment 237, Request for Deviation from Fire Protection Requirements

- **Licensee Comments 1.0 and 2.0:** The SE only addresses the acceptability for portable lighting for fires outside the control room. The SE calls out specific fire areas. The SE did not include and address all procedures. The LAR does not request specific fire areas to be included for portable lighting consideration but requests specific implementing procedures that require OMAs.
- **NRC Response:** The SE identifies the fire areas that were described by the licensee in Sections 1, 2, and 8 of its analysis titled “Post-Fire Safe Shutdown Operator Manual Actions.” The SE was revised to state the following:

Table 1 of this SE identifies the 10 CFR Part 50 Appendix R, Section III.G.2 fire areas identified by the licensee in its analysis that require operator manual actions to achieve safe shutdown. Appendix R to 10 CFR Part 50, Section III.G.2 fire areas are areas where cables or equipment of redundant trains of systems necessary to achieve and maintain hot shutdown conditions are located in the same fire area outside of primary containment. The operator manual actions are actions conducted outside the affected fire area that are needed to ensure that safe shutdown can be accomplished for a fire in the affected area.

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## **NRC Response to Comments 1.0 and 2.0 (continued):**

The SE does not identify any procedures. The NRC does not approve plant procedures, rather it reviews/approves proposed changes that may require plant procedure changes. The SE was revised to state the following:

The licensee requested to use hard hat mounted portable lights as an alternative for fixed emergency lighting units with limited exceptions (as described above), where operator manual actions are performed to achieve and maintain post-fire safe shutdown, and to be the primary illumination means for utilizing related implementing procedures, safe shutdown equipment, and the respective access and egress routes to the equipment in support of post-fire shutdown or a non-fire event resulting in the loss of all AC power.

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**Licensee Comment 3.0:** The licensee indicated that the following paragraph was incorrect:

In plant areas, where installation of 8-hour battery backup supplied lighting is not achievable, the hard hat mounted portable lights accomplish the purpose of achieving adequate emergency lighting because they will ensure that adequate lighting is available to aid the operator for an extended period of time during plant fire emergencies.

**NRC Response:** The SE was revised as follows:

The underlying purpose of 10 CFR Part 50, Appendix R, Section III.J, is to ensure that adequate lighting is available to aid the operator for an extended period of time during plant fire emergencies. In plant areas, where installation or maintenance of 8-hour battery backup supplied lighting is not achievable or feasible, the hard hat mounted portable lights accomplish the purpose of achieving adequate emergency lighting because they will ensure that adequate lighting is available to aid the operator for an extended period of time during plant fire emergencies.

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**Licensee Comment 4.0:** A discussion regarding the remaining 8-hour fixed emergency lighting units that will remain in place, but be downgraded to 1.5 hour Life Safety is not include in the SE.

**NRC Response:** In Section 3.0 of the SE, the NRC states the following:

The licensee further indicated that for life safety access, egress, and for firefighting activities, 1.5-hour fixed lights will be available for supplementary lighting to the portable lights.

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**Licensee Comment 5.0:** The license indicated that they did not commit to 10 CFR 50, Appendix R.

**NRC Response:** The SE was revised as follows:

Wolf Creek was licensed to operate on June 4, 1985, and thus, is not subject to Appendix R to 10 CFR Part 50. However, the requirements of Appendix R to 10 CFR Part 50, Section III.J to provide emergency lighting to assure that safe shutdown capability is maintained during and after a fire, are referenced in appendix 9.5E, “10 CFR Part 50 Appendix R Comparison,” of the Wolf Creek USAR. Appendix R to 10 CFR Part 50, Section III.J, states that, “Emergency lighting units with at least an 8-hour battery power supply shall be provided in all areas needed for operation of safe shutdown equipment and in access and egress routes thereto.” The objective of this requirement is that in the event of a fire, adequate lighting will be available to assure that the plant can be safely shut down.



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**Licensee Comment 6.0:** The license indicated that the following paragraph was incorrect:

The fixed emergency lighting system is powered from vital buses. Upon loss of the normal power supply to the vital buses, the emergency diesel generators will provide power to the vital buses. Thus, the emergency lighting system will be continuously energized to the fire areas listed in table 2 of this SE.

**NRC Response:** The SE was revised as follows:

The fixed emergency lighting system is powered from normal lighting circuits that are fed from the non-Class 1E auxiliary system. Upon loss of the normal AC power, the lights will be powered by the back-up batteries. The licensee has provided a reliability and feasibility analysis, which shows that all of the required manual actions can be performed well before the 8-hour batteries become incapable of performing their required function. Thus, the fixed emergency light fixtures in the locations listed in table 2 of this SE will be continuously energized for a sufficient time period to enable the plant to safely shutdown.

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**Licensee Comment 7.0:** The licensee indicated that the basis the NRC stated for the RAI was incorrect.

**NRC Response:** The SE was revised as follows:

Based on its review of information in the LAR, the NRC staff transmitted a request for additional information (RAI) to the licensee on December 27, 2022 (ML22361A005). The NRC staff's RAI requested that the licensee discuss the impact of using only portable (hard hat mounted) lights to light travel pathways to and from areas where operator manual actions are performed. Furthermore, the NRC staff's RAI requested information regarding the status of updating the feasibility and reliability review for each fire area where operator manual actions are conducted since it did not appear to the NRC staff that this review had been updated to reflect the use of portable hard hat mounted lights in lieu of fixed emergency light fixtures.

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**Licensee Comment 8.0:** The licensee indicated that using the term “in certain fire areas” was not correct.

**NRC Response:** The SE was revised in several areas by deleting “in certain fire areas” and changing it to “with limited exceptions” and those “limited exceptions” were defined. In addition, the following paragraph was added to SE Section 1.0:

The areas where hard hat mounted lights will not be used for post-fire safe shutdown (i.e., the “limited exceptions” mentioned above) are areas of the plant where the fixed emergency light fixtures with 8-hour battery backup will be retained and credited for post-fire safe shutdown. These areas include the control room, the auxiliary shutdown panel, the emergency diesel generator control panel, and the operations hard hat rack just outside the control room. For additional details, see table 2 of this SE.

Table 2 refers to the fixed emergency lighting units with 8 hour battery backup locations credited for safe shutdown as identified in LAR table E.2.5-1.

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**Licensee Comment 9.0:** The licensee indicated that the defense-in-depth discussion was not correct.

**NRC Response:** The SE was revised as follows:

Defense-in-depth elements are maintained (e.g., control of transient combustible materials), through various means, including: the implementation of administrative procedures; automatic fire detection and fire suppression systems are provided as required by the fire hazard analysis; portable fire extinguishers and fire hose stations are provided throughout the plant for manual firefighting; and passive fire barrier features (walls, floors/ceilings, fire dampers, doors, penetration seals, fire wrap, and structural steel fireproofing) to separate redundant post-fire safe-shutdown components are installed in accordance with industry standards and fire tested assemblies. Therefore, a level of safety is being provided that results in the unlikely occurrence of fires; rapid detection, control, and extinguishment of fires that do occur, and the protection of SSCs important to safety.

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**Licensee Comment 10.0:** The licensee indicated that the following paragraph was not correct:

The equipment needed for safe shutdown at Wolf Creek is maintained inside the main power block and several buildings onsite.

**NRC Response:** The SE was revised as follows:

The equipment needed for safe shutdown at Wolf Creek is maintained inside the main power block and the essential service water pump house. Fixed emergency lighting is provided inside these buildings for areas needed for operation of safe shutdown equipment, as well as for access and egress routes in accordance with 10 CFR Part 50, Appendix R, Section III.J.

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## Comments/Questions