



Stephen L. Smith
Engineering Vice President

December 22, 2021
ET 21-0017

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555 - 0001

- References:
- 1) Letter ET 21-0010 dated September 29, 2021, from S. L. Smith, WCNOG, to USNRC, License Amendment Request – Revision to Technical Specification 3.3.2, “Engineered Safety Feature Actuation System (ESFAS) Instrumentation”
 - 2) Electronic mail dated November 23, 2021, from S. A. Lee, USNRC, to J. Turner, WCNOG, “Request for additional information - Wolf Creek revision of Technical Specification 3.3.2, “Engineered Safety Feature Actuation System (ESFAS) Instrumentation” (EPID L-2021-LLA-0172)”

Subject: Docket No. 50-482: Response to Request for Additional Information Regarding License Amendment Request – Revision to Technical Specification 3.3.2, “Engineered Safety Feature Actuation System (ESFAS) Instrumentation”

Commissioners and Staff:

Reference 1 provided the Wolf Creek Nuclear Operating Corporation (WCNOG) application for an amendment to the Technical Specifications for the Wolf Creek Generating Station (WCGS). The proposed amendment would modify WCGS TS 3.3.2, “Engineered Safety Feature Actuation System (ESFAS) Instrumentation,” by adding a new Required Action N.1 to require restoration of an inoperable Balance of Plant ESFAS (BOP ESFAS) train to OPERABLE status within 24 hours. Reference 2 provided a request for additional information (RAI) related to the license amendment request. The RAI pertains to the risk insight information provided in Reference 1.

The information provided in this submittal does not expand the scope of the application and does not impact the significance hazards consideration determination presented in Reference 1. In accordance with 10 CFR 50.91, “Notice for public comment; State consultation,” Section (b)(1), a copy of this amendment application is being provided to the designated Kansas State official.

The letter contains no commitments. If you have any questions concerning this matter, please contact me at (620) 364-4093, or Ron Benham at (620) 364-4204.

Sincerely,

A handwritten signature in black ink, appearing to read "S. L. Smith", written in a cursive style.

Stephen L. Smith


SLS/rlt

Attachment: Response to Request for Additional Information Regarding License Amendment Request – Revision to Technical Specification 3.3.2, “Engineered Safety Feature Actuation System (ESFAS) Instrumentation”

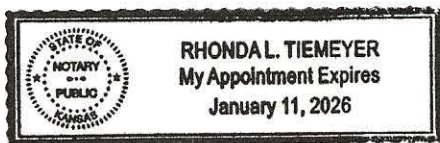
cc: S. S. Lee (NRC), w/a
S. A. Morris, (NRC), w/a
G. Werner (NRC), w/a
K. S. Steves (KDHE), w/a
Senior Resident Inspector (NRC), w/a

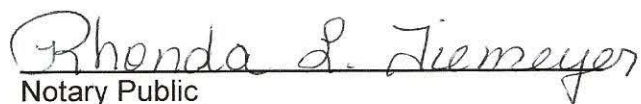
STATE OF KANSAS)
) SS
COUNTY OF COFFEY)

Stephen L. Smith, of lawful age, being first duly sworn upon oath says that he is Vice President Engineering of Wolf Creek Nuclear Operating Corporation; that he has read the foregoing document and knows the contents thereof; that he has executed the same for and on behalf of said Corporation with full power and authority to do so; and that the facts therein stated are true and correct to the best of his knowledge, information and belief.

By 
Stephen L. Smith
Vice President Engineering

SUBSCRIBED and sworn to before me this 22nd day of December, 2021.




Notary Public

Expiration Date January 11, 2026

**Attachment:
Response to Request for Additional Information Regarding License Amendment
Request – Revision to Technical Specification 3.3.2, “Engineered Safety
Feature Actuation System (ESFAS) Instrumentation”**

Reference 1 provided the Wolf Creek Nuclear Operating Corporation (WCNOC) application for an amendment to the Technical Specifications for the Wolf Creek Generating Station (WCGS). The proposed amendment would modify WCGS TS 3.3.2, “Engineered Safety Feature Actuation System (ESFAS) Instrumentation,” by adding a new Required Action N.1 to require restoration of an inoperable Balance of Plant ESFAS (BOP ESFAS) train to OPERABLE status within 24 hours. Reference 2 provided a request for additional information (RAI) related to the license amendment request. The RAI pertains to the risk insight information provided in Reference 1. The NRC request is provided in italics.

RAI APLC-1: Inclusion of All Equipment Affected by BOP ESFAS Cabinets in Development of Risk Insights

Section 3.1, “System Description,” of Attachment I to the LAR describes the function of the BOP ESFAS. This section states that the redundant train BOP ESFAS actuation logic cabinets SA036D and SA036E actuate the motor-driven auxiliary feedwater (MDAFW) pumps and reposition automatic valves as required (i.e., steam generator blowdown and sample line isolation valves, essential service water supply valves, and condensate storage tank supply valves). This section further states that these redundant train cabinets also actuate containment purge isolation, control room emergency ventilation isolation, and emergency exhaust system actuation functions.

The auxiliary feedwater system instrumentation and controls are described in Section 7.3.6, “Auxiliary Feedwater Supply,” of the Updated Safety Analysis Report (USAR) (ADAMS Accession No. ML21168A142). Section 7.3.6.1.1.g lists the components that are actuated with the auxiliary feedwater system.

Based on the staff’s review of the LAR, especially the information in Section 5.10 of Attachment II, the entire set of equipment listed in Section 7.3.6.1.1.g of the USAR does not appear to be included in the development of the risk insights supporting the proposed change. Therefore, it is unclear if the risk insights address all the impacts of the proposed change.

Please address the following:

- a. Clarify if all components listed in Section 7.3.6.1.1.g of the USAR are affected by BOP ESFAS actuation logic cabinets SA036D and SA036E. If not all components in Section 7.3.6.1.1.g of the USAR are affected by BOP ESFAS actuation logic cabinets SA036D and SA036E, identify the ones that are affected.*
- b. Discuss how the risk insights provided in the LAR encompass all potential impacts of the proposed change on the components affected by the BOP ESFAS actuation logic cabinets SA036D and SA036E.*
- c. Identify any changes to the risk insights supporting the proposed change, if applicable, based on the responses to items a. and b. above.*

Response to RAI APLC-1

- a. A review of BOP ESFAS was performed to verify all end components aligned with USAR Section 7.3.6.1.1.g. This was performed by reviewing all field cables entering and exiting the ESFAS cabinets and their associated electrical essential drawings.

The following components listed in USAR Section 7.3.6.1.1.g are not affected by BOP ESFAS actuation logic cabinets SA036D and SA036E.

1. Auxiliary feedwater pump turbine steam supply valves (2). Actuated from BOP ESFAS actuation logic cabinet SA036C.
2. Auxiliary feedwater pump trip and throttle valve (1). Actuated from BOP ESFAS actuation logic cabinet SA036C.
3. Auxiliary feedwater flow control valves (8) (manual only). Normally open valves that are manually controlled from the control room or auxiliary shutdown panel through process instrumentation (Foxboro) cabinets in the control room.

The following components listed in USAR Section 7.3.6.1.1.g are affected by BOP ESFAS actuation logic cabinets SA036D and SA036E.

4. Auxiliary feedwater pump electric motors (2). Actuates on auxiliary feedwater actuation signal (AFAS).
 5. Essential service water supply valves (4) (auxiliary feedwater system valves). Actuates open on Low Suction header pressure.
 6. Condensate storage tank supply valves (3) (auxiliary feedwater system valves). Actuates closed on Low Suction header pressure.
 7. Steam generator blowdown isolation valves (4). Actuates on AFAS.
 8. Steam generator blowdown sample isolation valves (8). Actuates on AFAS.
- b. The three signals from the BOP ESFAS that affect explicitly modeled probabilistic risk assessment (PRA) components are containment purge isolation signal (CPIS), motor driven AFAS, and steam generator blowdown and sample isolation (actuates on AFAS). Only the AFAS for the motor driven auxiliary feedwater subsystems is credited in the PRA model. For Steam Generator blowdown, the PRA models both the operated valves and the manual valves, however AFAS (for steam generator blowdown and sample isolation valves) is not credited for the successful operation of the operated valves. Operator action OPA-SGR is required for successful isolation. Containment purge valves are modeled for isolation, but only as a spurious opening failure. Since the containment purge valves are normally closed, the CPIS is simply a confirmatory signal and is not credited in the PRA model.
- c. No changes to the risk insights are warranted.

RAI APLC-2: Risk Management for High-Risk Configurations

Section 3.3, "Risk Management/Work Control and Scheduling," of Attachment I to the LAR describes how the risk impact of maintenance, testing, and equipment outages is assessed. This section states that an On-Line Nuclear Safety and Generation Risk Assessment is completed for the current weekly schedule. This section also states that maintenance and testing activities added to the weekly schedule (preplanned or emergent) are assessed for their impact upon the existing On-Line Nuclear Safety and Generation Risk Assessment. This section further states that on-line daily maintenance and testing activities are planned, scheduled, and conducted in a manner to ensure both commercial and nuclear safety issues are assessed and the associated risks are managed. Finally, this section states that risk assessment and management is accomplished, in part, by developing compensatory measures to manage and minimize the operational risks associated with planned or emergent activities that are categorized as risk significant.

The staff's review noted that the LAR does not identify any potentially high-risk configurations that could exist if equipment is taken out of service simultaneously or compensatory measures that can mitigate such configurations. The staff expects the licensee to identify appropriate risk mitigation actions or compensatory measures from the risk insights.

Please address the following:

- a. Discuss the potentially high-risk configurations for the proposed change from internal events and internal flood initiators and identify corresponding compensatory measures for managing the risk from such configurations or discuss why compensatory measures are unnecessary for the proposed change.*
- b. Discuss how it will be ensured that any required compensatory measures based on the emergent condition(s) that occur while in the proposed Required Action N.1 are identified and implemented prior to the expiration of the 24-hour completion time.*

Response to RAI APLC-2

- a. There are no high-risk configurations strictly as a result of loss of one train of BOP ESFAS. One train of automatic actuation remains available. Further, manual actuation of the impacted train is still available. Section 5.11, Risk Insights, of Attachment II of Reference 1 describes a higher reliance on operator actions (specifically OPA-AFWACT and OPA-LSP), an increase in the common cause failures of actuation signals and the increase in ATWS Mitigation System Activation Circuitry (AMSAC) failure. Loss of room cooling to the unaffected motor drive auxiliary feedwater (AFW) pump from a flood-induced failure of Essential Service Water (ESW) or Component Cooling Water (CCW) is apparent in dominant sequences. WCNOC uses the tools described in part b of this response to help in recognition of risk, understanding the impact of the risk, and development of appropriate compensatory measures as appropriate.
- b. In Section 3.3 of Attachment I of Reference 1, WCNOC identified the use of procedure AP 22C-003, "On-Line Nuclear Safety and Generation Risk Assessment," for assessing the risk impact associated with performance of system/component maintenance, testing, and equipment outages. This procedure is utilized in conjunction with procedures AP 22C-007,

“Risk Management and Contingency Planning,” and AP 22C-008, “Qualitative Risk Management.”

Procedure AP 22C-003 provides direction for performance of computing the core damage frequency (CDF) and large early release frequency (LERF) risk involved for changes to the weekly On-Line Nuclear Safety Generation Risk Assessment due to emergent work activities and documentation of the results of any change in risk due to emergent work scope. This procedure also provides guidance on when to establish protected equipment barriers in accordance with procedure AI 22C-013, “Protected Equipment Program.” This procedure evaluates risk in aggregate.

Procedure AP 22C-008 is used to determine level of risk and develop risk mitigation actions from a specific activity perspective. Scheduled work activities are risk categorized as High, Medium, Low or routine. Work activities with a Medium or High risk level are further screened by a Senior Reactor Operator and requires consideration of risk mitigating actions based on the risk level. Section 6.2 of this procedure addresses the risk assessment of emergent work. This risk assessment identifies any potential changes in the work week’s aggregate risk. Based on the results of the risk classification of the activity and any revised aggregate risk, the Shift Manager will consider the following:

- a. Suspending work currently in progress.
- b. Rescheduling the start of pending work.
- c. Restoring equipment that is currently out of service.
- d. Minimize the potential consequence of performing work by: identifying any additional mitigating actions and identifying system parameters for augmented monitoring.

These procedural requirements provide the necessary tools for identifying any required compensatory measures that may be required for an emergent condition requiring the entry into TS 3.3.2 Condition N, Required Action N.1.

References:

1. WCNOC letter ET 21-0010 from S. L. Smith, WCNOC, to USNRC, “License Amendment Request – Revision to Technical Specification 3.3.2, “Engineered Safety Feature Actuation System (ESFAS) Instrumentation,” September 29, 2021. ADAMS Accession No. ML21272A283.
2. Electronic mail from S. A. Lee, USNRC, to J. Turner, WCNOC, “Request for additional information - Wolf Creek revision of Technical Specification 3.3.2, “Engineered Safety Feature Actuation System (ESFAS) Instrumentation” (EPID L-2021-LLA-0172)”, November 23, 2021. ADAMS Accession No. ML21327A260.