

Stephen E. Hedges Site Vice President April 6, 2010

WO 10-0013

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

- Reference: 1) Letter WO 09-0039, dated November 20, 2009, from M. W. Sunseri, WCNOC to USNRC
  - Letter dated March 12, 2010, from B. K. Singal, USNRC, to M. W. Sunseri, WCNOC, "Wolf Creek Generating Station – Request for Additional Information on License Amendment Request for Revision to Technical Specification 3.8.1, "AC Sources – Operating" TAC NO. ME2675)"
- Subject: Docket No. 50-482: Response to Request for Additional Information Related to License Amendment Request to Revise Technical Specification 3.8.1, "AC Sources – Operating"

## Gentlemen:

Reference 1 provided Wolf Creek Nuclear Operating Corporation's (WCNOC) application to revise Technical Specification (TS) 3.8.1, "AC Sources – Operating," consistent with the changes previously approved in Amendment No. 101 and with the guidance in Generic Letter 93-05, "Line-Item Technical Specifications Improvements to Reduce Surveillance Requirements for Testing During Power Operation (Generic Letter 93-05)." Reference 2 provided a request for additional information related to the application. Attachment I provides a response to the request for additional information.

The response to the request for additional information clarifies information provided in Reference 1, does not expand the scope of the application as originally noticed, and does not impact the conclusions of the NRC staff's original proposed no significant hazards consideration determination as published in the Federal Register (75 FR 4121). In accordance with 10 CFR 50.91, a copy of this submittal is being provided to the designated Kansas State official.

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This letter contains no commitments. If you have any questions concerning this matter, please contact me at (620) 364-4190, or Mr. Richard D. Flannigan at (620) 364-4117.

Sincerely,

Stephen E. Hedges

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SEH/rlt

Attachment

cc: E. E. Collins (NRC), w/a T. A. Conley (KDHE), w/a G. B. Miller (NRC), w/a B. K. Singal (NRC), w/a Senior Resident Inspector (NRC), w/a

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**STATE OF KANSAS** SS **COUNTY OF COFFEY** 

Stephen E. Hedges, of lawful age, being first duly sworn upon oath says that he is Site Vice President 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 E. Hedges Site Vice President

day of apri SUBSCRIBED and sworn to before me this  $\mathcal{L}^{\mathcal{H}}$ , 2010.

<u>Tiemeyes</u> uary 11,2014 Notary Public

Expiration Date

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# **Response to Request for Additional Information**

Reference 1 provided Wolf Creek Nuclear Operating Corporation's (WCNOC) application to revise Technical Specification (TS) 3.8.1, "AC Sources – Operating," consistent with the changes previously approved in Amendment No. 101 and with the guidance in Generic Letter 93-05, "Line-Item Technical Specifications Improvements to Reduce Surveillance Requirements for Testing During Power Operation (Generic Letter 93-05)." Reference 2 provided a request for additional information related to the application. The specific NRC question is provided in italics.

1. The Wolf Creek Generating Station (WCGS) Technical Specification (TS), 1.3 Completion Times, DESCRIPTION, states the following:

"The Completion Time is the amount of time allowed for completing a Required Action. It is referenced to the time of discovery of a situation (e.g., inoperable equipment or variable not within limits) that requires entering an ACTIONS Condition unless otherwise specified, providing the unit is in a MODE or specified condition stated in the Applicability of the LCO [Limiting Conditions for Operation]. Required Actions must be completed prior to the expiration of the specified Completion Time. An ACTIONS Condition remains in effect and the Required Actions apply until the Condition no longer exists or the unit is not within the LCO Applicability."

#### Question 1a

Given the existing Completion Time of 24 hours, please explain how the proposed revision to the Completion Time for Required Action B.3.1 and B.3.2 of TS 3.8.1 is compliant with WCGS TS LCO 3.0.2, and consistent with the TS 1.3, Completion Time, time of discovery description.

**Response:** The WCGS TS limiting condition for operation (LCO) 3.0.2 states:

Upon discovery of a failure to meet an LCO, the Required Actions of the associated Conditions shall be met, except as provided in LCO 3.0.5 and LCO 3.0.6.

If the LCO is met or is no longer applicable prior to expiration of the specified Completion Time(s), completion of the Required Action(s) is not required unless otherwise stated.

The above quote of TS 1.3, Completion Times, is only a partial quote of this section of the TSs. On page 1.3-2 of the WCGS TS, Section 1.3, also states, in part:

The above Completion Time extension does not apply to a Completion Time with a modified "time zero." This modified "time zero" may be expressed as a repetitive time (i.e., "once per 8 hours," where the Completion Time is referenced from a previous completion of the Required Action versus the time of Condition entry) or as a time modified by the phrase "from discovery . . ."

The proposed revision to the Completion Time for TS 3.8.1, Required Action B.3.1 and B.3.2 results in a modified "time zero" Completion Time and is therefore compliant with the WCGS TS LCO 3.0.2 and TS 1.3 time of discovery condition. The proposed revision is similar to the modified "time zero" Completion Time for TS 3.8.1, Required Action B.2.

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## Question 1b

Please explain the unique WCGS design requiring the proposed Completion Time change for performance of LCO 3.8.1, Condition B, Required Action B.3.1 and B.3.2.

**Response:** The WCGS diesel generator (DG) design is not unique. The basis for the change to the Completion Time is a rule of usage issue. With a DG declared inoperable and a subsequent failure or issue is identified after the initial 24 hour Completion Time of Required Action B.3.1 or B.3.2, Condition B is not re-entered because the DG is still inoperable. Therefore, default Condition H is required to be entered with 6 hours to be in MODE 3.

The industry Technical Specification Task Force (TSTF) intends to pursue a Traveler to make similar changes to the improved Standard Technical Specifications.

2. The WCGS TS 1.1, "Definitions," defines OPERABLE--OPERABILITY as follows:

"A system, subsystem, train, component, or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified safety function(s) and when all necessary attendant instrumentation, controls, normal or emergency electrical power, cooling and seal water, lubrication, and other auxiliary equipment that are required for the system, subsystem, train, component, or device to perform its specified safety function(s) are also capable of performing their related support function(s)."

The objective of LCO 3.8.1, Required Action B.3.1 and B.3.2 is to ensure that a failure of a diesel generator (DG) does not affect the opposite train DG capability to perform its specified safety function(s) (i.e., verify OPERABILITY of the opposite train DG).

Question 2a

Please explain how the term OPERABILITY, as defined by WCGS TS.1.1, will be determined for the OPERABLE DG with the proposed Note stating: "Not applicable if result of support system, independently testable component, or preplanned preventative maintenance testing."

**Response:** As discussed in Section 3.6 of Reference 1, the objective of LCO 3.8.1, Required. Action B.3 is to ensure that a failure of the DG itself, does not affect the opposite train DG capability to perform its specified safety function. Required Action B.3.1 requires the performance of a common cause failure determination. As discussed in the TS Bases for Required Action B.3.1 and B.3.2, if it can be determined that the cause of the inoperable DG does not exist on the OPERABLE DG, SR 3.8.1.2 does not have to be performed. If the cause of inoperability exists on the other DG, it would be declared inoperable upon discovery and Condition F of LCO 3.8.1 would be entered. The TSs and the TS Bases do not specifically require an Operability Determination to meet Required Action B.3.1. A common cause failure determination is required to be completed within 24 hours that could result in the inoperability of the OPERABLE DG.

The determination of OPERABILITY is a continual process that is in addition to the common cause failure determination of Required Action B.3.1. Section 4.3 of Regulatory Issue Summary 2005-20 (Reference 3), indicates the TSs are organized and implemented on the presumption that systems are OPERABLE. Without information to the contrary, it is reasonable to assume

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that once a system or component is established as OPERABLE it will remain OPERABLE. Appendix C.9 provides additional information that states:

Upon discovery of a support system that is not capable of performing its related support function(s), the most important consideration is the possibility of having lost all capability to perform a specified safety function. Upon declaring a support or supported system inoperable in one train, the required actions in the TSs should be implemented. The licensee must verify that the facility has not lost the complete capability to perform the specified safety function. The word "verify" as used here, covers examining logs or other information to determine if required features are out of service for maintenance or other reasons. The TSs may contain specific requirements or allowance regarding support systems. In all cases, a licensee's plant-specific TSs are governing.

For example, the "A" DG lube oil keep warm pump fails due to the bearings seizing which results in declaring the "A" DG inoperable. The "B" DG lube oil keep warm pump is still in service and maintaining engine lubrication. With the application of the proposed Note to Required Action B.3.1, a common cause failure determination would not be required as the DG lube oil keep warm pump is an independently testable component and the failure was specific to the "A" DG keep warm pump.

### Question 2b

Please explain how it can be ensured that a failure of a DG support system or independently testable component does not affect the OPERABILITY of the opposite train DG if the Required Actions of 3.8.1, Condition B, Required Actions B.3.1 or B.3.2 are not performed as currently required.

**Response:** As indicated in the response to Question 2a, the Operability Determination process is a continual process. When a support system or independently testable component is declared inoperable in one train, the Required Actions of the TSs are implemented and verification that the other train is still OPERABLE is conducted by various means including verifying the train is still in service through such things as the Equipment Out of Service Log, performing a system walkdown as appropriate, and reviewing the best available information.

Performance of Required Action B.3.2 does not ensure that a failure of a DG support system does not affect the OPERABILITY of the opposite train DG. As discussed in the example in the response to Question 3 below, performing SR 3.8.1.2 on the OPERABLE DG does not result in a determination of the supporting Essential Service Water (ESW) train OPERABILITY if there were a leak on the opposite ESW train.

# Question 2c

Please state what specific DG support instrumentation, controls, normal or emergency electrical power, cooling and seal water, lubrication, and other auxiliary equipment, that are required for the DG perform its specified safety function(s), will be covered by the proposed exception to TS 3.8.1 Condition B, Required Actions B.3.1 and B.3.2.

**Response:** Using the below diagram from WCNOC-163, "Mitigating System Performance Index (MSPI) Basis Document," the specific DG support systems that would be applicable for the proposed Note to Required Action B.3.1 and B.3.2 are those support systems outside the DG System Boundary (i.e., room cooling, DC power, and cooling water [Essential Service Water

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System]). Those support systems (excluding independently testable components) inside the DG System Boundary would be subject to a common cause failure determination.

This is consistent with Regulatory Guide (RG) 1.9, Revision 3, "Selection, Design, Qualification, and Testing of Emergency Diesel Generator Units Used as Class 1E Onsite Electric Power Systems at Nuclear Power Plants." Figure 1 of the RG identifies boundary and support system of emergency diesel generator systems. Section 2.1 of the RG states, in part:

Figure 1 illustrates those components and systems that should be considered within the emergency diesel generator boundary for purpose of evaluating failures. Systems that provide support to the emergency diesel generator and perform other plant functions are shown outside this boundary.



#### Question 2d

Please identify all "issues" affecting DG OPERABILITY that would not require a common cause failure determination and, for each issue, explain how TS OPERABILITY is met as defined above.

**Response:** As discussed in Section 3.6 of Reference 1, the Completion Time for Required Actions B.3.1 and B.3.2 is being revised to specify a Completion Time based on the discovery of an issue or failure of the DG. The reason for this proposed change is to provide the necessary

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time to perform a common cause failure determination or perform SR 3.8.1.2 in the event an additional issue/failure with the inoperable DG is identified subsequent to the initial inoperability declaration due to any cause other than an inoperable support system, an independently testable component, or preplanned preventative maintenance or testing. The proposed Note to the Required Actions would still be applicable to the additional issue/failure.

For example, if the "A" DG was declared inoperable for preplanned preventative maintenance and 30 hours into the maintenance activity a failure on the DG itself is identified, the existing Completion Time for Required Actions B.3.1 and B.3.2 would have expired and the default Condition (Condition H for WCGS) entered requiring a plant shutdown. Condition B (one DG inoperable) is not re-entered for the "A" DG on the identification of a subsequent issue/failure. The word "issue" was used to encompass a failure of the DG. The declaring of a DG to be inoperable is not in all cases due to a "failure."

3. The WCGS TS Bases 3.8.1, Condition B, Required Action B.3.1 and B.3.2 state:

"Required Action B.3.1 provides an allowance to avoid unnecessary testing of OPERABLE DG. If it can be determined that the cause of the inoperable DG does not exist on the OPERABLE DG, SR 3.8.1.2 does not have to be performed. If the cause of inoperability exists on the other DG, it would be declared inoperable upon discovery and Condition F of LCO 3.8.1 would be entered."

Additionally, page 7 of 12 of the license amendment request (LAR) submittal, Section 3.6, Evaluation, states in part:

In GL [Generic Letter] 93-05 [Line-Item Techncial Specifications Improvements to Reduce Surveillance Testing During Power Operation – Generic Letter 93-05"], the NRC [U.S. Nuclear Regulatory Commission] staff stated that, in performing the study documented in NUREG 1366 ["Improvements to Technical Specifications Surveillance Requirements," dated December 1992], the safety can be improved, equipment degradation [de]creased, and unnecessary burden eliminated by reducing the frequency of certain testing required in the TS during power operation. The changes eliminate testing that is likely to cause transients or excessive wear of equipment."

Question 3

Based on WCGS TS 3.8 Bases and the excerpt taken from the LAR, please explain why performance of a common cause failure determination on the OPERABLE DG, currently allowed by the WCGS TS as an alternative to performance of TS SR 3.8.1.2, does not provide a reasonable alternative to verify OPERABILITY of the opposite train DG and, therefore, the intent of GL 93-05.

**Response:** The WCGS TS 3.8.1 Bases for Required Actions B.3.1 and B.3.2 does provide an alternative to performance of TS SR 3.8.1.2. However, the common cause failure determination is not specifically an OPERABILITY determination as discussed in the response to Question 2.a.

In the example below, discussions with NRC Regional Inspectors indicated that an acceptable common cause failure determination should have included performance of ultrasonic testing of suspect locations on the B train of ESW and associated structural integrity evaluations. For this example, the common cause failure determination performed by Control Room personnel was

based on the previous acceptance regarding support systems and the visual observation of the building watch of the opposite train piping in the affected location. NRC Integrated Inspection Report 05000482/2009004 stated, in part: "The inspectors found that this type of visual evaluation did not meet the reasonable assurance standard specified in RIS 2005-20. Visual examinations can not identify below minimum wall thickness piping or piping flaws under insulation. The inspectors concluded the licensee's evaluation lacked a valid technical basis for determination that a common cause failure mechanism did not exist on the opposite train emergency diesel generator." It is highly likely that the level of common cause failure determination described by the inspectors and in the inspection B.3.1. In that regard, while performing SR 3.8.1.2 on the OPERABLE DG would verify DG OPERABILITY, it would not determine the OPERABILITY of the support system (ESW System).

### Essential Service Water Train B Leak

At 1115 CDT on June 30, 2009, a through wall leak ESW System piping just upstream of valve EF HV-038 was identified by shift crew personnel during building watch rounds. The "B" ESW train was declared inoperable based on Technical Requirement TR 3.4.17, "Structural Integrity," and Condition A of LCO 3.7.8, "Essential Service Water (ESW) System," was entered. Required Action A.1 of LCO 3.7.8 has a Note to enter the applicable Conditions and Required Actions of LCO 3.8.1, "AC Sources – Operating," for a diesel generator (DG) made inoperable by the ESW System. This resulted in the "B" DG being declared inoperable and entering Condition B of LCO 3.8.1.

Required Action B.3.1 for TS 3.8.1 is to determine if the OPERABLE DG is inoperable due to a common cause failure. Control room personnel utilized procedure SYS KJ-200, "Inoperable Emergency Diesel," when the DG was declared inoperable and determined that a common cause failure did not exist since the inoperability was due to a support system. Step 6.1.5 of SYS KJ-200 specifies to document the evaluation of common cause on the procedure cover sheet. The documented evaluation indicated that "B" DG inoperability was not common cause due to the "B" train ESW being inoperable. At 1202 CDT Required Action B.3.1 was exited. Subsequent discussions with control room staff indicated that a dedicated walkdown after identification of the leak on the "B" train was not performed. This decision was due to the affected location on the "A" train being in the same room and a leak on the "A" train would have been easily observed by the building watch as part of building watch rounds.

The NRC staff has accepted ASME Code Case N-513 (and later versions of the Case as approved by Regulatory Guide 1.147), "Evaluation Criteria for Temporary Acceptance of Flaws in Moderate Energy Class 2 or 3 piping Section XI, Division 1," as an acceptable alternative to the ASME Code requirements for evaluating the structural integrity for flaws identified in moderate-energy piping. Therefore, a structural integrity evaluation utilizing Code Case N-513-2 was performed and demonstrated that adequate structural integrity of the "B" ESW train existed. The "B" ESW train and "B" DG were declared OPERABLE at 2140 CDT.

Condition Report (CR) 00018217 was initiated on June 30, 2009 for the identified leak on EF138HBC-30. The structural integrity evaluation that resulted in declaring the "B" ESW train and the "B" DG OPERABLE was documented in Work Order (WO) 09-318203-002. In addition, five augmented examinations at locations similar in configuration to the identified leak were required in accordance with Code Case N-513-2. The code case requires the augmented examinations to be performed within 30 days. Three of the augmented examinations were performed on the B train on July 8, 2009 with acceptable results.

# References:

- 1. Letter WO 09-0039, Revision to Technical Specification 3.8.1, "AC Sources Operating," from M. W. Sunseri, WCNOC, to USNRC, November 20, 2009.
- NRC letter from B. K. Singal, USNRC, to M. W. Sunseri, WCNOC, "Wolf Creek Generating Station – Request for Additional Information on License Amendment Request for Revision to Technical Specification 3.8.1, "AC Sources – Operating" TAC NO. ME2675)," March 12, 2010.
- 3. NRC Regulatory Issue Summary 2005-20, Rev. 1, Revision to NRC Inspection Manual Part 9900 Technical Guidance, "Operability Determinations & Functionality Assessments for Resolution of Degraded or Nonconforming Conditions Adverse to Quality or Safety," April 16, 2008.