

# WOLF CREEK NUCLEAR OPERATING CORPORATION

Richard A. Muench  
Vice President Technical Services

**FEB 20 2002**

ET 02-0013

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

Reference: Letter ET 01-0021 dated August 7, 2001, from R. A. Muench, WCNOG,  
to USNRC

Subject: Docket No. 50-482: Supplemental Information for the Revision to  
Technical Specification 3.9.4, "Containment Penetrations"

Gentlemen:

The Reference proposed changes to Technical Specification (TS) 3.9.4, "Containment Penetrations," to allow the containment equipment hatch to be open during CORE ALTERATIONS and/or during movement of irradiated fuel assemblies within containment.

On September 7, 2001, questions pertaining to the Reference were electronically mailed to Wolf Creek Nuclear Operating Corporation (WCNOG) personnel. The responses to these questions were discussed in a meeting on November 15, 2001 between Mr. Jack Donohew, NRC, and Mr. Steve Wideman, WCNOG. It was requested that the responses be submitted to the NRC.

The supplemental information provided in Attachment I does not impact the conclusions of the No Significant Hazards Consideration Determination provided in the Reference.

*Acct*

*Rec'd 03/19/02*

A copy of this correspondence, with attachments, is being provided to the designated Kansas State Official. If you should have any questions regarding this submittal, please contact me at (620) 364-4034, or Mr. Tony Harris at (620) 364-4038.

Very truly yours,



Richard A. Muench

RAM/rlr  
Attachments

cc: V. L. Cooper (KDHE), w/a  
J. N. Donohew (NRC), w/a  
W. D. Johnson (NRC), w/a  
E. W. Merschoff (NRC), w/a  
Senior Resident Inspector (NRC), w/a

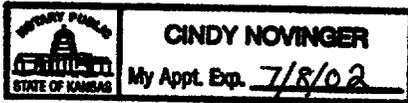
STATE OF KANSAS )  
 ) SS  
COUNTY OF COFFEY )

Richard A. Muench, of lawful age, being first duly sworn upon oath says that he is Vice President Technical Services 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 *Richard A. Muench*  
Richard A. Muench  
Vice President Technical Services

SUBSCRIBED and sworn to before me this 20<sup>th</sup> day of Feb., 2002.

*Cindy Novinger*  
Notary Public



Expiration Date July 8, 2002

## SUPPLEMENTAL INFORMATION

### Question:

1. How many days after the date of issuance of the amendment are needed to implement the amendment?

### Response:

As discussed in the cover letter of the original application, the amendment would be implemented prior to Refueling Outage 13, which is currently scheduled for September 2003.

### Question:

2. The proposed revision to LCO 3.9.4 does not include a requirement in the proposed LCO for administrative controls to exist when the equipment hatch is open during core alterations or fuel movement inside containment. The justification for the proposed amendment, however, is relying on administrative controls. Address why the requirement for administrative controls is not included in the revised LCO for the equipment hatch being open.

### Response:

The proposed revision to Limiting Condition for Operation (LCO) 3.9.4 did not specifically include administrative control requirements in the LCO since the proposed change is similar to the approval (Amendment No. 95, dated February 28, 1996) to allow the personnel air lock door to be open during CORE ALTERATIONS or movement of irradiated fuel assemblies. Administrative controls are specified in Technical Specification (TS) 3.9.4 for penetrations as proposed and approved by Industry/Technical Specification Task Force (TSTF) generic change TSTF-312. Another example is TS 3.6.3, "Containment Isolation Valves," which allows penetration flow paths to be unisolated under administrative controls. In these cases, the administrative controls are specified in the TS to ensure the status of multiple penetrations. As such, administrative controls on single penetrations such as the personnel air lock or equipment hatch do not need to be specified in the TS. Amendment Nos. 115 and 93 for the Vogtle units were issued on September 11, 2000 to allow the equipment hatch to be open and did not specify administrative controls in the LCO. The Wolf Creek Nuclear Operating Corporation (WCNOC) license amendment request changes to LCO 3.9.4 are consistent with those approved for the Vogtle plants.

### Question:

3. The proposed additional surveillance requirement (SR) does not have a reference to the capability for "rapid closure" of the equipment hatch. The justification for the proposed amendment, however, appears to be relying on administrative controls to promptly close the equipment hatch. Because the capability to close the equipment hatch and the capability to close the hatch promptly may be different as to what is required, address why the word "promptly" should not be added to the new SR.

### Response:

The same hardware, tools, equipment, and procedure are used to close the equipment hatch in all situations. The difference is that a designated individual will be present and available to direct closure of the equipment hatch when there is fuel in the reactor building and the

equipment hatch is open. This is the same administrative control as that utilized to allow the personnel air lock to be open during CORE ALTERATIONS or movement of irradiated fuel assemblies inside containment (License Amendment No. 95).

The purpose of the new Surveillance Requirement (SR) 3.9.4.2 is to ensure that the equipment necessary to close the equipment hatch is at hand so that the hatch can be closed promptly in the event of a fuel handling accident inside containment. This equipment is dedicated for this purpose, and by adding a SR to ensure that the equipment is at hand precludes delays that would occur if the tools, etc. had to be rounded up. As such, there is no distinction between that which is required to close the equipment hatch and that which is required to close the hatch promptly.

The WCNOG license amendment request to add new SR 3.9.4.2 is consistent with those approved for the Vogtle plant.

**Question:**

4. It is believed that the written procedures/procedural controls discussed in the application should also include the following: (1) a single person responsible to coordinate the designated individuals that are readily available to close the equipment hatch and the control room should be in direct communication to that single person, (2) all tools and equipment required to close the hatch are on hand and dedicated to that purpose, and (3) before the outage personnel responsible for the hatch closure are trained on the procedures and equipment to close the hatch promptly. Address why these three items should not be added to the description of the administrative controls.

**Response:**

Concerning item (1) in the above question, the existing administrative controls ensure that a designated individual is readily available to close the personnel air lock following an evacuation that would occur in the event of a fuel handling accident. This same individual is responsible for ensuring closure of the equipment hatch, thus additional written procedures/procedural controls are not necessary. These administrative controls are consistent with the administrative controls approved in Amendment No. 95 for the personnel air lock and Amendment No. 135 for containment penetrations. Direct and continuous communication with the control room is not necessary as the designated individual is readily available via other reliable communication systems.

Concerning item (2) in the above question, the proposed SR demonstrates that the necessary hardware, tools, and equipment are available to install the equipment hatch. The proposed TS Bases further states that the 7 day Frequency is adequate considering that the hardware, tools, and equipment are dedicated to support equipment hatch closure. As such, the TS SR is sufficient for ensuring the necessary equipment is available and does not need to be duplicated as an administrative control.

Concerning item (3) in the above question, training is provided to selected individuals responsible for various containment operations activities including personnel air lock and equipment hatch operation, as well as conditions that may require closure of these penetrations.

As discussed above, it is WCNOG's intent that the administrative controls associated with the various containment openings be the same.

**Question:**

5. There are statements in the application that (1) "a backup propane generator is available if offsite power is lost" and (2) "during shutdown conditions administrative controls ensure that an appropriate missile barrier is in place during the threat of severe weather that could result in the generation of tornado driven missiles." Address why these statements should not be included in the description of administrative controls, because it appears that they are also being relied upon to either close the equipment hatch promptly or protect the inside of containment from external missiles while the hatch is open.

**Response:**

The statements in the application concerning the backup propane generator and the administrative controls for installing an appropriate missile barrier in the event of severe weather are contingency actions for an abnormal event. These contingencies are addressed in procedure MPM C151Q-01, "Containment Equipment Hatch Maintenance and Operation." As discussed in the response to Question 4, it is WCNO's intent that the administrative controls associated with the various containment openings be the same.

**Question:**

6. Address why the two previous bullets should not be included in the discussion of administrative controls that is proposed to be added to the Bases of the Technical Specifications (TSs). A distinction should be made between specific administrative controls that are being relied upon to promptly close the equipment hatch, and what are examples of administrative controls to perform this function.

**Response:**

The responses to Questions 4 and 5 address this question. It is WCNO's intent that the administrative controls associated with the various containment openings be the same and all the specific actions necessary for the proper closure of the equipment hatch are not necessary to be specified in the TS Bases.

**Question:**

7. The staff will be relying on the description of the administrative controls if it approved the proposed amendment. The proposed changes to the TS Bases are the only description of the administrative controls being relied upon where changes to the controls are governed by the regulations or the TSs. Changes to the Bases are governed by the TSs (i.e., the change controls are 10 CFR 50.59). Because the staff would be relying on these administrative controls, it requests a condition in the amendment that the proposed changes to the TS Bases would be added to the Bases during the implementation of the amendment so that (1) the requirements for the administrative controls are in place before the proposed amendment can be used and (2) any changes to the administrative controls would be governed by the TSs. Address the acceptability of such a condition on the license.

**Response:**

The changes to the TS Bases are considered part of the implementation of the amendment and will be incorporated as part of implementation. WCNOC will adopt the TS Bases changes with the implementation of the license amendment.

**Question:**

8. Provide the estimated time for the rapid closure of the open equipment hatch and the basis for the estimate. Discuss the hatch closure time with respect to (1) the stated minimum time of 5 hours for the core to boil with loss of residual heat removal (RHR) cooling at the beginning of fuel offload with the minimum succeeding time for fuel damage and fission product release, and (2) the time for severe weather, with winds high enough to carry missiles, to reach the site.

**Response:**

The equipment hatch is typically closed in less than one hour. This is based upon review of past plant logs and discussions with containment coordinators. Thus, this time is well within the estimated minimum time of 5 hours for the core to boil if a loss of Residual Heat Removal (RHR) cooling event occurs at the beginning of fuel offload with the refueling pool water level being maintained at 23 feet above the reactor vessel flange.

With respect to (2), see the response to Question 10.

**Question:**

9. Explain how the potential accident of the equipment hatch being open during an outage and a tornado missile entering the containment through the open hatch is addressed for the site? Is the potential accident analyzed in the Updated Safety Analysis Report (USAR)? Discuss if the reference in the application to having an "appropriate" missile barrier in place before severe weather reaches the site is the means by which this accident is addressed.

**Response:**

Updated Safety Analysis Report (USAR) Section 9.1.4 indicates that the fuel handling system, in accordance with the General Design Criteria (GDC-2), is protected from the effects of external events, including tornadoes and the missiles generated from the tornado. USAR Section 3.5.1.4 discusses missiles generated by natural phenomenon. USAR Section 3.5.2 which discusses which systems are to be protected, states in part: "All safety-related systems and components to be protected from tornado missiles are enclosed within protective structures which meet the requirements of Regulatory Guide 1.117. Openings to these structures are designed to prevent the entry of the design basis missile when the result would preclude the safety functions of the enclosed system or components. Prevention of missile entry includes the use of missile doors and barriers at openings and adjacent buildings as shields in penetration areas. The missile barriers are designed utilizing the procedures given in Section 3.5.3." USAR Section 3.8.1.2.1.1, states in part: "A moveable missile shield is provided on the outside of the reactor building to protect the equipment hatch. During shutdown conditions, the equipment hatch cover with 6 bolts provides adequate missile protection for the safety related

equipment inside the containment building. Administrative controls ensure the hatch cover is in place during the threat of severe weather that could result in the generation of tornado driven missiles." The equipment hatch is the appropriate missile barrier discussed in the original application.

In 1998, Configuration Change Package 7784 was generated to address the use of the equipment hatch for missile protection in MODES 5, 6, and fuel offloaded. The analysis for the reactor building equipment hatch (ZX01) in plant MODES 5, 6, and fuel offloaded was performed in calculation 16577-753-C002, revision 0. The methodology used for this calculation is from Bechtel Topical Report BC-TOP-3-A, "Tornado and Extreme Wind Design Criteria for Nuclear Power Plants." This topical report provides criteria for the design of nuclear power plant structures for extreme winds and tornado effects. For WCGS, the characteristics of externally generated missiles are listed in USAR Table 3.5-1. This Configuration Change Package determined that the equipment hatch connected to the containment liner plate with 6 bolts (bolt numbers 1, 2, 6, 7, 19, 20) can withstand tornado missile impact. However, in this configuration, a local portion of the hatch will yield and deform permanently. This yielding will not create any perforation or penetration in the hatch. USAR Section 3.5.3, Barrier Design Procedure, states in part: "Tornado-resistant structures may sustain local missile damage, such as partial penetration and local cracking and/or permanent deformation, provided that structural integrity is maintained, perforation is precluded, and the contained seismic Category I systems, components, and equipment are not subjected to damage by secondary missiles, such as from concrete spalling and scabbing."

**Question:**

10. Discuss if the intent is to have the "appropriate" missile barrier in place before the severe weather reaches the site, with the equipment hatch open or not fully in place, to protect the inside of the containment from tornado-driven missiles, or is it the intent to have the equipment hatch back in place and bolted before the severe weather reaches the site to protect the containment? Discuss what is in place to ensure that the intent will be met.

**Response:**

The intent is that the equipment hatch be installed upon the arrival of threatening weather conditions which could generate missiles. Procedure MPM C151Q-01, "Containment Equipment Hatch Maintenance and Operation," specifies that the equipment hatch door shall be in place with six bolts installed upon the arrival of threatening weather conditions which could generate missiles. Furthermore, procedure OFN SG-003, "Natural Events," is entered for a tornado warning and verifies that the equipment hatch is closed.

Procedure AI 14-006, "Severe Weather," provides the following definitions:

Severe Weather/Tornado Watch – Severe weather is possible within the designated watch area. Personnel should be alert to adverse weather changes.

Severe Weather Warning – Severe weather has been reported or is imminent. Personnel should take the necessary precautions.

Tornado Warning – A tornado has been sighted and could strike the plant. Personnel should take cover immediately.

**Question:**

11. Describe the "appropriate" missile barrier. Given the function of the barrier described in the two previous bullets, provide the basis that the barrier will perform that function with respect to the Wolf Creek licensing basis tornado missiles in USAR Section 3.5.

**Response:**

See the response to Question 9.

**Question:**

12. Discuss the procedure(s) that define the severe weather that could result in tornado missiles at the site and, therefore, would cause (1) an appropriate missile barrier to be put in place to protect the inside of containment from such missiles and/or (2) the equipment hatch to be put back in place with sufficient bolts to protect the inside of containment. Explain what will be done by the procedure(s) in response to the severe weather, including what is required related to having the equipment hatch open (1) during outages and (2) during core alterations or fuel movement inside containment.

**Response:**

See the response to Question 10.

### LIST OF COMMITMENTS

The following table identifies those actions committed to by Wolf Creek Nuclear Operating Corporation (WCNOC) in this document. Any other statements in this submittal are provided for information purposes and are not considered to be commitments. Please direct questions regarding these commitments to Mr. Tony Harris, Manager Regulatory Affairs at Wolf Creek Generating Station, (620) 364-4038.

<b>COMMITMENT</b>	<b>Due Date/Event</b>
The changes to the TS Bases are considered part of the implementation of the amendment and will be incorporated as part of implementation. WCNOC will adopt the TS Bases with the implementation of the license amendment.	License amendment implementation