

# **WOLF CREEK**

NUCLEAR OPERATING CORPORATION

November 16, 2007

Matthew W. Sunseri  
Vice President Operations and Plant Manager

WO 07-0029

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

Reference: 1) Letter ET 06-0038, dated September 27, 2006, from T. J. Garrett,  
WCNOC, to USNRC

Subject: Docket No. 50-482: Wolf Creek Generating Station License Renewal  
Application, Amendment 5

Gentlemen:

Reference 1 provided Wolf Creek Nuclear Operating Corporation's (WCNOC) License Renewal Application (LRA) for the Wolf Creek Generating Station (WCGS). As part of the review for license renewal, the Nuclear Regulatory Commission (NRC) Region IV staff conducted a two week inspection at WCGS. During the inspection, WCNOC agreed to amend the WCGS LRA.

The enclosure provides Amendment 5 to the WCGS LRA. As mentioned, the amended pages include those changes discussed during inspection activities and minor corrections identified by WCNOC.

A121  
NRR

This letter contains no commitments. If you have any questions concerning this matter, please contact me at (620) 364-4008, or Mr. Kevin Moles at (620) 364-4126.

Sincerely,

A handwritten signature in black ink that reads "Matthew W. Sunseri". The signature is written in a cursive style with a large, looped 'M' and 'S'.

Matthew W. Sunseri

MWS/rit

Enclosure – Amendment 5

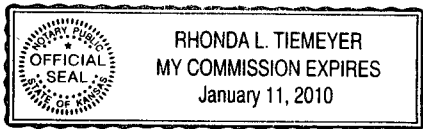
cc: E. E. Collins (NRC), w/e  
J. N. Donohew (NRC), w/e  
V. G. Gaddy (NRC), w/e  
V. Rodriguez (NRC), w/e  
Senior Resident Inspector (NRC), wo/e

STATE OF KANSAS     )  
                                  ) SS  
COUNTY OF COFFEY    )

Matthew W. Sunseri, of lawful age, being first duly sworn upon oath says that he is Vice President Operations and Plant Manager 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 Matthew W. Sunseri  
Matthew W. Sunseri  
Vice President Operations and Plant Manager

SUBSCRIBED and sworn to before me this 16<sup>th</sup> day of Nov., 2007.



Rhonda L. Tiemeyer  
Notary Public

Expiration Date January 11, 2010

Enclosure to WO 07-0029

**Wolf Creek Generating Station License Renewal Application  
Amendment 5**

## **B2.1.16 One-Time Inspection**

### **Program Description**

The One-Time Inspection Program conducts one-time inspections of plant system piping and components to verify the effectiveness of the Water Chemistry Program (B2.1.2), Fuel Oil Chemistry Program (B2.1.14), and Lubricating Oil Analysis Program (B2.1.23). The aging effects to be evaluated by the One-Time Inspection Program are loss of material, cracking, and reduction of heat transfer.

The One-Time Inspection Program specifies corrective actions and increased sampling of components if aging effects are found during an inspection. The inspections required by this program will be implemented and completed within the ten year period prior to the period of extended operation. Completion of the One-Time Inspection Program in this time period will assure that potential aging effects will be manifested based on at least 30 years of WCGS operation.

Major elements of the One-Time Inspection Program include identification of component populations subject to one-time inspection based on common materials and environments; determination of inspection sample size using established statistical methodologies based on the component population within each material-environment group; selection of specific components within the sample in each material-environment group for inspection based on specified criteria such as service period, operating conditions, and design margins; conducting ASME Code Section XI NDE inspections of the selected components within the sample; and, evaluation of inspection results and initiation of corrective action for unacceptable results that could lead to loss of component intended function.

The One-Time Inspection Program is a new program and will be implemented within the ten year period prior to the period of extended operation. NDE examinations of piping and components for one-time inspections will be conducted in accordance with ASME Section XI Code requirements. NDE acceptance criteria for identified aging effects will be consistent with the specific ASME Section XI examination procedure used for each inspection.

### **NUREG-1801 Consistency**

The One-Time Inspection Program is a new program that, when implemented, will be consistent with NUREG-1801, Section XI.M32, "One Time Inspection."

### **Exceptions to NUREG-1801**

None

### **Enhancements**

None

**Operating Experience**

There is no programmatic operating experience applicable to the new One-Time Inspection Program.

**Conclusion**

The implementation of the One-Time Inspection Program will provide reasonable assurance that aging effects will be managed such that the systems and components within the scope of this program will continue to perform their intended functions consistent with the current licensing basis for the period of extended operation.

## **B2.1.32 Structures Monitoring Program**

### **Program Description**

The Structures Monitoring Program manages the cracking, loss of material, and change in material properties by monitoring the condition of structures and structural supports that are within the scope of license renewal. The Structures Monitoring Program implements the requirements of 10 CFR 50.65 and is consistent with the guidance of NUMARC 93-01, Revision 2 and Regulatory Guide 1.160, Revision 2, "Monitoring the Effectiveness of Maintenance at Nuclear Power Plants." The Structures Monitoring Program provides inspection guidelines and walkdown checklists for concrete elements, structural steel, masonry walls, treated wood, structural features (e.g., caulking, sealants, roofs, etc.), structural supports, and miscellaneous components such as doors. The inspection methods, inspection frequency, and inspector qualifications are in accordance with WCGS procedures, which reference ACI 349.3R-96, ASCE 11-90, and ACI 201.1R-92.

The Structures Monitoring Program includes all masonry walls within the scope of license renewal. The Structures Monitoring Program also inspects supports for equipment, piping, conduit, cable tray, HVAC, and instrument components. The Structures Monitoring Program monitors groundwater for pH, sulfates, and chlorides. Two samples of groundwater are tested every five years.

Though coatings may have been applied to the external surfaces of structural members, no credit was taken for these coatings in the determination of aging effects for the underlying materials. The Structures Monitoring Program evaluates the condition of the coatings as an indication of the condition of the underlying materials.

### **NUREG-1801 Consistency**

The Structures Monitoring Program is an existing program that, following enhancement, will be consistent with NUREG-1801, Section XI.S6, "Structures Monitoring Program."

### **Exceptions to NUREG-1801**

None

### **Enhancements**

Prior to the period of extended operation, the following enhancement will be implemented in the following program elements:

#### *Scope of Program (Element 1)*

Procedures will be enhanced to add disconnect enclosure and foundation in the switchyard.

*Parameters Monitored or Inspected - Element 3*

Procedures will be enhanced to add inspection parameters for treated wood.

The Structures Monitoring Program will be enhanced to monitor groundwater for pH, sulfates, and chlorides. Two samples of groundwater will be tested every five years.

**Operating Experience**

The baseline walkdown inspection for the Structures Monitoring Program occurred in 1998. The results of this inspection were primarily categorized as Acceptable with Minor Degradation. All items found to have more severe aging effects were categorized as Acceptable with Degradation and have been reexamined and evaluated for further action. There were no items identified that required a categorization of Major Degradation.

During the five-year re-inspection in 2002/2003, four items were identified to have increased degradation. Two of those items previously categorized as Acceptable with Degradation are not within the scope of license renewal. Two items that were previously categorized as Acceptable with Minor Degradation were noted to have increased degradation and reclassified to Acceptable with Degradation. One was corrosion on an essential service water hanger in the communications corridor, and the other was corrosion on a steel column in the turbine building. Corrective action has been initiated. Five new items categorized as Acceptable with Degradation were reported during the 2002/2003 inspection. None of these items required immediate action to maintain their intended functions and all will be monitored for future changes.

**Conclusion**

The continued implementation of the Structures Monitoring Program provides reasonable assurance that aging effects will be managed such that the systems and components within the scope of this program will continue to perform their intended functions consistent with the current licensing basis for the period of extended operation.



Section 2.4  
SCOPING AND SCREENING RESULTS:  
STRUCTURES

Table 2.4-23 Component Types Assigned to Supports by Building/Structure

| Component Types Assigned to Supports       | Electrical Components    |                       |                                  | Mechanical Components      |                                  |                        |                                    |  |                    |                     |                     |
|--|--------------------------|-----------------------|----------------------------------|----------------------------|----------------------------------|------------------------|------------------------------------|--|--------------------|---------------------|---------------------|
|  | Cable Trays and Supports | Conduits and Supports | Electrical Panels and Enclosures | ASME Class 1 Pipe Supports | ASME Class 2 and 3 Pipe Supports | Non-ASME Pipe Supports | Mechanical Equipment Code Supports | Mechanical Equipment Non-Code Supports | HVAC Duct Supports | Instrument Supports | Insulation Supports |
| Reactor Building                           | X                        | X                     | X                                | X                          | X                                | X                      | X                                  | X                                      | X                  | X                   | X                   |
| Control Building                           | X                        | X                     | X                                |                            | X                                | X                      | X                                  | X                                      | X                  | X                   | X                   |
| Diesel Generator Bldg                      | X                        | X                     | X                                |                            | X                                | X                      | X                                  |  | X                  | X                   | X                   |
| Turbine Building                           | X                        | X                     | X                                |                            |                                  | X                      |                                    | X                                      |                    | X                   |                     |
| Radwaste Building                          | X                        | X                     | X                                |                            |                                  | X                      |                                    |  |                    |                     |                     |
| Auxiliary Building                         | X                        | X                     | X                                |                            | X                                | X                      | X                                  | X                                      | X                  | X                   | X                   |
| Emer. Fuel Oil Tank Access Vaults          |                          | X                     | X                                |                            |                                  |                        |                                    |  |                    | X                   |                     |
| ESW Elec. Ductbanks and Manways            | X                        |                       |                                  |                            |                                  |                        |                                    |  |                    |                     |                     |
| Communications Corridor                    |                          |                       |                                  |                            |                                  |                        |                                    |  |                    |                     |                     |
| Transmission Towers                        |                          |                       | X                                |                            |                                  |                        |                                    |  |                    |                     |                     |
| ESW Access Vaults                          |                          |                       |                                  |                            |                                  |                        |                                    |  |                    |                     |                     |
| Fuel Building                              | X                        | X                     | X                                |                            | X                                | X                      | X                                  | X                                      | X                  | X                   | X                   |
| ESW Pumphouse                              | X                        | X                     | X                                |                            | X                                | X                      | X                                  |  | X                  | X                   | X                   |
| CW Screenhouse                             | X                        | X                     | X                                |                            |                                  | X                      |                                    | X                                      |                    | X                   |                     |
| Ultimate Heat Sink                         |                          |                       |                                  |                            |                                  |                        |                                    |  |                    |                     |                     |
| Main Dam/Aux Spillway                      |                          |                       |                                  |                            |                                  |                        |                                    |  |                    |                     |                     |
| ESW Valve House                            |                          | X                     | X                                |                            |                                  |                        |                                    | X                                      |                    | X                   |                     |
| Refueling Water Storage Tank Fnd           |                          | X                     | X                                |                            |                                  |                        |                                    |  |                    | X                   |                     |
| Condensate Water Storage Tank Fnd          |                          | X                     | X                                |                            |                                  | X                      |                                    |  |                    | X                   |                     |
| Concrete Supports for Station Transformers | X                        | X                     | X                                |                            |                                  |                        |                                    |  |                    |                     |                     |

**Section 3.5**  
**AGING MANAGEMENT OF CONTAINMENTS,  
STRUCTURES AND COMPONENT SUPPORTS**

*Table 3.5.2-10 Containments, Structures, and Component Supports – Summary of Aging Management Evaluation - Transmission Towers*

| <b>Component Type</b> | <b>Intended Function</b> | <b>Material</b> | <b>Environment</b>                    | <b>Aging Effect Requiring Management</b>  | <b>Aging Management Program</b>         | <b>NUREG-1801 Vol. 2 Item</b> | <b>Table 1 Item</b> | <b>Notes</b> |
|-----------------------|--------------------------|-----------------|---------------------------------------|---|---|-------------------------------|---------------------|--------------|
| Concrete Elements     | NSRS                     | Concrete        | Atmosphere/Weather (Structural) (Ext) | Cracking due to expansion   | Structures Monitoring Program (B2.1.32) | III.A3-2                      | 3.5.1.27            | A            |
| Concrete Elements     | NSRS                     | Concrete        | Atmosphere/Weather (Structural) (Ext) | Cracks and distortion   | Structures Monitoring Program (B2.1.32) | III.A3-3                      | 3.5.1.28            | A            |
| Concrete Elements     | NSRS                     | Concrete        | Atmosphere/Weather (Structural) (Ext) | Loss of material (spalling, scaling) and cracking                                     | Structures Monitoring Program (B2.1.32) | III.A3-6                      | 3.5.1.26            | A            |
| Concrete Elements     | NSRS                     | Concrete        | Atmosphere/Weather (Structural) (Ext) | Cracking, loss of bond, and loss of material (spalling, scaling)                      | Structures Monitoring Program (B2.1.32) | III.A3-9                      | 3.5.1.23            | A            |
| Concrete Elements     | NSRS                     | Concrete        | Atmosphere/Weather (Structural) (Ext) | Increase in porosity and permeability, cracking, loss of material (spalling, scaling) | Structures Monitoring Program (B2.1.32) | III.A3-10                     | 3.5.1.24            | A            |
| Concrete Elements     | NSRS                     | Concrete        | Buried (Structural) (Ext)             | Cracking due to expansion   | Structures Monitoring Program (B2.1.32) | III.A3-2                      | 3.5.1.27            | A            |

**Section 3.5**  
**AGING MANAGEMENT OF CONTAINMENTS,**  
**STRUCTURES AND COMPONENT SUPPORTS**

*Table 3.5.2-10 Containments, Structures, and Component Supports – Summary of Aging Management Evaluation – Transmission Towers (Continued)*

| <b>Component Type</b> | <b>Intended Function</b> | <b>Material</b>                     | <b>Environment</b>                     | <b>Aging Effect Requiring Management</b>  | <b>Aging Management Program</b>         | <b>NUREG-1801 Vol. 2 Item</b> | <b>Table 1 Item</b> | <b>Notes</b> |
|-----------------------|--------------------------|-------------------------------------|--|---|---|-------------------------------|---------------------|--------------|
| Concrete Elements     | NSRS                     | Concrete                            | Buried (Structural) (Ext)              | Cracks and distortion   | Structures Monitoring Program (B2.1.32) | III.A3-3                      | 3.5.1.28            | A            |
| Concrete Elements     | NSRS                     | Concrete                            | Buried (Structural) (Ext)              | Cracking, loss of bond, and loss of material (spalling, scaling)                      | Structures Monitoring Program (B2.1.32) | III.A3-4                      | 3.5.1.31            | A            |
| Concrete Elements     | NSRS                     | Concrete                            | Buried (Structural) (Ext)              | Increase in porosity and permeability, cracking, loss of material (spalling, scaling) | Structures Monitoring Program (B2.1.32) | III.A3-5                      | 3.5.1.31            | A            |
| Concrete Elements     | NSRS                     | Concrete                            | Buried (Structural) (Ext)              | Loss of material (spalling, scaling) and cracking                                     | Structures Monitoring Program (B2.1.32) | III.A3-6                      | 3.5.1.26            | A            |
| Concrete Elements     | NSRS                     | Concrete                            | Buried (Structural) (Ext)              | Increase in porosity and permeability, loss of strength                               | Structures Monitoring Program (B2.1.32) | III.A3-7                      | 3.5.1.32            | A            |
| Transmission Tower    | NSRS                     | Carbon Steel (Galvanized or Coated) | Atmosphere/ Weather (Structural) (Ext) | Loss of material  | Structures Monitoring Program (B2.1.32) | III.A3-12                     | 3.5.1.25            | A            |
| Transmission Tower    | NSRS                     | Carbon Steel (Galvanized or Coated) | Encased in Concrete (Ext)              | None  | None                                    | VII.J-21                      | None                | C            |
| Transmission Tower    | NSRS                     | Treated Wood                        | Atmosphere/ Weather (Structural) (Ext) | Loss of material  | Structures Monitoring Program (B2.1.32) | None                          | None                | F, 1         |
| Transmission Tower    | NSRS                     | Treated Wood                        | Buried (Structural) (Ext)              | Loss of material  | Structures Monitoring Program (B2.1.32) | None                          | None                | F, 1         |

**Section 3.5**  
**AGING MANAGEMENT OF CONTAINMENTS,  
STRUCTURES AND COMPONENT SUPPORTS**

Notes for Table 3.5.2-10:

Standard Notes:

- A Consistent with NUREG-1801 item for component, material, environment, and aging effect. AMP is consistent with NUREG-1801 AMP.
- C Component is different, but consistent with NUREG-1801 item for material, environment, and aging effect. AMP is consistent with NUREG-1801 AMP.
- F Material not in NUREG-1801 for this component.

Plant Specific Notes:

- 1 NUREG 1801 does not provide a line in which treated wood is evaluated.

## A1.16 ONE-TIME INSPECTION

The One-Time Inspection Program conducts one-time inspections of plant system piping and components to verify the effectiveness of the Water Chemistry Program (A1.2), Fuel Oil Chemistry Program (A1.14), and Lubricating Oil Analysis Program (A1.23). The aging effects to be evaluated by the One-Time Inspection Program are loss of material, cracking, and reduction of heat transfer. The One-Time Inspection Program determines non-destructive examination (NDE) sample size for each material-environment group using established statistical methodologies and selects piping/component inspection locations within the sample that are based on service period, operating conditions, and design margins. The One-Time Inspection Program specifies corrective actions and increased sampling of components if aging effects are found.

This new program will be implemented and completed within the ten-year period prior to the period of extended operation.

## **A1.32 STRUCTURES MONITORING PROGRAM**

The Structures Monitoring Program manages the cracking, loss of material, and change in material properties by monitoring the condition of structures and structural supports that are within the scope of license renewal. The Structures Monitoring Program implements the requirements of 10 CFR 50.65 and is consistent with the guidance of NUMARC 93-01, Revision 2 and Regulatory Guide 1.160, Revision 2.

The Structures Monitoring Program provides inspection guidelines and walkdown checklists for concrete elements, structural steel, masonry walls, treated wood, structural features (e.g., caulking, sealants, roofs, etc.), structural supports, and miscellaneous components such as doors. The Structures Monitoring Program includes all masonry walls within the scope of license renewal. The Structures Monitoring Program also inspects supports for equipment, piping, conduit, cable tray, HVAC, and instrument components. The Structures Monitoring Program monitors groundwater for pH, sulfates, and chlorides.

Prior to the period of extended operation, procedures will be enhanced to add inspection parameters for treated wood, to add the disconnect enclosure and foundation in the switchyard, and to monitor groundwater for pH, sulfates, and chlorides. Two samples of groundwater will be tested every five years.

**2.4.10 Transmission Towers**

**Structure Description**

The transmission tower structures support two independent and structurally separated overhead transmission power lines. The first transmission power line connects the main transformer to the 345-kV switchyard and consists of two deadend structures, a steel transmission tower, and a wooden H-frame structure. The second transmission power line connects the 345-kV switchyard to the start-up transformer and consists of two deadend structures, a steel transmission tower, and a wooden H-frame structure. Both lines run approximately 700 feet due north of the turbine building then make a right angle turn into the 345-kV switchyard. Disconnect 13-21/13-23 in the switchyard is housed in an electrical enclosure with a concrete foundation. The electrical enclosure is evaluated in Section 2.4.22, Supports.

**Structure Function**

The transmission tower structures provide structural support and suspension of overhead transmission power lines that connect the station power block to the 345-kV switchyard.

Transmission tower structures are required for station blackout recovery. They are within the scope of license renewal based on the criteria of 10 CFR 54.4(a)(3).

**WCGS USAR References**

Additional details of the transmission tower structures are included in USAR Section 8.2.1.2.

**Component-Function Relationship Table**

The component types subject to aging management review are indicated in Table 2.4-10, Transmission Towers.

*Table 2.4-10 Transmission Towers*

| Component Type     | Intended Function                    |
|--------------------|--------------------------------------|
| Concrete Elements  | Nonsafety-related Structural Support |
| Transmission Tower | Nonsafety-related Structural Support |

The aging management review results for these component types are provided in Table 3.5.2-10, Containments, Structures, and Component Supports - Summary of Aging Management Evaluation - Transmission Towers.