

Lent, Susan

From: Beltz, Terry
Sent: Thursday, June 14, 2012 1:40 PM
To: 'stwidem@WCNOC.com'
Cc: 'wimuile@wcnoc.com'; Hall, Randy; Scales, Kerby; Matharu, Gurcharan; Burkhardt, Janet; Lent, Susan
Subject: Wolf Creek Generating Station - Request for Additional Information re: License Amendment Request to Change EDG Surveillance Requirements (TAC No. ME7674).
Attachments: Request for Additional Information (ME7674).docx

June 14, 2012

Mr. Steve G. Wideman
Wolf Creek Generating Station
Wolf Creek Nuclear Operating Company

Dear Mr. Wideman:

By letter dated November 30, 2011 (Agencywide Documents Access and Management System Accession No. ML11340A033), the Wolf Creek Nuclear Operating Corporation (WCNOC) submitted a License Amendment Request (LAR) to change the Technical Specifications (TS) for the Wolf Creek Generating Station. Specifically, the changes would modify the TS Surveillance Requirements (SR) by providing surveillance enhancements to improve operation and testing of the Emergency Diesel Generators and provide a more restrictive voltage and frequency band for operation when not connected in parallel with the offsite sources.

The NRC staff has reviewed the information provided by WCNOC in the LAR and determined that additional information is needed to complete its review. The request for additional information (RAI) is provided as an attachment to this e-mail. The staff is requesting a written response to the RAIs no later than July 27, 2012.

Please contact either Randy Hall at (301) 415-4032, or me if you have a concern meeting the proposed schedule for responding to this request and/or if WCNOC would like to have a conference call to discuss the RAIs.

Sincerely,

Terry A. Beltz, Senior Project Manager
Plant Licensing Branch III-1
Division of Operating Reactor Licensing
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U.S. Nuclear Regulatory Commission
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REQUEST FOR ADDITIONAL INFORMATION
WOLF CREEK NUCLEAR OPERATING CORPORATION
WOLF CREEK GENERATING STATION
DOCKET NO. 50-482
LICENSE AMENDMENT REQUEST RELATING TO
CHANGES TO EMERGENCY DIESEL GENERATOR SURVEILLANCE REQUIREMENTS
TAC NO. ME7674

By letter dated November 30, 2011 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML11340A033), Wolf Creek Nuclear Operating Corporation (WCNOC, the licensee) submitted a License Amendment Request (LAR) to change the Technical Specifications (TS) for the Wolf Creek Generating Station (WCGS). Specifically, the changes would modify the TS Surveillance Requirements (SR) by providing surveillance enhancements to improve operation and testing of the Emergency Diesel Generators (EDG) and provide a more restrictive voltage and frequency band for operation when not connected in parallel with the offsite sources.

The NRC staff has reviewed the LAR and developed the following questions regarding the proposed changes to TS 3.8.1, "AC Sources – Operating," SR related to EDG load, voltage, and frequency testing.

1. The LAR proposed to change the minimum voltage or minimum steady state voltage from ≥ 3740 V to ≥ 3950 V for SR 3.8.1.2, SR 3.8.1.7, SR 3.8.1.11, SR 3.8.1.12, SR 3.8.1.15, SR 3.8.1.19, and SR 3.8.1.20. The LAR states that the historical data from surveillance tests shows that the minimum operating voltage of the EDG was above 4000 V and raising the minimum EDG voltage more accurately reflects actual system voltage conditions, improves equipment operation, and will provide additional system design margin in the EDG transient calculations. Four degraded voltage relays are set to monitor nominal bus voltage level. The degraded voltage relay setpoint is typically based on the minimum voltage required for equipment operability.
 - a) Provide excerpts from calculation(s) that establish the limiting voltage for equipment operability.
 - b) What is the minimum *starting* voltage for large motors and the voltage drop at the remote safety buses associated with starting large motors such as the Essential Service Water System Pumps?
 - c) Verify that the degraded voltage relay does not have to be reset during a loss off offsite power event when the EDG is required to supply plant loads.

2. The LAR proposed to change the minimum steady state voltage and frequency components for SR 3.8.1.2, SR 3.8.1.7, SR 3.8.1.11, SR 3.8.1.12, SR 3.8.1.15, SR 3.8.1.19, and SR 3.8.1.20.
 - a) Verify that motor operated valve performance (in accident analyses) is not adversely impacted at the lower end of the steady state TS allowable frequency coupled with the frequency and voltage variations allowed in RG 1.9 Rev. 3 during load sequencing.
3. The LAR states that WCGS is in compliance with Regulatory Guidance (RG) 1.9, Revision 3. Final Safety Analysis Report (FSAR), Section 8.1.4.3, states the licensee complies with the guidance provided in RG 1.9, Revision 3, Section 1.4. The LAR states the licensee meets the guidance from RG 1.9, Revision 3, under the section Frequency Considerations, that the frequency should be restored to within 2 percent of nominal in less than 60 percent of each load-sequence interval for stepload increase. In amendment 101 (ADAMS Accession No. ML022040294), WCGS was approved for some changes in accordance with RG 1.9, Revision 3, but did not include RG 1.9, Revision 3, Section 1.4.
 - a) Provide details of the license amendment that approved compliance with RG 1.9, Revision 3, Section 1.4.
 - b) Provide details of all other sections of RG 1.9, Revision 3, not referenced in amendment 101, that WCGS has adopted.
4. SR 3.8.1.14 proposes to change the range of EDG loading for the 2-hour and 22-hour testing period. The LAR states that "The primary method for determining power requirements for the actual DG motor loads is by using brake horsepower from the pump/fan curves. The brake horsepower will, when appropriate, be obtained from the pump curves at design flow conditions, not at run-out flow conditions."

The intent of this SR is to demonstrate the capability of the EDG to supply safe shutdown loads during the initial conditions of a design basis event when the pumps may be operating under run-out conditions and the EDG has to operate in overload range, and during extended steady state conditions for mitigating the consequences of a design basis accident.

- a) Verify that the EDG loading profiles considered for the 'short time' and 'medium time' calculations considered primary and secondary plant system pump operations with varying system pressures due to valve operations, line breaks or temperature/level changes. Provide a summary of the calculated loading profile expected during the first 24 hours of the worst case design basis accident.
- b) Verify that the proposed testing associated with the SRs identified in the LAR will envelope the postulated accident profile.
- c) The LAR indicates the EDG loading (worst case) was evaluated at the upper end of allowable frequency range. Verify that the lower end of the proposed frequency range does not adversely impact EDG loading due to changes in the pump/motor operating points.
- d) Verify that the impact of the proposed change in EDG loading profile has been considered in EDG fuel oil requirements.