

May 19, 2006

Mr. Rick A. Muench
President and Chief Executive Officer
Wolf Creek Nuclear Operating Corporation
Post Office Box 411
Burlington, KS 66839

SUBJECT: WOLF CREEK GENERATING STATION - REQUEST FOR ADDITIONAL
INFORMATION (RAI) RELATED TO LICENSE AMENDMENT REQUEST (LAR)
TO EXTEND CONTAINMENT ISOLATION VALVE (CIV) COMPLETION TIMES
(CTs) (TAC NO. MC3944)

Dear Mr. Muench:

By the application dated July 23, 2004 (WO 04-0030), Wolf Creek Nuclear Operating Corporation (the licensee) submitted an LAR to extend the CTs for certain CIVs. The application is adopting Westinghouse Topical Report (TR) WCAP-15791-P, "Risk-Informed Evaluation of Extensions to Containment Isolation Valve Completion Times," Revision 1, and the Nuclear Regulatory Commission (NRC) staff issued its final safety evaluation for WCAP-15791, Revision 1, on March 10, 2006.

Enclosed is an RAI based on the NRC staff review of the application. The questions in the RAI were provided to your staff by email and discussed in a conference call on May 18, 2006. The enclosed RAI may have editorial differences with respect to that provided in the email. The questions are essentially the same. Your staff stated that the requested information could be submitted by July 31, 2006. By submitting the information by this time, the NRC staff will be able to complete its review in a timely manner.

Sincerely,

/RA/

Jack Donohew, Senior Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-482

Enclosure: Request for Additional Information

cc w/encl: See next page

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REQUEST FOR ADDITIONAL INFORMATION (RAI)

RELATED TO LICENSE AMENDMENT REQUEST (LAR) SUBMITTED JULY 23, 2004

EXTENDED CONTAINMENT ISOLATION VALVE (CIV) COMPLETION TIMES (CTs)

WOLF CREEK NUCLEAR OPERATING CORPORATION

WOLF CREEK GENERATING STATION (WCGS)

DOCKET NO. 50-482

This LAR is adopting Westinghouse Topical Report (TR) WCAP-15791-P, "Risk-Informed Evaluation of Extensions to Containment Isolation Valve Completion Times," Revision 1. Based on its review of the final safety evaluation (SE) dated March 10, 2006, on WCAP-15791, and on Wolf Creek Nuclear Operating Corporation (the licensee) application dated July 23, 2004, the Nuclear Regulatory Commission (NRC) staff has the following RAI:

1. RAI response dated February 13, 2004, Question 12, in the NRC staff review of WCAP-15791, added a clarification to Note 3 of Table 9-1a to the LAR stating that the "CDF [core damage frequency] due to [the] SGTR [steam generator tube rupture] is not provided since Wolf Creek Generating Station (WCGS) has no CIVs in the containment penetration from the SGs [steam generators] due to their containment boundary definition."

The response to RAI 12 explained that, according to the WCGS USAR [Updated Safety Analysis Report], "the containment penetrations associated with the steam generators are not subject to GDC [General Design Criterion]-57, since the containment barrier integrity is not breached. The boundary or barrier against fission product leakage to the environment is the inside of the steam generator tubes, the outside of the steam generator shell, and the outside of the lines emanating from the steam generator shell side." It further states that there are no CIVs associated with these penetrations.

It appears that this position, and the USAR section that supports it, is not in compliance with the requirements of the regulations (specifically GDC-57); further, it is inconsistent with the applicable guidance documents (Regulatory Guide 1.141, American National Standard N271-1976/ANS-56.2, and Standard Review Plan 6.2.4); and finally, that it is contrary to the review and conclusions contained in the Safety Evaluation Report related to the licensing of WCGS, NUREG-0881, dated April 1982.

2. The Technical Specification (TS) markups in the licensee's application are not consistent with the proposed TS revisions for adopting WCAP-15791, Revision 1, in Technical Specification Task Force (TSTF) 446, Revision 1, "Risk-Informed Evaluation of Extensions to Containment Isolation Valve Completion Times (WCAP-15791)," which was submitted by letter dated January 31, 2005, to the NRC. Specifically, TS Condition A in the application does not differentiate the CT depending on whether the pressure boundary for the penetration is intact. Provide a markup consistent with WCAP-15791, Revision 1, or clarify the current TS approach in the application.

3. Address how the general assumptions listed in Section 3.2 of the NRC final SE for WCAP-15791 are incorporated in the specific plant practices, procedures, TSs, and plant probabilistic risk assessment (PRA). See also Question 6 below.
4. Because not all penetrations have the same impact on CDF, large early release frequency (LERF), incremental conditional core damage probability (ICCDP), or incremental conditional large early release probability (ICLERP), verify the applicability of WCAP-15791 to the specific plant, including verification that (a) the CIV configurations for the specific plant match the configurations in the TR and (b) the risk-parameter values used in the TR are bounding for the specific plant. Any additional CIV configurations, CT extensions, or non-bounding risk parameter values not evaluated by the TR should be addressed in the plant-specific analyses. Note that CIV configurations and extended CTs not specifically evaluated by the TR, or non-bounding risk parameter values outside the scope of the TR will require NRC staff review of the specific penetrations and related justifications for the proposed CTs. (See Sections 3.2 and 3.3.1 of the NRC final SE on WCAP-15791.)
5. Discuss the Tier 2 assessment and methodology (see Regulatory Guide (RG) 1.177, Section 2.3) employed at WCGS and any risk significant configurations identified for an extended CIV CT. Include in the discussion the assumptions identified in Section 3.2 of the NRC final SE for WCAP-15791 as shown below.
 - Only one CIV is in maintenance with an extended CT at any time.
 - Before maintenance or corrective maintenance (repair) is performed on a CIV, the TR evaluation assumes that the other CIV(s) in the penetration flow path have been checked to ensure they are in their proper position.
 - Multiple systems are not expected to be out of service simultaneously during the extended CTs.
6. Because WCAP-15791 does not address Tier 3, each plant-specific application must address Tier 3 for the specific plant. The plant-specific application must discuss conformance to the requirements of the Maintenance Rule (i.e., Paragraph 50.65(a)(4) of Title 10 of the *Code of Federal Regulations* (10 CFR), or 10 CFR 50.65(a)(4)), as the requirements relate to the proposed CIV CTs and the guidance contained in Nuclear Utility Management and Resource Council (NUMARC) 93.01, Section 11, as endorsed by RG 1.182, including verification that the licensee's maintenance rule program, with respect to CIVs, includes a LERF/ICLERP (i.e., incremental LERF as defined in NUMARC 93-01) assessment as part of the maintenance rule process, and that the PRA quality is adequate as part of the basis of a risk-informed licensing action.

The following was identified as Item 9 in the NRC final SE for WCAP-15791: Explain how LERF/ICLERP are assessed in the program. This assessment is to be documented in a regulatory commitment in the plant-specific application.

7. Verify that the plant-specific PRA quality for Tier 2 and 3 assessments is acceptable for this application in accordance with the guidelines given in RGs 1.174 and 1.177, which are identified in the 6 items listed in Section 3.3.1.1 of the NRC final WCAP-15791 SE.

This includes a verification that external event risk, including seismic events and fires, either through quantitative or qualitative evaluation, is bounded by the TR assumptions and will not have an adverse impact on the conclusions of the plant-specific analysis for extending the CIV CTs.

8. Address how plant-specific CIV reliability and availability are monitored and assessed at the plant under the Maintenance Rule (i.e., 10 CFR 50.65) to confirm that performance continues to be consistent with the analysis assumptions used to justify extended CIV CTs, including the assumptions in WCAP-15791 (i.e., Implementation and Monitoring Program).
9. The cumulative risk impact of the proposed CIV CT extensions must be addressed in the plant-specific application in accordance with the acceptance guidelines in RG 1.174, which was not addressed in the WCGS application. The cumulative risk impact must include both previous plant license changes and additional plant applications still under NRC staff review.
10. Because uncertainty due to plant PRA models is not addressed in WCAP-15791, the plant-specific applications must discuss uncertainties in the risk assessment, which was not addressed in the WCGS application. See the February 13, 2004, RAI response to WCAP-15791, Number 8.

Wolf Creek Generating Station

cc:

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February 2006