



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

September 23, 2021

Mr. Cleveland Reasoner
Chief Executive Officer and
Chief Nuclear Officer
Wolf Creek Nuclear Operating Corporation
P.O. Box 411
Burlington, KS 66839

SUBJECT: WOLF CREEK GENERATING STATION, UNIT 1 – SUPPLEMENTAL
INFORMATION NEEDED FOR ACCEPTANCE OF REQUESTED LICENSING
ACTIONS RE: LICENSE AMENDMENT AND REGULATORY EXEMPTION
FOR A RISK-INFORMED APPROACH TO ADDRESS GENERIC SAFETY
ISSUE 191 AND RESPOND TO GENERIC LETTER 2004-02
(EPID L-2021-LLA-0152 AND EPID L-2021-LLE-0039)

Dear Mr. Reasoner:

By letter dated August 12, 2021 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML21224A118), Wolf Creek Nuclear Operating Corporation (the licensee) submitted an application requesting a license amendment that would revise the licensing basis as described in the Wolf Creek Generating Station Updated Safety Analysis Report to allow the use of a risk-informed approach to address potential issues discussed in Generic Safety Issue (GSI)-191, "Assessment of Debris Accumulation on PWR [Pressurized-Water Reactor] Sump Performance," and respond to Generic Letter 2004-02, "Potential Impact of Debris Blockage on Emergency Recirculation During Design Basis Accidents at Pressurized-Water Reactors" (ADAMS Accession No. ML042360586). Additionally, the licensee requested an exemption from certain requirements in Section 50.46(a)(1) of Title 10 of the *Code of Federal Regulations* (10 CFR) in accordance with the provisions of 10 CFR 50.12, "Specific exemptions." The licensee's application was submitted following the guidance in Regulatory Guide 1.174, Revision 3, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis" (ADAMS Accession No. ML17317A256).

The purpose of this letter is to provide the results of the U.S. Nuclear Regulatory Commission (NRC) staff's acceptance review of the application. The acceptance review was performed to determine if there is sufficient technical information in scope and depth to allow the NRC staff to complete its detailed technical review. The acceptance review is also intended to identify whether the application has any readily apparent information insufficiencies in its characterization of the regulatory requirements or the licensing basis of the plant.

Consistent with 10 CFR 50.90, an application for an amendment to a license (including the technical specifications) must fully describe the changes requested, and following as far as applicable, the form prescribed for original applications. Section 50.34 of 10 CFR addresses the content of technical information required. This section stipulates that the submittal addresses the design and operating characteristics, unusual or novel design features, and principal safety considerations.

Consistent with 10 CFR 50.12, the Commission may, upon application by any interested person or upon its own initiative, grant exemptions from the requirements of the regulations of this part, which are authorized by law, will not present an undue risk to the public health and safety, and are consistent with the common defense, and security. The Commission will not consider granting an exemption unless special circumstances are present, as specified in 10 CFR 50.12(a)(2).

The NRC staff has reviewed the application and concluded that the information delineated in the enclosure to this letter is necessary to enable the NRC staff to make an independent assessment regarding the acceptability of the application in terms of regulatory requirements for the protection of public health and safety and the environment.

In order to make the application complete, the NRC staff requests that the licensee supplement the application to address the information requested in the enclosure by October 12, 2021. This will enable the NRC staff to assess the acceptability of the application for its detailed review. If the information responsive to the NRC staff's request is not received by the above date, the application will not be accepted for review pursuant to 10 CFR 2.101, and the NRC will cease its activities associated with the application. If the application is subsequently accepted for review, you will be advised of any further information needed to support the NRC staff's detailed technical review by separate correspondence.

The information requested and associated timeframe in this letter were discussed with the licensee's staff on a September 23, 2021, clarification call.

If you have any questions, please contact me at 301-415-3168 or via e-mail at Samson.Lee@nrc.gov.

Sincerely,

/RA/

Samson S. Lee, Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-482

Enclosure
Supplemental Information Needed

cc: Listserv

SUPPLEMENTAL INFORMATION NEEDED

LICENSE AMENDMENT REQUEST AND EXEMPTION REQUEST FOR A RISK-INFORMED

APPROACH TO ADDRESS GENERIC SAFETY ISSUE-191 AND

RESPOND TO GENERIC LETTER 2004-02

WOLF CREEK NUCLEAR OPERATING CORPORATION

WOLF CREEK GENERATING STATION, UNIT 1

DOCKET NO. 50-482

By letter dated August 12, 2021 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML21224A118), Wolf Creek Nuclear Operating Corporation (the licensee) submitted an application requesting a license amendment that would revise the licensing basis as described in the Wolf Creek Generating Station Updated Safety Analysis Report to allow the use of a risk-informed approach to address potential issues discussed in Generic Safety Issue (GSI)-191, "Assessment of Debris Accumulation on PWR [Pressurized-Water Reactor] Sump Performance," and respond to Generic Letter 2004-02, "Potential Impact of Debris Blockage on Emergency Recirculation During Design Basis Accidents at Pressurized-Water Reactors" (ADAMS Accession No. ML042360586). Additionally, the licensee requested an exemption from certain requirements in Section 50.46(a)(1) of Title 10 of the *Code of Federal Regulations* in accordance with the provisions of 10 CFR 50.12, "Specific exemptions." The licensee's application was submitted following the guidance in Regulatory Guide (RG) 1.174, Revision 3, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis" (ADAMS Accession No. ML17317A256).

REGULATORY BASIS

Section 2.4, "Acceptance Guidelines" of RG 1.174, Revision 3, states in part:

...if there is an indication that the CDF [core damage frequency] may be considerably higher than 10^{-4} per reactor year, the focus should be on finding ways to decrease rather than increase it.

and

...if there is an indication that the LERF [large early release frequency] may be considerably higher than 10^{-5} per reactor year, the focus should be on finding ways to decrease rather than increase it.

and

In applying these guidelines, it is particularly important to recognize that the risk metrics calculated using PRA [probabilistic risk assessment] models are a function of the assumptions and approximations made in the development of those models. This is particularly important when the results from PRA models for multiple hazard groups are

Enclosure

combined, since the results from some hazard groups, depending on the state of practice, may be conservatively or nonconservatively biased.

INFORMATION INSUFFICIENCIES

During its acceptance review of the application the U.S. Nuclear Regulatory Commission (NRC) staff noted that Table 1, "Baseline CDF and LERF Values" in Attachment VII "Overview of Risk-Informed Approach," of the application provides the plant's baseline CDF as 5.69E-04 per year and baseline LERF as 1.34E-05 per year. In the same attachment the licensee states only that (1) the fire PRA model has not yet been finalized or peer reviewed, and (2) the CDF and LERF values are expected to decrease. In addition, the plant's baseline CDF and LERF values reported in the application indicate the potential erosion of margins to the Commission's "Safety Goals for the Operations of Nuclear Power Plants" (51 FR 28044; August 4, 1986, and republished in 51 FR 30028; August 21, 1986) embedded in the 10^{-4} per reactor year and 10^{-5} per reactor year guidelines for CDF and LERF, respectively. Information is unavailable in the application justifying why this is not the case. Further, the NRC staff noted that Table 3, "GSI-191 Risk Quantification Results," in Attachment VII of the application shows the change in CDF and LERF from various hazards. The application states that these values are not added together because bounding methods were used in the calculation of the values. While a licensee has the option of selecting the approach for determining the change in risk from different contributors, the application does not provide sufficient information to support not aggregating the change in risk and, therefore, the claim that the base case change in risk is within "Region III" of RG 1.174.

SUPPLEMENTAL INFORMATION NEEDED

To support the continuation of the acceptance review for this application, the NRC staff requests the licensee to supplement the application with the following information:

1. Justification supporting the claim that "the CDF and LERF values are expected to decrease," including the anticipated extent of the decrease, details of the existing fire PRA model conservatisms and non-conservatisms on the PRA results as presented in the application, any plant modifications affecting potential fire risk, and details of the new fire PRA model, current status, and schedule for finalization.
2. Discussion of whether ways to reduce baseline CDF and LERF, consistent with the guidance in RG 1.174, have been identified, and the associated implementation schedule, or justification why such steps are unnecessary.
3. Justification that the margins from the Commission's Safety Goals embedded in the 10^{-4} per reactor year and 10^{-5} per reactor year guidelines for CDF and LERF in RG 1.174, respectively, are maintained based on the baseline CDF and LERF values described in the application. Provide any actions and an implementation schedule to maintain the margins if necessary.
4. Justification that the total change in risk remains within "Region III" of RG 1.174 after aggregating the change in risk from the different contributors listed in Table 3 of the application.

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ADAMS Accession No.: ML21253A090

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