



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

April 1, 2013

Mr. Dennis L. Koehl
President and CEO/CNO
STP Nuclear Operating Company
South Texas Project
P.O. Box 289
Wadsworth, TX 77483

SUBJECT: SOUTH TEXAS PROJECT, UNITS 1 AND 2 – SUPPLEMENTAL INFORMATION
NEEDED FOR ACCEPTANCE OF REQUESTED LICENSING ACTION RE:
REQUEST FOR EXEMPTION FOR A RISK-INFORMED APPROACH TO
RESOLVE GENERIC SAFETY ISSUE 191 (TAC NOS. MF0613 AND MF0614)

Dear Mr. Koehl:

By letter dated January 31, 2013 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML13043A013), STP Nuclear Operating Company (STPNOC, the licensee), requested an exemption from the regulations and changes to the licensing basis (LB) concerning Generic Safety Issue (GSI)-191, "Assessment of Debris Accumulation on Pressurized-Water Reactors [PWR] Sump Performance," for South Texas Project (STP), Units 1 and 2. This application was intended to be a pilot for several other licensees that are pursuing a risk-informed approach to resolving GSI-191.

The purpose of this letter is to provide the results of the U.S. Nuclear Regulatory Commission (NRC) staff's acceptance review of this exemption request. 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 Section 50.12, "Specific exemptions," of Title 10 of the *Code of Federal Regulations* (10 CFR), the Commission may, upon application by any interested person or upon its own initiative, grant exemption from the requirements of the regulations, 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, as described in 10 CFR 50.12(a)(2) are present.

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

In order to make the application complete, the NRC staff requests that STPNOC supplement the application to address the information requested in the enclosure by April 29, 2013. This will enable the NRC staff to begin its detailed technical review. If the information responsive to the

D. Koehl

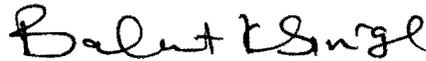
- 2 -

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 review 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 staff's detailed technical review by separate correspondence.

The information requested and schedule to provide the requested information were discussed with Mr. Jamie Paul of your staff on March 28, 2013.

If you have any questions, please contact me at (301) 415-3016 or email Balwant.Singal@nrc.gov.

Sincerely,



Balwant K. Singal, Senior Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-498 and 50-499

Enclosure:
As stated

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SUPPLEMENTAL INFORMATION NEEDED
REQUEST FOR EXEMPTION FOR A RISK-INFORMED
APPROACH TO RESOLVE GENERIC SAFETY ISSUE 191
STP NUCLEAR OPERATING COMPANY
SOUTH TEXAS PROJECT, UNITS 1 AND 2
DOCKET NOS. 50-498 AND 50-499

By application dated January 31, 2013 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML13043A013), STP Nuclear Operating Company (STPNOC, the licensee) requested an exemption from the regulations and changes to the licensing basis (LB) concerning Generic Safety Issue (GSI)-191, "Assessment of Debris Accumulation on Pressurized-Water Reactors [PWR] Sump Performance," for South Texas Project (STP), Units 1 and 2. This application was intended to be a pilot for several other licensees that are pursuing a risk-informed approach to resolving GSI-191. The U. S. Nuclear Regulatory Commission (NRC) staff has performed an acceptance review in accordance with Office Instruction LIC-109, "Acceptance Review Procedures," to determine if there is sufficient technical information in the application to allow the NRC staff to complete its detailed technical review. The acceptance review was 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.

The NRC staff has reviewed the application and concludes that it does not provide technical information in sufficient detail to enable the NRC staff to begin its detailed technical review and make an independent assessment regarding the acceptability. In accordance with LIC-109, the NRC staff requests that STPNOC supplement the application to address the information requested in the enclosure in a timely manner.

The NRC staff also concludes that the application does not provide adequate discussion of or justification for the requested exemptions. The licensee submittal requests exemption from Title 10 of the *Code of Federal Regulations* (10 CFR), Sections 50.46 and 50.67 and General Design Criterion 35, 38, 41, and 19. Each of these regulations require a justification for exemption. Please provide the following information in support of the exemption request for the NRC staff to start its review:

1. For each exemption request submitted under 10 CFR 50.12, the application should include a narrative as to why the licensee believes that the special circumstances provided in 10 CFR 50.12(a)(2) is present. The licensee in its application has stated that 10 CFR 50.10(a)(2)(ii) and (iii) apply. There appears to be a typographical error and the NRC staff believes licensee meant to invoke 10 CFR 50.12(a)(2)(ii) and (iii). Please confirm this and provide adequate technical basis in support of applicability of 10 CFR

Enclosure

50.12(a)(2)(ii) and (iii). Also, please describe in detail how the special circumstances address 10 CFR 50.12(a).

2. The application describes a departure from the method of evaluation described in the Updated Final Safety Analysis Report (UFSAR) used in establishing the design bases in the plant's safety analysis, as defined in 10 CFR 50.59(a)(2) and proposes several draft modifications to the UFSAR. In accordance with 10 CFR 50.59(c)(2)(viii), these modifications would appear to be changes in the design and licensing basis and would require a license amendment in accordance 10 CFR 50.90. Please explain why an amendment is not proposed to accompany this exemption, with the associated draft no significant hazards consideration. The licensee should clearly state the scope and nature of the change to the design and licensing basis.
3. To process the proposed exemption, the NRC staff will need to conduct an environmental review. Please provide the description that will address the special circumstances supporting this review in accordance with 10 CFR 51.41 and 10 CFR 51.45.
4. Please describe how the proposed change will affect the Technical Specifications (TSs). Please indicate whether changes are needed to the operability requirements for the affected systems and any changes to the existing TS Action Statements that may be needed.
5. The basis for the proposed change is that the residual risk from the remaining GSI-191 issues (e.g., those not already addressed in a deterministic manner) satisfies the criteria in Regulatory Guide (RG) 1.174, Revision 2, "An Approach For Using Probabilistic Risk Assessment In Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis," May 2011 (ADAMS Accession No. ML100910006). However, the application does not appear to provide sufficient detail for the NRC staff to determine whether the criteria in RG 1.174 have been met. Please describe in detail how the principles of RG 1.174 criteria regarding safety margin, defense-in-depth (DID), and change in risk are met. In particular, please include the following:
 - a. Regarding the technical evaluation that supports the risk metrics, the Project Summary (Enclosure 4 to the application) describes numerous areas where the technical evaluation deviates from the approved guidance for addressing GSI-191. However, the application provides little or no information on how the issues were addressed. Please provide a discussion in sufficient detail to permit NRC staff review of the methods, bases, assumptions, acceptance criteria, and results. If test results are used to develop probability distributions, please describe how these distributions were determined and used in the overall risk evaluation. Please also provide the basis for the acceptance criteria chosen. The NRC staff requires additional information in the following areas:
 - 1) Failure timing, failure amounts, and debris characteristics of unqualified coatings
 - 2) Capture of small and large pieces of debris on gratings and obstructions
 - 3) Washdown transport holdups

- 4) Non-uniform debris distribution at the onset of recirculation
 - 5) Time dependent transport
 - 6) Chemical effects corrosion and dissolution models
 - 7) Basis for excluding any plant materials from chemical testing
 - 8) Chemical precipitation models – amount, type, head loss effect
 - 9) Disposition of chemical effects Phenomena Identification and Ranking
Table open items
 - 10) Head loss model
 - 11) Chemical effects on head loss (bump-up factor) model
 - 12) Fiber bypass amounts and amounts reaching the core for various scenarios
 - 13) Fiber limits for in-vessel evaluations
 - 14) Thermal-hydraulic analysis for in-vessel evaluations
 - 15) Boric acid precipitation evaluations
 - 16) Methodology for determination and implementation of physical effects probability distributions
- b. Regarding DID, please address how DID is maintained to account for scenarios that are predicted to lead to failure. One method of maintaining DID is to demonstrate that the operators can detect and mitigate inadequate flow through the recirculation strainer and inadequate core cooling. Please describe the supporting evaluations that demonstrate DID actions will be effective.
- c. Please provide supporting evaluations that demonstrate that the barriers for the release of radioactivity will be maintained with sufficient safety margin.
- d. Please provide sufficient detail necessary to assess the treatment of uncertainty. While several known *categories* of uncertainty are identified (zone of influence, chemical effects, debris transport, etc), the mechanistic models and associated parametric factors used in the analysis are not identified, nor are probability density functions for the parameters provided (Enclosure 4, Section 2.5). Please provide this information.

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 review 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 staff's detailed technical review by separate correspondence.

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If you have any questions, please contact me at (301) 415-3016 or email Balwant.Singal@nrc.gov.

Sincerely,

/RA/

Balwant K. Singal, Senior Project Manager
 Plant Licensing Branch IV
 Division of Operating Reactor Licensing
 Office of Nuclear Reactor Regulation

Docket Nos. 50-498 and 50-499

Enclosure:
 As stated

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