

September 22, 2008

Mr. Edward D. Halpin
Chief Nuclear Officer
STP Nuclear Operating Company
South Texas Project
P. O. Box 289
Wadsworth, TX 77483

SUBJECT: SOUTH TEXAS PROJECT, UNITS 1 AND 2 – GENERIC LETTER 2008-01, “MANAGING GAS ACCUMULATION IN EMERGENCY CORE COOLING, DECAY HEAT REMOVAL, AND CONTAINMENT SPRAY SYSTEMS,” PROPOSED ALTERNATIVE COURSE OF ACTION AND REQUEST FOR ADDITIONAL INFORMATION (TAC NOS. MD7881 AND MD7882)

Dear Mr. Halpin:

On January 11, 2008, the Nuclear Regulatory Commission (NRC) issued Generic Letter (GL) 2008-01, “Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems” (Agencywide Documents Access and Management System (ADAMS) Accession No. ML072910759). The GL requested licensees to submit information to demonstrate that the emergency core cooling, decay heat removal, and containment spray systems (hereinafter referred to as the “subject systems”) are in compliance with the current licensing and design bases and applicable regulatory requirements, and that suitable design, operational, and testing control measures are in place for maintaining this compliance.

In accordance with Section 50.54(f) of Title 10 of the *Code of Federal Regulations* (10 CFR), GL 2008-01 required that each licensee submit a written response providing the requested information within 9 months (hereinafter referred to as the “9-month submittal”) of the date of the GL. The GL stated that, if a licensee cannot meet the requested 9-month submittal date, the licensee shall provide a response within 3 months (hereinafter referred to as the “3-month submittal”) of the date of the GL, describing the alternative course of action it proposes to take, including the basis for the acceptability of the proposed alternative course of action.

By letter dated May 12, 2008 (ADAMS Accession No. ML081400712), STP Nuclear Operating Company (STPNOC, the licensee), submitted a 3-month response to GL 2008-01 for South Texas Project, Units 1 and 2 (STP-1 and STP-2). The NRC staff’s assessment of the licensee’s responses for STP-1 and STP-2 is contained in Enclosure 1 and 2, respectively.

For STP-1, the NRC staff concluded that, with the exception of the clarifications and associated requests discussed in Enclosure 1, your proposed alternative course of action related to your 9-month response is acceptable. Because it is September 2008, instead of requesting that you submit a 3-month supplemental response to revise your proposed alternative course of action related to your 9-month supplemental (post outage) response for STP-1 as described in Enclosure 1, the NRC staff requests that you address the requested revision to your proposed alternative action in the October 11, 2008, letter to be submitted.

E. Halpin

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For STP-2, the NRC staff reviewed the licensee's proposed alternative course of action and the associated basis for acceptance and concluded that for STP-2, with the exception of the clarifications and associated requests discussed in Enclosure 2, they are acceptable.

This letter allows the licensee to implement its proposed alternative course of action provided that implementation is consistent with the clarifications and associated requests discussed in Enclosures 1 and 2.

If you have any questions regarding this letter, please feel free to me at (301) 415-1476.

Sincerely,

/RA/

Mohan C. Thadani, Senior Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos.: 50-498 and 50-499

Enclosures:
As stated

cc w/encls: See next page

E. Halpin

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For STP-2, the NRC staff reviewed the licensee's proposed alternative course of action and the associated basis for acceptance and concluded that for STP-2, with the exception of the clarifications and associated requests discussed in Enclosure 2, they are acceptable.

This letter allows the licensee to implement its proposed alternative course of action provided that implementation is consistent with the clarifications and associated requests discussed in Enclosures 1 and 2.

If you have any questions regarding this letter, please feel free to me at (301) 415-1476.

Sincerely,

/RA/

Mohan C. Thadani, Senior Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos.: 50-498 and 50-499

Enclosures:
As stated

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ADAMS Accession No. ML082560005

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DATE	09/18/2008	9/22/08	9/16/08	09/09/2008	09/19/2008	9/22/08

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South Texas Project, Units 1 and 2

9/3/2008

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EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
OF SOUTH TEXAS PROJECT NUCLEAR OPERATING COMPANY'S
3-MONTH RESPONSE TO GENERIC LETTER 2008-01
SOUTH TEXAS PROJECT, UNIT 1
DOCKET NO. 50-498

BACKGROUND

On January 11, 2008, the Nuclear Regulatory Commission (NRC) issued Generic Letter (GL) 2008-01, "Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems" (Agencywide Documents Access and Management System (ADAMS) Accession No. ML072910759). The GL requested licensees to submit information to demonstrate that the emergency core cooling, decay heat removal, and containment spray systems (hereinafter referred to as the "subject systems") are in compliance with the current licensing and design bases and applicable regulatory requirements, and that suitable design, operational, and testing control measures are in place for maintaining this compliance. Specifically, the GL requested licensees to provide: (1) a description of the results of evaluations that were performed in response to the GL; (2) a description of all corrective actions that the licensee determined were necessary; and (3) a statement regarding which corrective actions were completed, the schedule for completing the remaining corrective actions, and the basis for that schedule.

In accordance with Section 50.54(f) of Title 10 of the *Code of Federal Regulations* (10 CFR), GL 2008-01 required that each licensee submit the requested information within 9 months (hereinafter referred to as the "9-month submittal") of the date of the GL. The GL also stated that if a licensee cannot meet the requested 9-month response date, the licensee is required to provide a response within 3 months (hereinafter referred to as the "3-month submittal") of the date of the GL, describing the alternative course of action it proposes to take, including the basis for the acceptability of the proposed alternative course of action.

LICENSEE'S PROPOSED ALTERNATIVE COURSE OF ACTION

By letter dated May 12, 2008, STP Nuclear Operating Company (STPNOC), the licensee, submitted a 3-month response to GL 2008-01 for South Texas Project, Units 1 and 2 (STP-1 and STP-2). The licensee indicated that it could not complete the necessary walkdowns of some segments of piping of the subject systems, including the High Head Safety Injection (HHSI), Low Head Safety Injection (LHSI), Containment Spray (CS), and Residual Heat Removal (RHR) systems within the 9-month time period requested by GL 2008-01.

The licensee could not complete within the 9-month period the detailed walkdowns and evaluations for portions of piping of the subject systems inside the reactor containment, because GL 2008-01 was issued so close to the STP-1 spring 2008 refueling outage. Therefore, the license could not complete by October 11, 2008, the requested information pertaining to the STP-1 corrective actions. The licensee was able to perform walkdowns of the portions of the subject systems inside containment that are not accessible at power to validate that vents shown on design drawings are installed and evaluate the piping configuration to determine consistency with the plant drawings. The walkdowns and evaluations of the piping inside containment did not involve scaffold erection, insulation removal, or a rigorous determination of piping elevations, because resources were unavailable to erect scaffolding or remove insulation, and the technique or tools required to perform in-field validations were not scheduled for the spring 2008 outage.

The licensee plans to complete and submit a 9-month response by October 11, 2008. The response will include the evaluation of the reviews of the licensing basis, the design drawings, and the testing and system operating procedures. The piping of the subject systems outside containment will be the subject of walkdowns. The licensee will use the results of generic activities performed by the owners' group that are applicable to the STP. This would include best practices for filling and venting, acceptance criteria for voids in discharge piping and in suction piping, guidance for potential sources of gas, and guidance for vent locations. The licensee will then supplement the 9-month response by January 30, 2009, to include the results of the STP-2 evaluation and any additional STP-1 evaluation determined to be necessary.

As an alternative course of action, the licensee's letter dated May 12, 2008, listed the following commitments:

- (1) Submit the results of the reviews performed on the licensing basis, the design drawings, and the testing and operating procedures for the subject systems in the October 11, 2008, response.
- (2) Supplement the October 11, 2008, response to GL 2008-01 to include the result of the Unit 2 evaluation and additional Unit 1 evaluation determined to be necessary by January 30, 2009.

The licensee stated that STP has a robust, independent three-train design that includes dedicated HHSI, LHSI, CS, and RHR pumps. This independent, three-train design minimizes the cross-connection issues on both the suction and discharge lines found with most two-train designs. With exception of the RHR system, which is entirely contained in the reactor containment building, most suction lines for the GL subject systems can be walked down at power. The licensee has confidence the GL subject systems can fulfill their required design functions, based on the current design basis (previous drawing reviews and/or design basis verifications), plant-specific operating experience, and the results of previous system inspections. As such, the licensee concluded that completing detailed walkdowns outside the required 9-month period, as well as submission of a supplemental response with inclusion of the results of the STP-2 evaluation and additional STP-1 evaluation determined to be necessary by January 30, 2009, is an acceptable course of action.

NRC STAFF ASSESSMENT

The NRC staff finds that for STP-1, with the exception of the clarifications and associated requests discussed below, the licensee's proposed alternative course of action related to its 9-month initial response is acceptable. This is based on the above-described operating experience, current designs, and inspection results associated with managing gas accumulation at the STP. However, the NRC staff requests that the licensee submit a 3-month supplemental response for STP-1 to revise its proposed alternative course of action related to its 9-month supplemental response as described below.

The NRC staff noted that in its 3-month submittal dated May 12, 2008, the licensee committed to provide a 9-month supplemental response that includes the results of the STP-2 evaluation and any additional SPT-1 evaluations determined to be necessary by January 30, 2009, to meet the GL request. The licensee did not clearly state that the remaining walkdowns that were not completed by October 11, 2008, will be completed and results will be described in a supplement to the October 11, 2008, response for STP-1. The NRC staff requests that the licensee submit the information requested in the GL as follows:

- (1) 9-Month Initial Submittal - For the portions of the subject systems that are accessible prior to the fall 2008 refueling outage for STP-1, provide all GL requested information to the NRC by October 11, 2008. The NRC staff finds that licensee's commitment regarding the 9-month initial response is acceptable.
- (2) 9-Month Supplemental (Post-Outage) Submittal - Except for the long-term items described below, provide all remaining GL requested information for the subject systems to the NRC 90 days following completion of the first refueling outage that initiates after October 11, 2008, for STP-1. The NRC staff requests the licensee to submit a 3-month supplemental response to provide a revised commitment.

For each of these two submittals (the 9-month initial and supplemental submittals), and consistent with the information requested in the GL, the licensee should provide: (1) a description of the results of evaluations that were performed in response to the GL; (2) a description of all corrective actions that the licensee determined were necessary; and (3) a statement regarding which corrective actions were completed, the schedule for completing the remaining corrective actions, and the basis for that schedule.

The NRC staff noted that the licensee's submittal dated May 12, 2008, did not mention other potential long-term actions that are identified in the GL. For instance, the industry is assessing whether it is necessary to perform pump testing to determine the allowable limits on ingested gas volume in pump suction piping as well as whether analysis development is needed to assess gas transport in the subject system piping as a function of system flow. It is unlikely this industry effort will be complete for the 9-month initial or supplemental submittals. Further, technical specification changes may be necessary to reflect the improved understanding achieved during response to the GL, but these cannot be fully developed for the 9-month initial or supplemental submittals. A Technical Specifications Task Force traveler may provide a generic example that can be adopted by licensees. The NRC staff requests that the licensee

address in its 9-month submittal how it plans to track such long-term actions (e.g., Corrective Action Program and/or commitment tracking). The NRC plans to perform follow-up inspections of licensee responses to GL 2008-01 at all plants using a Temporary Instruction inspection procedure.

EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

OF SOUTH TEXAS PROJECT NUCLEAR OPERATING COMPANY'S

3-MONTH RESPONSE TO GENERIC LETTER 2008-01

SOUTH TEXAS PROJECT, UNIT 2

DOCKET NO. 50-499

BACKGROUND

On January 11, 2008, the Nuclear Regulatory Commission (NRC) issued Generic Letter (GL) 2008-01, "Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems" (Agencywide Documents Access and Management System (ADAMS) Accession No. ML072910759). The GL requested licensees to submit information to demonstrate that the emergency core cooling, decay heat removal, and containment spray systems (hereinafter referred to as the "subject systems") are in compliance with the current licensing and design bases and applicable regulatory requirements, and that suitable design, operational, and testing control measures are in place for maintaining this compliance. Specifically, the GL requested licensees to provide: (1) a description of the results of evaluations that were performed in response to the GL; (2) a description of all corrective actions that the licensee determined were necessary; and (3) a statement regarding which corrective actions were completed, the schedule for completing the remaining corrective actions, and the basis for that schedule.

In accordance with Section 50.54(f) of Title 10 of the *Code of Federal Regulations* (10 CFR), GL 2008-01 required that each licensee submit the requested information within 9 months (hereinafter referred to as the "9-month submittal") of the date of the GL. The GL also stated that if a licensee cannot meet the requested 9-month response date, the licensee is required to provide a response within 3 months (hereinafter referred to as the "3-month submittal") of the date of the GL, describing the alternative course of action it proposes to take, including the basis for the acceptability of the proposed alternative course of action.

LICENSEE'S PROPOSED ALTERNATIVE COURSE OF ACTION

By letter dated May 12, 2008, STP Nuclear Operating Company (STPNOC), the licensee, submitted a 3-month response to GL 2008-01 for South Texas Project, Units 1 and 2 (STP-1 and STP-2). The licensee indicated that it could not complete within the requested 9-month period the necessary walkdowns of some segments of piping of the subject systems, including the High Head Safety Injection (HHSI), Low Head Safety Injection (LHSI), Containment Spray (CS), and Residual Heat Removal (RHR) systems within the time period requested by GL 2008-01.

The licensee stated that it could not complete the requested information pertaining to the STP-2 corrective actions by October 11, 2008, because it would be unable to complete the detailed walkdowns of GL systems inside containment during the fall 2008 refueling outage and evaluate the results before the October 11, 2008. The STP-2 fall 2008 outage spans the requested GL response date of October 11, 2008, and the walkdown and evaluation of the results will be ongoing.

The licensee plans to complete and submit a 9-month response by October 11, 2008. The response will include the evaluation of the reviews of the licensing basis, the design drawings, and the testing and system operating procedures. The piping of the subject systems outside containment will be the subject of walkdowns. The licensee will use the results of generic activities performed by the owners' group that are applicable to the STP. This would include best practices for filling and venting, acceptance criteria for voids in discharge piping and in suction piping, guidance for potential sources of gas, and guidance for vent locations. The licensee will then supplement the 9-month response by January 30, 2009, to include the results of STP-2 evaluation and any additional STP-1 evaluation determined to be necessary.

As an alternative course of action, the licensee's letter dated May 12, 2008, listed the following commitments:

- (1) Submit the results of the reviews performed on the licensing basis, the design drawings, and the testing and operating procedures for the subject systems in the October 11, 2008, response.
- (2) Supplement the October 11, 2008, response to GL 2008-01 to include the result of the Unit 2 evaluation and additional Unit 1 evaluation determined to be necessary by January 30, 2009.

The licensee stated that the STP has a robust, independent three-train design that includes dedicated HHSI, LHSI, CS, and RHR pumps. This independent, three-train design minimizes the cross-connection issues on both the suction and discharge lines found most two-train designs. With exception of the RHR system, which is entirely contained in the reactor containment building, most suction lines for the GL subject systems can be walked down at power. The licensee has confidence the GL subject systems can fulfill their required design functions, based on the current design basis (previous drawing reviews and/or design basis verifications), plant-specific operating experience, and the results of previous system inspections. As such, the licensee concluded that for STP-2, completing detailed walkdowns outside the required 9-month period, and submission of a supplemental response to the GL by January 30, 2009, is an acceptable course of action.

NRC STAFF ASSESSMENT

The NRC staff finds that for STP-2, with the exception of the clarifications and associated requests discussed below, the licensee's proposed alternative course of action is acceptable based on the above-described operating experience, current designs and inspection results associated with managing gas accumulation at the STP.

The NRC staff noted that the licensee's 3-month submittal dated May 12, 2008, did not clearly describe the content for the 9-month submittals. The NRC staff requests that the licensee submit the information requested in the GL as follows:

- (1) 9-Month Initial Submittal - For the portions of the subject systems that are accessible prior to the fall 2008 refueling outage for STP-2, provide all GL requested information to the NRC by October 11, 2008.
- (2) 9-Month Supplemental (Post-Outage) Submittal - Except for the long-term items described below, provide all remaining GL requested information for the subject systems to the NRC by January 30, 2009 (consistent with the licensee's proposed schedule), for STP-2.

For each of these two submittals (the 9-month initial and supplemental submittals), and consistent with the information requested in the GL, the licensee should provide: (1) a description of the results of evaluations that were performed in response to the GL; (2) a description of all corrective actions that the licensee determined were necessary; and (3) a statement regarding which corrective actions were completed, the schedule for completing the remaining corrective actions, and the basis for that schedule.

The NRC staff noted that the licensee's submittal dated May 12, 2008, did not mention other potential long-term actions that are identified in the GL. For instance, the industry is assessing whether it is necessary to perform pump testing to determine the allowable limits on ingested gas volume in pump suction piping as well as whether analysis development is needed to assess gas transport in the subject system piping as a function of system flow. It is unlikely this industry effort will be complete for the 9-month initial or supplemental submittals. Further, technical specification changes may be necessary to reflect the improved understanding achieved during response to the GL, but these cannot be fully developed for the 9-month initial or supplemental submittals. A Technical Specifications Task Force traveler may provide a generic example that can be adopted by licensees. The NRC staff requests that the licensee address in its 9-month submittal how it plans to track such long-term actions (e.g., Corrective Action Program and/or commitment tracking). The NRC plans to perform follow-up inspections of licensee responses to GL 2008-01 at all plants using a Temporary Instruction inspection procedure.