



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

April 26, 2016

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 – DRAFT ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT RELATED TO THE PROPOSED PILOT RISK-INFORMED RESOLUTION TO GENERIC SAFETY ISSUE 191 CONCERNING EVALUATION OF SUMP DEBRIS FOLLOWING DESIGN BASIS ACCIDENTS (CAC NOS. MF2400 AND MF2401)**

Dear Mr. Koehl:

Enclosed is a copy of the Draft Environmental Assessment and Finding of No Significant Impact related to your application dated June 19, 2013 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML131750250), as supplemented by letters dated October 3, October 31, November 13, November 21, and December 23, 2013 (two letters); January 9, February 13, February 27, March 17, March 18, May 15 (two letters), May 22, June 25, July 15, 2014; and March 10, March 25, and August 20, 2015 (ADAMS Accession Nos. ML13295A222, ML13323A673, ML13323A128, ML13338A165, ML14015A312, ML14015A311, ML14029A533, ML14052A053, ML14072A076, ML14086A383, ML14087A126, ML14149A353, ML14149A354, ML14149A434, ML14178A481, ML14202A045, ML15072A092, ML15091A440, and ML15246A125, respectively). You submitted these exemption requests and license amendment requests for a risk-informed approach to resolve Generic Safety Issue (GSI)-191, "Assessment of Debris Accumulation on PWR [Pressurized-Water Reactor] Sump Performance," at South Texas Project, Units 1 and 2 (STP).

D. Koehl

- 2 -

The Draft Environmental Assessment and Finding of No Significant Impact is being forwarded to the Office of the Federal Register for publication for a 45-day public comment period.

If you have any questions, please contact me at 301-415-1906, or by e-mail at [Lisa.Regner@nrc.gov](mailto:Lisa.Regner@nrc.gov).

Sincerely,

A handwritten signature in black ink, appearing to be 'L. Regner', written over a large, faint circular mark.

Lisa M. Regner, Senior Project Manager  
Plant Licensing Branch IV-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos. 50-498 and 50-499

Enclosure:  
Draft Environmental Assessment  
and Finding of No Significant Impact

cc w/encl: Distribution via Listserv

**ENCLOSURE**

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**NUCLEAR REGULATORY COMMISSION**

**[Docket Nos. 50-498 and 50-499; NRC-2016-XXXX]**

**STP Nuclear Operating Company**

**South Texas Project, Units 1 and 2**

**AGENCY:** Nuclear Regulatory Commission.

**ACTION:** Draft environmental assessment and finding of no significant impact; request for comment.

**SUMMARY:** The U.S. Nuclear Regulatory Commission (NRC) is issuing for public comment a draft environmental assessment (EA) prepared under the National Environmental Policy Act of 1969 (NEPA) and NRC regulations. This EA summarizes the results of the NRC staff's environmental review, which evaluates the potential environmental impacts of issuing license amendments and granting regulatory exemptions in response to a request from STP Nuclear Operating Company (STPNOC, the licensee) for Facility Operating License Nos. NPF-76 and NPF-80, for South Texas Project (STP), Units 1 and 2, respectively. The license amendments and regulatory exemptions would allow STPNOC to make changes to the STP licensing basis to incorporate the use of both a deterministic and a risk-informed approach to address safety issues discussed in Generic Safety Issue (GSI)-191 and to close Generic Letter (GL) 2004-02.

**DATES:** Submit comments by **[INSERT DATE 45 DAYS FROM DATE OF PUBLICATION IN THE FEDERAL REGISTER]**. Comments received after this date will be considered if it is practical to do so, but the Commission is able to ensure consideration only for comments received before this date.

**ADDRESSES:** You may submit comments by any of the following methods (unless this document describes a different method for submitting comments on a specific subject):

- **Federal Rulemaking Web Site:** Go to <http://www.regulations.gov> and search for Docket ID <INSERT: NRC-2016-XXXX>. Address questions about NRC dockets to Carol Gallagher; telephone: 301-415-3463; e-mail: [Carol.Gallagher@nrc.gov](mailto:Carol.Gallagher@nrc.gov). For technical questions, contact the individual listed in the FOR FURTHER INFORMATION CONTACT section of this document.

- **Mail comments to:** Cindy Bladey, Office of Administration, Mail Stop: OWFN-12-H08, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001.

For additional direction on obtaining information and submitting comments, see "Obtaining Information and Submitting Comments" in the SUPPLEMENTARY INFORMATION section of this document.

**FOR FURTHER INFORMATION CONTACT:** Lisa Regner, Office of Nuclear Reactor Regulation, telephone: 301-415-1906, e-mail: [Lisa.Regner@nrc.gov](mailto:Lisa.Regner@nrc.gov), U.S. Nuclear Regulatory Commission, Washington DC 20555-0001.

## **SUPPLEMENTARY INFORMATION:**

### **I. Obtaining Information and Submitting Comments.**

#### **A. Obtaining Information.**

Please refer to Docket ID <INSERT: NRC-2016-XXXX> when contacting the NRC about the availability of information for this action. You may obtain publicly-available information related to this action by any of the following methods:

- **Federal rulemaking Web Site:** Go to <http://www.regulations.gov> and search for Docket ID <INSERT: NRC-2016-XXXX>.

- **NRC's Agencywide Documents Access and Management System (ADAMS):** You may obtain publicly-available documents online in the ADAMS Public Documents collection at <http://www.nrc.gov/reading-rm/adams.html>. To begin the search, select "[ADAMS Public Documents](#)" and then select "[Begin Web-based ADAMS Search.](#)" For problems with ADAMS, please contact the NRC's Public Document Room (PDR) reference staff at 1-800-397-4209, 301-415-4737, or by e-mail to [pdr.resource@nrc.gov](mailto:pdr.resource@nrc.gov). For the convenience of the reader, instructions about obtaining materials referenced in this document are provided in the "Availability of Documents" section.

- **NRC's PDR:** You may examine and purchase copies of public documents at the NRC's PDR, Room O1-F21, One White Flint North, 11555 Rockville Pike, Rockville, Maryland 20852.

#### B. Submitting Comments.

Please include Docket ID <INSERT: NRC-2016-XXXX> in your comment submission.

The NRC cautions you not to include identifying or contact information that you do not want to be publicly disclosed in your comment submission. The NRC will post all comment submissions at <http://www.regulations.gov> as well as enter the comment submissions into ADAMS. The NRC does not routinely edit comment submissions to remove identifying or contact information.

If you are requesting or aggregating comments from other persons for submission to the NRC, then you should inform those persons not to include identifying or contact information that they do not want to be publicly disclosed in their comment submission. Your request should state that the NRC does not routinely edit comment submissions to remove such information before making the comment submissions available to the public or entering the comment into ADAMS.

## **II. Introduction and Background.**

The NRC is considering a request to amend Facility Operating Licenses NPF-76 and NPF-80, issued to STPNOC for operation of STP, Units 1 and 2, located in Matagorda County, Texas, and to grant certain regulatory exemptions for STP, Units 1 and 2, in accordance with section 50.90, "Application for amendment of license, construction permit, or early site permit" and section 50.12, "Specific exemptions," of title 10 of the *Code of Federal Regulations* (10 CFR), respectively. The license amendments and regulatory exemptions would allow STPNOC to resolve concerns associated with GSI-191, "Assessment of Debris Accumulation on PWR [Pressurized-Water Reactor] Sump Performance," and the associated GL 2004-02, "Potential Impact of Debris Blockage on Emergency Recirculation during Design Basis Accidents at Pressurized-Water Reactors," issued on September 13, 2004.

Pursuant to 10 CFR 51.21, "Criteria for and identification of licensing and regulatory actions requiring environmental assessments," the NRC has prepared a draft EA summarizing the findings of its environmental NEPA review of this proposed action. The NRC concluded that the proposed action will have no significant environmental impact.

## Background

The NRC established a general safety issue (GSI-191) to determine whether the transport and accumulation of debris from a loss-of-coolant accident in the PWR containment structure would impede the operation of the emergency core cooling system or containment spray system. A loss-of-coolant accident within the containment structure is assumed to be caused by a break in the primary coolant loop piping. Water discharged from the pipe break would collect on the containment structure floor and within the containment emergency sump. During this type of accident, the emergency core cooling systems and containment spray systems would initially draw cooling water from the refueling water storage tank. However, realigning the emergency core cooling system pumps to the containment structure emergency sump would provide long-term cooling of the reactor core. Therefore, successful long-term cooling depends on the ability of the containment structure emergency sump to provide adequate flow to the residual heat removal recirculation pumps for extended periods of time.

One of the concerns addressed by the implementation of GSI-191 is that debris, such as insulation installed on piping and components, within the containment structure could be dislodged by a jet of water and steam from a loss-of-coolant accident. Water, along with debris, would accumulate at the bottom of the containment structure and would flow towards the emergency sump pumps. Insulation and other fibrous material could block the emergency sump screens and suction strainers, which in turn could prevent the ability of the containment emergency sump to provide adequate flow to the residual heat removal recirculation pumps (for more information, see NUREG-0897, "Containment Emergency Sump Performance,"

Revision 1.

The NRC issued GL 2004-02 to address this safety concern by requiring licensees of PWRs to: (1) increase the size of their containment sump strainers, (2) replace fibrous



insulation inside containment, and (3) implement other compensatory measures in order to significantly reduce the risk of emergency sump strainer clogging.

Subsequent to the issuance of GL 2004-02, the NRC staff identified another related concern with the potential for debris to bypass the sump strainers (even the new strainers) and enter the reactor core. This safety issue could result in the build-up of material on fuel assemblies, inhibit heat transfer, and prevent adequate cooling of the reactor core. Since 2004, the NRC and industry have conducted tests to gain more information on this concern. In 2012, the NRC staff developed three options for resolution of all of its debris concerns, which are discussed in SECY-12-0093, "Closure Options for Generic Safety Issue 191, Assessment of Debris Accumulation on Pressurized-Water Reactor Sump Performance," dated July 9, 2012.<sup>1</sup>

The three options for demonstrating compliance with 10 CFR 50.46, "Acceptance criteria for emergency core cooling systems for light-water nuclear power reactors," are summarized as follows.

1. Option 1 allows the use of approved models and test methods.
2. Option 2 allows the industry to implement additional mitigating measures until resolution is completed and take additional time to resolve issues through further industry testing or use of a risk-informed approach. Use of this option has two alternative methods.
  - Option 2A: Industry can perform more testing and analysis and submit a topical report for NRC review and approval.
  - Option 2B: Industry can develop a risk-informed approach to quantify the risk associated with this generic issue and submit a license amendment request for NRC review and approval.

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<sup>1</sup> On December 14, 2012, the Commission approved all three options for closure of this safety issue.

3. Option 3 allows industry to separate the regulatory treatment of the sump strainer and in-vessel effects. The emergency core cooling system strainers will be evaluated using currently approved models, while in-vessel effects will be addressed using a risk-informed approach.

STPNOC proposes to use Option 2B to demonstrate compliance with 10 CFR 50.46 through both plant-specific testing and a risk-informed approach (described in more detail in the following paragraphs). Since the use of a risk-informed approach is not recognized in the regulations, STPNOC requested an exemption to 10 CFR 50.46(a)(1) for certain conditions associated with the treatment of debris. Additionally, STPNOC requested exemptions to appendix A to 10 CFR part 50, General Design Criteria (GDC) 35, "Emergency Core Cooling," GDC 38, "Containment Heat Removal," and GDC 41, "Containment Atmosphere Cleanup," to allow its use of a risk-informed approach for certain conditions in the containment debris analysis. If approved, the proposed action would not result in modifications within the containment structure or changes to the emergency core cooling system.

### **III. Draft Environmental Assessment.**

#### Description of the Proposed Action

The proposed action is to issue certain license amendments and to grant certain regulatory exemptions requested by STPNOC. The license amendments and regulatory exemptions would allow STPNOC to make changes to the STP licensing basis to incorporate the use of both a deterministic and a risk-informed approach to address safety issues discussed in GSI-191 and close GL 2004-02. If approved, no physical modifications to the nuclear plant or changes to reactor operations involving the emergency core cooling system would be required.

The proposed action is in response to the licensee's application dated June 19, 2013, and supplemented by letters dated October 3, October 31, November 13, November 21, and December 23, 2013 (two letters); January 9, February 13, February 27, March 17, March 18, May 15 (two letters), May 22, June 25, and July 15, 2014; and March 10, March 25, and August 20, 2015.

#### The Need for the Proposed Action

As the holder of Facility Operating License Nos. NPF-76 and NPF-80, STPNOC is expected to address the safety issues discussed in GSI-191 and to close GL 2004-02 with respect to STP, Units 1 and 2. Consistent with SECY-12-0093, STPNOC chose an approach which requires, in part, that STPNOC request that the NRC amend the operating licenses and grant certain regulatory exemptions for each unit.

#### Plant Site and Environs

The STP is located on approximately 12,220 acres (4,945 hectares) in rural and sparsely populated Matagorda County, Texas, approximately 70 miles (mi) [110 kilometers (km)] south-southwest of Houston. Nearby communities include Matagorda, approximately 8 mi (13 km) south of the site; the City of Palacios, 11 mi (18 km) west of the site; and Bay City, 13 mi (21 km) north of the site.

The STP power plant consists of two four-loop Westinghouse PWR units. The reactor core of each unit heats water, which is pumped to four steam generators, where the heated water is converted to steam. The steam is then used to turn turbines, which are connected to electrical generators that produce electricity. A simplified drawing of a PWR can be viewed at <http://www.nrc.gov/reactors/pwrs.html>.

The reactor, steam generators, and other components are housed in a concrete and steel containment structure (building). The containment structure is a reinforced concrete cylinder with a concrete slab base and hemispherical dome. A welded steel liner is attached to the inside face of the concrete shell to ensure a high degree of leak tightness. In addition, the 4-foot (1.2-meter)-thick concrete walls of the containment structure serve as a radiation shield. Additional information on the plant structures and systems, as well as the environmental impact statement for license renewal, can be found in NUREG-1437, Supplement 48, "Generic Environmental Impact Statement for License Renewal of Nuclear Plants: Supplement 48 Regarding South Texas Project, Units 1 and 2."

#### Environmental Impacts of the Proposed Action

Radiological and non-radiological impacts on the environment that may result from issuing the license amendments and granting the regulatory exemptions are summarized in the following sections.

#### **Non-Radiological Impacts**

No physical modifications to the nuclear plant or changes to reactor operations involving the emergency core cooling system would be required if the NRC were to issue the requested license amendments and grant the regulatory exemptions. Also, no physical changes would be made to other structures or land use within the STP site. Non-radiological liquid effluents or gaseous emissions would not change and therefore environmental conditions at the STP site also would not change. In addition, issuing the license amendments and granting the regulatory exemptions would not result in changes to the use of resources or cause any new environmental impacts.

Therefore, there would be no non-radiological environmental impacts to any resource or any irreversible and irretrievable commitments of resources.

#### Non-Radiological Cumulative Impacts

Since issuing the license amendments and granting the regulatory exemptions would not result in environmental effects, there would be no cumulative impact.

### **Radiological Impacts**

#### Radioactive Gaseous and Liquid Effluents and Solid Waste

The STP uses waste treatment systems to collect, process, recycle, and dispose of gaseous, liquid, and solid wastes that contain radioactive material in a safe and controlled manner within NRC and Environmental Protection Agency radiation safety standards. Issuing the license amendments and granting the regulatory exemptions will not result in any physical changes to the nuclear plant or reactor operations that would affect the types and quantities of radioactive material generated during plant operations; therefore, there will be no changes to the plant radioactive waste treatment systems. A detailed description of the STP radioactive waste handling and disposal activities is contained in Chapter 2.1.2 of Supplement 48 to NUREG-1437.

#### Radioactive Gaseous Effluents

The objectives of the STP gaseous waste management system (GWMS) are to process and control the release of radioactive gaseous effluents into the environment to be within the requirements of 10 CFR 20.1301, "Dose limits for individual members of the public," and to be

consistent with the as low as is reasonably achievable (ALARA) dose objectives set forth in appendix I to 10 CFR part 50. The GWMS is designed so that radiation exposure to plant workers is within the dose limits in 10 CFR 20.1201, "Occupational dose limits for adults."

Issuing the license amendments and granting the regulatory exemptions will not result in any physical changes to the nuclear plant or reactor operations; therefore, there will be no changes to the GWMS. The existing equipment and plant procedures that control radioactive releases to the environment will continue to be used to maintain radioactive gaseous releases within the dose limits of 10 CFR 20.1301 and the ALARA dose objectives in appendix I to 10 CFR part 50.

#### Radioactive Liquid Effluents

The function of the STP liquid waste processing system (LWPS) is to collect and process radioactive liquid wastes to reduce radioactivity and chemical concentrations to levels acceptable for discharge to the environment or to recycle the liquids for use in plant systems. The principal objectives of the LWPS are to collect liquid wastes that may contain radioactive material and to maintain sufficient processing capability so that liquid waste may be discharged to the environment below the regulatory limits of 10 CFR 20.1301 and consistent with the ALARA dose objectives in appendix I to 10 CFR part 50. The waste is routed through a monitor that measures the radioactivity and can automatically terminate the release in the event radioactivity exceeds predetermined levels. The liquid waste is discharged into the main cooling reservoir. The entire main cooling reservoir is within the STP site boundary and the public is prohibited from access to the area.

Issuing the license amendments and granting the regulatory exemptions will not result in any physical changes to the nuclear plant or reactor operations; therefore, there will be no

changes to the LWPS. The existing equipment and plant procedures that control radioactive releases to the environment will continue to be used to maintain radioactive liquid releases within the dose limits of 10 CFR 20.1301 and the ALARA dose objectives in appendix I to 10 CFR part 50.

#### Radioactive Solid Wastes

The function of the STP solid waste processing system (SWPS) is to process, package, and store the solid radioactive wastes generated by nuclear plant operations until they are shipped off site to a vendor for further processing or for permanent disposal at a licensed burial facility, or both. The storage areas have restricted access and shielding to reduce radiation rates to plant workers. The principal objectives of the SWPS are to package and transport the waste in compliance with NRC regulations in 10 CFR part 61, "Licensing Requirements for Land Disposal of Radioactive Waste," and 10 CFR part 71, "Packaging and Transportation of Radioactive Material," and the U.S. Department of Transportation regulations in 49 CFR parts 170 through 179; and to maintain the dose limits of 10 CFR 20.1201, 10 CFR 20.1301, and appendix I to 10 CFR part 50.

Issuing the license amendments and granting the regulatory exemptions will not result in any physical changes to the nuclear plant or reactor operations; therefore, the waste can be handled by the SWPS without modification. The existing equipment and plant procedures that control radioactive solid waste handling will continue to be used to maintain exposures within the dose limits of 10 CFR 20.1201, 10 CFR 20.1301, and 10 CFR part 50 appendix I.

### Occupational Radiation Doses

The proposed action of issuing the license amendments and granting the regulatory exemptions will not result in any physical changes being made to the nuclear plant or reactor operations; therefore, there will be no change to any in-plant radiation sources. The licensee's radiation protection program monitors radiation levels throughout the nuclear plant to establish appropriate work controls, training, temporary shielding, and protective equipment requirements so that worker doses will remain within the dose limits of 10 CFR part 20, subpart C, "Occupational Dose Limits." Issuing the license amendments and granting the regulatory exemptions will not change radiation levels within the nuclear plant and, therefore, will have no increased radiological impact to the workers.

### Offsite Radiation Dose

The primary sources of offsite dose to members of the public from the STP are radioactive gaseous and liquid effluents. As discussed previously, there will be no change to the operation of the STP radioactive gaseous and liquid waste management systems or the ability to perform their intended functions. Also, there will be no change to the STP radiation monitoring system and procedures used to control the release of radioactive effluents in accordance with radiation protection standards in 10 CFR 20.1301, 40 CFR 190, "Environmental Radiation Protection Standards for Nuclear Power Operations," and the ALARA dose objectives in appendix I to 10 CFR part 50.

Based on the previous statements, the offsite radiation dose to members of the public would not change and would continue to be within regulatory limits, and, therefore, issuing the license amendments and granting the regulatory exemptions will not change offsite dose levels and, consequently, the health effects of the proposed action will not be significant.



### Design-Basis Accidents

Design-basis accidents at STP, Units 1 and 2, are evaluated by both the licensee and the NRC to ensure that the units can withstand the spectrum of postulated accidents without undue hazard to the public health and safety and the protection of the environment.

Separate from its environmental review in this EA, the NRC staff is evaluating the licensee's technical and safety analyses provided in support of the proposed action of issuing the license amendments and granting the exemption requests to ensure that, following the proposed action, the licensee will continue to meet the NRC regulatory requirements for safe operation. The results and conclusion of the NRC staff's safety review will be documented in a publicly available safety evaluation. If the NRC staff concludes in this safety evaluation that taking the proposed action will (1) provide reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) provide reasonable assurance that such activities will be conducted in compliance with the Commission's regulations, and (3) not be inimical to the common defense and security or to the health and safety of the public, then the proposed action will also not have a significant environmental impact. The NRC will not take the proposed action absent such a safety conclusion.

### Radiological Cumulative Impacts

The radiological dose limits for protection of the public and plant workers have been developed by the NRC and the Environmental Protection Agency to address the cumulative impact of acute and long-term exposure to radiation and radioactive material. These dose limits are codified in 10 CFR part 20, "Standards for Protection Against Radiation," and 40 CFR part 190.

Cumulative radiation doses are required to be within the limits set forth in the regulations cited in the previous paragraph. Issuing the license amendments and granting the exemptions will not require any physical changes to the plant or plant activities, there will not be changes to in-plant radiation sources, and offsite radiation dose to members of the public will not change. Therefore, the NRC staff concludes that there would not be a significant cumulative radiological impact from the proposed action.

#### Radiological Impacts Summary

Based on these radiological evaluations, the proposed action of issuing the license amendments and granting the exemptions would not result in any significant radiological impacts. Therefore, if the NRC staff concludes in its separate safety evaluation that taking the proposed action will (1) provide reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) provide reasonable assurance that such activities will be conducted in compliance with the Commission's regulations, and (3) not be inimical to the common defense and security or to the health and safety of the public, then the proposed action will not have a significant radiological impact.

#### *Environmental Impacts of the Alternatives to the Proposed Action*

As discussed earlier, licensees have options in responding to GL 2004-02 and demonstrating compliance with 10 CFR 50.46 to consider the impacts of debris on emergency core cooling system. Consistent with these options, as an alternative to the proposed action, the licensee could choose to remove and replace insulation within the reactor containment building. This would require the physical removal and disposal of significant amounts of

insulation from a radiation area within the reactor containment building and the installation of new insulation less likely to impact sump performance.

Removal of the existing insulation from the containment building would generate radiologically contaminated waste. STPNOC estimated that 4,620 cubic feet of insulation would be removed and stored onsite until disposal. The old insulation would require special handling and packaging so that it could be safely transported from the STP site. The licensee's existing low-level radioactive and hazardous waste handling and disposal activities would likely be used to process and store this waste material. The old insulation would then be transported to a low-level radioactive or hazardous waste disposal site. Energy (fuel) would be expended to transport the insulation and land would be expended at the disposal site.

The removal of the old insulation and installation of the new insulation would expose workers to radiation. In its application, STPNOC estimates that this would result in an additional collective radiation exposure of 158-176 person-roentgen equivalent man (rem) over its baseline collective radiation exposure. The NRC staff reviewed NUREG-0713, Volume 34, "Occupational Radiation Exposure at Commercial Nuclear Power Reactors and Other Facilities 2012: Forty-Fifth Annual Report," and determined that STPNOC's average baseline collective radiation exposure is approximately 90 person-rem. This additional 158-176 person-rem collective exposure would be shared across the entire work force involved with removing and reinstalling insulation.

In SECY-12-0093, the NRC staff attempted to develop a total occupational dose estimate for the work involved in insulation removal and replacement associated with GSI-191. Due to uncertainties in the scope of work required to remove and replace insulation at a specific nuclear plant and other site-specific factors such as source term and hazardous materials, the NRC staff was unable to estimate the total occupational dose associated with this work.

However, dose estimates were provided by the Nuclear Energy Institute (NEI) in a letter to the NRC dated March 30, 2012, based on information collected on occupational radiation exposures that have been, or could be, incurred during insulation removal and replacement. In the letter, NEI noted similar difficulties to those experienced by the NRC staff in estimating the potential amount of radiation exposure, but provided a "per unit" estimate of between 80 to 525 person-rem. The NRC staff ultimately concluded, given the uncertainties in the scope of work and other nuclear plant site-specific factors such as source term and hazardous materials, that there was no basis to conclude that the NEI estimates were unreasonable. Therefore, since STPNOC's estimate of radiation exposure for insulation removal and replacement is within the NEI estimated range, the NRC staff considers STPNOC's estimate of an increase of 158-176 person-rem over the baseline exposure to be reasonable.

As stated in the "Occupational Radiation Doses" section of this document, STPNOC's radiation protection program monitors radiation levels throughout the nuclear plant to establish appropriate work controls, training, temporary shielding, and protective equipment requirements so that worker doses are expected to remain within the dose limits of 10 CFR 20.1201.

In addition, as stated in the "Offsite Radiation Dose" section of this document, STPNOC also has a radiation monitoring system and procedures in place to control the release of radioactive effluents in accordance with radiation protection standards in 10 CFR 20.1301, 40 CFR part 190, and the ALARA dose objectives in appendix I to 10 CFR part 50. Therefore, radiation exposure to members of the public would be maintained within the NRC dose criteria in 10 CFR 20.1301, 40 CFR part 190, and the ALARA dose objectives of appendix I to 10 CFR part 50.

### Conclusion

Based on this information, impacts to members of the public from removing and replacing insulation within the reactor containment building would not be significant. However, impacts to plant workers and the environment from implementing this alternative would be greater than implementing the proposed action.

### *Alternative Use of Resources*

The proposed action would not involve the use of any different resources (e.g., water, air, land, nuclear fuel) not previously considered in NUREG-1437, Supplement 48.

### *Agencies and Persons Consulted*

In accordance with its stated policy, on April 7, 2016, the NRC staff consulted with the Texas State official, Mr. Robert Free, regarding the environmental impact of the proposed action. The state official concurred with the EA and finding of no significant impact.

## **IV. Draft Finding of No Significant Impact.**

The NRC is considering STPNOC's requests to amend Facility Operating License Nos. NPF-76 and NPF-80 for STP, Units 1 and 2, and to grant exemptions for STP, Units 1 and 2, from certain requirements of 10 CFR 50.46(a)(1), and 10 CFR part 50, appendix A, GDCs 35, 38, and 41. This proposed action would not result in changes to radioactive effluents or emissions to nuclear plant workers and members of the public or any changes to radiological and non-radiological impacts to the environment. Therefore, the NRC has concluded that implementing the proposed action would result in no significant environmental effects, and that

a draft Finding of No Significant Impact is appropriate. The NRC's draft EA, included in section III, "Draft Environmental Assessment," of this document, is incorporated by reference into this finding.

On the basis of the EA, the NRC concludes that the proposed action will not have a significant effect on the quality of the human environment. Accordingly, the NRC has determined not to prepare an environmental impact statement for the proposed action.

#### **V. Availability of Documents.**

The documents identified in the following table are available for public inspection through the NRC's Agencywide Documents Access and Management System (ADAMS) or by using one of the methods discussed in Section I.A, "Obtaining Information," of this document.

Title	Date	ADAMS Accession No.
NUREG-0897, Containment Emergency Sump Performance: Technical Findings Related to Unresolved Safety Issue A-43, Revision 1	10/1985	ML112440046
NRC Generic Letter 2004-02, Potential Impact of Debris Blockage on Emergency Recirculation During Design Basis Accidents at Pressurized-Water Reactors	9/13/2004	ML042360586
NEI letter to NRC, Nuclear Energy Institute, GSI-191 Dose Estimates	03/30/2012	ML12095A319
Commission SECY-12-0093, Closure Options for Generic Safety Issue - 191, Assessment of Debris Accumulation on Pressurized-Water Reactor Sump Performance	07/09/2012	ML121320270 (package)
Commission SRM-SECY-12-0093, Staff Requirements – SECY-12-0093 – Closure Options for Generic Safety Issue – 191, Assessment of Debris Accumulation on Pressurized-Water Reactor Sump Performance	12/14/2012	ML12349A378

Title	Date	ADAMS Accession No.
STPNOC letter to NRC, STP Pilot Submittal and Request for Exemption for a Risk-Informed Approach to Resolve Generic Safety Issue (GSI)-191	01/31/2013	ML13043A013
NRC letter to STPNOC, 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	04/01/2013	ML13066A519
STPNOC letter to NRC, Revised STP Pilot Submittal and Requests for Exemptions and License Amendment for a Risk-Informed Approach to Resolving Generic Safety Issue (GSI)-191	06/19/2013	ML131750250 (package)
STPNOC letter to NRC, Corrections to Information Provided in Revised STP Pilot Submittal and Requests for Exemptions and License Amendment for a Risk-Informed Approach to Resolving Generic Safety Issue (GSI)-191	10/03/2013	ML13295A222
STPNOC letter to NRC, Submittal of GSI-191 Chemical Effects Test Reports	10/31/2013	ML13323A673 (package)
STPNOC letter to NRC, Supplement 1 to Revised STP Pilot Submittal and Requests for Exemptions and License Amendment for a Risk-Informed Approach to Resolving Generic Safety Issue (GSI)-191	11/13/2013	ML13323A128 (package)
STPNOC letter to NRC, Supplement 1 to Revised STP Pilot Submittal for a Risk-Informed Approach to Resolving Generic Safety Issue (GSI)-191 to Supersede and Replace the Revised Pilot Submittal	11/21/2013	ML13338A165
NUREG-1437, Supplement 48, Generic Environmental Impact Statement for License Renewal of Nuclear Plants: Supplement 48 Regarding South Texas Project, Units 1 and 2: Final Report	11/2013	ML13322A890
STPNOC letter to NRC, Response to STP-GSI-191 EMCB-RAI-1	12/23/2013	ML14015A312
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STPNOC letter to NRC, Response to NRC Accident Dose Branch Request for Additional Information	03/17/2014	ML14086A383 (package)
STPNOC letter to NRC, Response to Request for Additional Information re Use of RELAP5 in Analyses for Risk-Informed GSI-191 Licensing Application	01/09/2014	ML14029A533

Title	Date	ADAMS Accession No.
STPNOC letter to NRC, Submittal of CASA Grande Code and Analyses for STP's Risk-Informed GSI-191 Licensing Application	02/13/2014	ML14052A110 (package, portions redacted)
STPNOC letter to NRC, Submittal of GSI-191 Chemical Effects Test Reports	02/27/2014	ML14072A075 (package)
NRC Letter to STPNOC, Request for Additional Information, Round 1	04/15/2014	ML14087A075
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NRC letter to STPNOC, Request for Additional Information, Round 2	03/03/2015	ML14357A171
STPNOC letter to NRC, Second Submittal of CASA Grande Source Code for STP's Risk-Informed GSI-191 Licensing Application	05/15/2014	ML14149A354
STPNOC letter to NRC, First Set of Responses to April, 2014, Requests for Additional Information Regarding STP Risk-Informed GSI-191 Licensing Application – Revised	05/22/2014	ML14149A439 (package)
STPNOC letter to NRC, Second Set of Responses to April, 2014, Requests for Additional Information Regarding STP Risk-Informed GSI-191 Licensing Application	06/25/2014	ML14178A467 (package)
STPNOC letter to NRC, Third Set of Responses to April, 2014, Requests for Additional Information Regarding STP Risk-Informed GSI-191 Licensing Application	07/15/2014	ML14202A045
STPNOC letter to NRC, Submittal of Updated CASA Grande Input for STP's Risk-Informed GSI-191 Licensing Application	03/10/2015	ML15072A092
STPNOC letter to NRC, Description of Revised Risk-Informed Methodology and Responses to Round 2 Requests for Additional Information Regarding STP Risk-Informed GSI-191 Licensing Application	03/25/2015	ML15091A440



Title	Date	ADAMS Accession No.
STPNOC letter to NRC, Supplement 2 to STP Pilot Submittal and Requests for Exemptions and License Amendment for a Risk-Informed Approach to Address Generic Safety Issue (GSI)-191 and Respond to Generic Letter (GL) 2004-02	08/20/2015	ML15246A125 (package)
NRC letter to STPNOC, Request for Additional Information, Round 3	04/11/2016	ML16082A507

Dated at Rockville, Maryland, this 26<sup>th</sup> day of April 2016.

For the Nuclear Regulatory Commission.



Robert J. Pascarelli, Chief,  
Plant Licensing Branch IV-I,  
Division of Operating Reactor Licensing,  
Office of Nuclear Reactor Regulation.

D. Koehl

- 2 -

The Draft Environmental Assessment and Finding of No Significant Impact is being forwarded to the Office of the Federal Register for publication for a 45-day public comment period.

If you have any questions, please contact me at 301-415-1906, or by e-mail at Lisa.Regner@nrc.gov.

Sincerely,

/RA/

Lisa M. Regner, Senior Project Manager  
Plant Licensing Branch IV-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos. 50-498 and 50-499

Enclosure:  
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