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

April 7, 2021

Mr. G. T. Powell
President and Chief Executive Officer
STP Nuclear Operating Company
P.O. Box 289
Wadsworth, TX 77483

SUBJECT: SOUTH TEXAS PROJECT, UNITS 1 AND 2 - ISSUANCE OF AMENDMENT NOS. 221 AND 206 TO AUTHORIZE REVISION OF THE EMERGENCY PLAN BASED ON NUREG-0654/FEMA-REP-1, REVISION 2 (EPID L-2020-LLA-0057)

Dear Mr. Powell:

The U.S. Nuclear Regulatory Commission (the Commission) has issued the enclosed Amendment No. 221 to Renewed Facility Operating License No. NPF-76 and Amendment No. 206 to Renewed Facility Operating License No. NPF-80 for South Texas Project, Units 1 and 2, respectively. The amendments consist of changes to the South Texas Project Electric Generating Station (STPEGS) Emergency Plan in response to your application dated March 30, 2020, as supplemented by letters dated April 29, 2020, August 25, 2020, and December 2, 2020.

The amendments authorize the revision of the STPEGS Emergency Plan based on the guidance in NUREG-0654/FEMA [Federal Emergency Management Agency]-REP-1, “Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants,” Revision 2, dated December 2019.

A copy of the related Safety Evaluation is also enclosed. Notice of Issuance will be included in the Commission's Monthly *Federal Register* notice.

Sincerely,

/RA/

Dennis J. Galvin, Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-498 and 50-499

Enclosures:
1. Amendment No. 221 to NPF-76
2. Amendment No. 206 to NPF-80
3. Safety Evaluation

cc: Listserv

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

STP NUCLEAR OPERATING COMPANY

DOCKET NO. 50-498

SOUTH TEXAS PROJECT, UNIT 1

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 221
Renewed License No. NPF-76

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by STP Nuclear Operating Company (STPNOC)*, acting on behalf of itself and for NRG South Texas LP, the City Public Service Board of San Antonio (CPS), and the City of Austin, Texas (COA) (the licensees), dated March 30, 2020, as supplemented by letters dated April 29, 2020, August 25, 2020, and December 2, 2020, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, as amended, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

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*STPNOC is authorized to act for NRG South Texas LP, the City Public Service Board of San Antonio, and the City of Austin, Texas, and has exclusive responsibility and control over the physical construction, operation, and maintenance of the facility.

2. Accordingly, by Amendment No. 221, Renewed Facility Operating License No. NPF-76 is hereby amended to authorize revision to the South Texas Project Electric Generating Station Emergency Plan as set forth in STP Nuclear Operating Company's application dated March 30, 2020, as supplemented by letters dated April 29, 2020, August 25, 2020, and December 2, 2020, and evaluated in the NRC staff's safety evaluation for this amendment.

3. The license amendment is effective as of its date of issuance and shall be implemented by September 30, 2022.

FOR THE NUCLEAR REGULATORY COMMISSION

Michael F. King

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Date: 2021.04.07 09:56:06 -04'00'

Andrea D. Veil, Director
Office of Nuclear Reactor Regulation

Date of Issuance: April 7, 2021

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

STP NUCLEAR OPERATING COMPANY

DOCKET NO. 50-499

SOUTH TEXAS PROJECT, UNIT 2

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 206
Renewed License No. NPF-80

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by STP Nuclear Operating Company (STPNOC)*, acting on behalf of itself and for NRG South Texas LP, the City Public Service Board of San Antonio (CPS), and the City of Austin, Texas (COA) (the licensees), dated March 30, 2020, as supplemented by letters dated April 29, 2020, August 25, 2020, and December 2, 2020, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, as amended, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

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*STPNOC is authorized to act for NRG South Texas LP, the City Public Service Board of San Antonio, and the City of Austin, Texas, and has exclusive responsibility and control over the physical construction, operation, and maintenance of the facility.

2. Accordingly, by Amendment No. 206, Renewed Facility Operating License No. NPF-80 is hereby amended to authorize revision to the South Texas Project Electric Generating Station Emergency Plan as set forth in STP Nuclear Operating Company's application dated March 30, 2020, as supplemented by letters dated April 29, 2020, August 25, 2020, and December 2, 2020, and evaluated in the NRC staff's safety evaluation for this amendment.

3. The license amendment is effective as of its date of issuance and shall be implemented by September 30, 2022.

FOR THE NUCLEAR REGULATORY COMMISSION

Michael F. King

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Date: 2021.04.07 09:59:47 -04'00'

Andrea D. Veil, Director
Office of Nuclear Reactor Regulation

Date of Issuance: April 7, 2021

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NOS. 221 AND 206 TO

RENEWED FACILITY OPERATING LICENSE NOS. NPF-76 AND NPF-80

STP NUCLEAR OPERATING COMPANY, ET AL.

SOUTH TEXAS PROJECT, UNITS 1 AND 2

DOCKET NOS. 50-498 AND 50-499

1.0 INTRODUCTION

By application dated March 30, 2020 (Reference 1), as supplemented by letters dated April 29, 2020 (Reference 2), August 25, 2020 (Reference 3), and December 2, 2020 (Reference 4), the STP Nuclear Operating Company (STPNOC, the licensee) submitted a license amendment request (LAR) for U.S. Nuclear Regulatory Commission (NRC, the Commission) review and prior approval pursuant to Section 50.54(q), "Emergency plans," of Title 10 of the *Code of Federal Regulations* (10 CFR). The proposed amendment would revise the South Texas Project Electric Generating Station (STPEGS) Emergency Plan for South Texas Project, Units 1 and 2 (STP), based on the guidance in NUREG-0654/FEMA [Federal Emergency Management Agency]-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Revision 2, dated December 2019 (Reference 5) (hereinafter referred to as "NUREG-0654").

The supplemental letters dated August 25, 2020, and December 2, 2020, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the NRC staff's original proposed no significant hazards consideration determination as published in the *Federal Register* (FR) on June 2, 2020 (85 FR 33752).

2.0 REGULATORY EVALUATION

The regulatory requirements and guidance on which the NRC staff based its review are provided below.

2.1 Regulations

The planning standards, as set forth in 10 CFR 50.47(b), establish the requirements that the onsite and offsite emergency response plans must meet for the NRC staff to make a finding that there is reasonable assurance that the licensee will take adequate protective measures in the event of a radiological emergency.

Appendix E to 10 CFR Part 50, "Emergency Planning and Preparedness for Production and Utilization Facilities," Section IV.1, states, in part:

> …the emergency response plans submitted by an applicant for a nuclear power reactor operating license under this part, or for an early site permit (as applicable) or combined license under 10 CFR part 52, shall contain information needed to demonstrate compliance with the standards described in § 50.47(b), and they will be evaluated against those standards.

2.2 Guidance

NUREG-0654, Revision 2, provides specific acceptance criteria that the NRC has determined as an acceptable means of complying with the planning standards in 10 CFR 50.47, "Emergency plans." These criteria provide a basis for NRC licensees (and applicants), and State and local governments to develop acceptable radiological emergency preparedness plans.

NUREG-0696, "Functional Criteria for Emergency Response Facilities," dated February 1981 (Reference 6), describes the facilities and systems to be used by nuclear power plant licensees to improve responses to emergencies.

Office of Nuclear Security and Incident Response (NSIR)/Division of Preparedness and Response (DPR) Interim Staff Guidance (ISG), NSIR/DPR-ISG-01, "Interim Staff Guidance, Emergency Planning for Nuclear Power Plants," dated November 2011 (Reference 7), provides updated guidance for addressing emergency planning requirements for nuclear power plants, based on changes to emergency preparedness regulations in 10 CFR 50.47 and Appendix E to 10 CFR Part 50, which were published in the *Federal Register* on November 23, 2011 (76 FR 72560).

3.0 TECHNICAL EVALUATION

The NRC staff has reviewed the licensee's regulatory and technical analyses in support of the proposed changes to the STPEGS Emergency Plan as described in the LAR, as supplemented. The NRC staff's technical evaluation of the proposed changes is detailed below. The revised STPEGS Emergency Plan is structured to follow the general format of NUREG-0654, Revision 2. As such, the NRC staff's technical evaluation is structured to reflect the evaluation criteria in Section II, "Planning Standards and Evaluation Criteria," of NUREG-0654, which addresses the 16 planning standards in 10 CFR 50.47(b), including any applicable requirements in Appendix E to 10 CFR Part 50.

3.1 Background

In the LAR, the licensee stated, in part:

> The proposed STPEGS Emergency Plan was developed based upon the updated NRC guidance contained in NUREG-0654/FEMA-REP-1, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support [of] Nuclear Power Plants, Revision 2. This includes revisions to align staffing with the functions and major task delineations, specifically the on-shift and minimum augmenting ERO [emergency response organization] assigned within these functional areas. Consistent with

> NUREG-0654, Revision 2, the proposed changes would remove references to non-minimum augmented ERO positions from the STPEGS Emergency Plan while retaining appropriate [minimum staffing] positions in the applicable implementing procedures.

By letter dated April 29, 2020, the licensee provided supplemental information for the NRC staff to consider during its review of the application. By email dated July 27, 2020 (Reference 8), the NRC issued requests for additional information (RAIs). Subsequently, by letter dated August 25, 2020, the licensee provided its responses, including revisions to the proposed STPEGS Emergency Plan from the LAR. By letter dated December 2, 2020, the licensee requested a revised amendment implementation date due to impacts of the Coronavirus Disease (COVID-19) public health emergency on various regulatory and plant-related activities.

3.2 Evaluation

Section II of NUREG-0654, contains evaluation criteria for each planning standard of 10 CFR 50.47(b).

3.2.1 NUREG-0654, Section II.A, "Assignment of Responsibility"

NUREG-0654, Evaluation Criterion II.A, addresses the planning standard of 10 CFR 50.47(b)(1), which states:

> Primary responsibilities for emergency response by the nuclear facility licensee and by State and local organizations within the Emergency Planning Zones [EPZs] have been assigned, the emergency responsibilities of the various supporting organizations have been specifically established, and each principal response organization has staff to respond and to augment its initial response on a continuous basis.

Section IV.A, "Organization," of Appendix E to 10 CFR Part 50, states, in part:

> The organization for coping with radiological emergencies shall be described, including definition of authorities, responsibilities, and duties of individuals assigned to the licensee's emergency organization and the means for notification of such individuals in the event of an emergency.

The requirements of 10 CFR 50.47(b)(1) and the applicable requirements of 10 CFR Part 50, Appendix E, Section IV.A, are addressed in Section A, "Assignment of Responsibility," of the proposed STPEGS Emergency Plan. The proposed STPEGS Emergency Plan identifies those Federal, State, local and private sector (contractors and private) organizations expected to respond in the event of an emergency at STP as well as their respective roles.

The licensee maintains a 24-hour emergency response capability. The normal on-shift complement provides the initial response to an emergency. This group is trained to respond to emergency situations until the augmented ERO arrives.

The proposed STPEGS Emergency Plan relies on Federal, State and local organizations to provide assistance. Letters of agreement are not necessary from the Federal, State and county agencies that are mandated by charter, regulation or law to protect public health and safety. These agencies have cooperated with STPEGS and have developed radiological emergency

plans and procedures in an integrated manner. The proposed STPEGS Emergency Plan also relies on contractor and private organizations, as well as other utilities and organizations for assistance. The proposed STPEGS Emergency Plan maintains current signature copies of applicable letters of agreement and contracts for these organizations in the STPEGS Records Management System.

The licensee has committed to maintaining a sufficient number of qualified personnel to ensure that positions listed in the proposed STPEGS Emergency Plan can be staffed on a 24-hour per day basis for an extended event. The Emergency Director is the individual responsible for assuring continuity of resources (technical, administrative, and material).

Based on the information provided for the planning standard, as presented and considered above, the NRC staff concludes that the licensee has identified (1) the primary responsibilities for emergency response by STP, and State and local organizations within the EPZs; (2) the emergency responsibilities of the various supporting organizations have been specifically established, and (3) each principal response organization has staff to respond and augment its initial response on a continuous basis. Therefore, the NRC staff has determined that the planning standard of 10 CFR 50.47(b)(1) and applicable requirements in Section IV.A of Appendix E to 10 CFR Part 50 have been adequately addressed.

3.2.2 NUREG-0654, Section II.B, “Emergency Response Organization”

NUREG-0654, Evaluation Criterion II.B, addresses the planning standard of 10 CFR 50.47(b)(2), which states:

> On-shift facility licensee responsibilities for emergency response are unambiguously defined, adequate staffing to provide initial facility accident response in key functional areas is maintained at all times, timely augmentation of response capabilities is available and the interfaces among various onsite response activities and offsite support and response activities are specified.

Section IV.A of Appendix E to 10 CFR Part 50 states, in part:

> The organization for coping with radiological emergencies shall be described, including definition of authorities, responsibilities, and duties of individuals assigned to the licensee’s emergency organization and the means for notification of such individuals in the event of an emergency.

The requirements of 10 CFR 50.47(b)(2) and applicable requirements of 10 CFR Part 50, Appendix E, Section IV.A, are addressed in portions of Section B, “Emergency Response Organization,” of the proposed STPEGS Emergency Plan. The proposed STPEGS Emergency Plan provides a description of the primary responsibilities of the ERO. In the RAI response dated August 25, 2020, the licensee provided specific tasks related to the performance of ERO responsibilities that are contained in the implementing procedures and checklists for each ERO position. The NRC staff verified that the proposed STPEGS Emergency Plan provides a description of ERO staffing that is consistent with the guidance in NUREG-0654 regarding initial facility response in key functional areas and timely augmentation of response capabilities.

In conjunction with this LAR, the licensee has performed and documented an on-shift staffing analysis per 10 CFR Part 50, Appendix E, Section IV.A.9. The licensee stated that the results

of the analysis conclude there are no task overlap or overburden of the on-shift staff. A copy of the analysis is maintained in the STPEGS Records Management System.

Organizational structures and the on-shift staffing tables are provided in the proposed STPEGS Emergency Plan. STP maintains a 24-hour emergency response capability. The normal on-shift complement provides the initial response to an emergency situation until the augmented ERO arrives.

Figure B.4, "Interrelationships of Emergency Response Organizations," of the proposed STPEGS Emergency Plan, illustrates the relationships of the above organizations in a block diagram.

The Shift Manager is in direct charge of shift plant operations and is responsible for the actions of the on-shift crew. In an emergency, the Shift Manager assumes the responsibility of the Emergency Director and takes necessary actions to identify and respond to the emergency until relieved by another qualified Emergency Director. The Shift Manager, as Emergency Director, has the responsibility and authority to immediately and unilaterally initiate emergency actions, including command and control functions. The Emergency Director also has overall coordinating authority for the licensee's resources. The proposed STPEGS Emergency Plan defines non-delegable responsibilities as: event declaration, notification of offsite authorities, protective action recommendations (PARs) for the general public, and onsite emergency exposure controls, including authorization of emergency exposures in excess of Federal limits and issuance of potassium iodide to plant employees as a thyroid blocking agent. Subsequently, responsibility for onsite emergency exposure control is transferred to the Technical Support Center (TSC) Manager and overall command and control, notification of offsite authorities, event declaration, PARs for the general public, and emergency exposure responsibilities are transferred to the Emergency Operations Facility (EOF) Manager. Both the TSC and EOF are activated simultaneously upon the declaration of an Alert or higher emergency classification level (ECL) or at the Shift Manager's discretion.

The proposed STPEGS Emergency Plan provides that dedicated on-shift senior reactor operators (SROs) are equivalent to the Shift Manager regarding emergency preparedness tasks, and the SRO is capable of providing on-shift assistance with the command and control and emergency classification functions. By email dated July 27, 2020, the NRC staff requested clarification as to the qualification requirements for the SRO providing on-shift assistance for the command and control and emergency classification functions. In its response dated August 25, 2020, the licensee provided that the proposed STPEGS Emergency Plan will have an on-shift SRO position that will be qualified as an Emergency Director but will not be required to be a fully qualified Shift Manager.

The Shift Manager is in direct charge of on-shift plant operations and is responsible for the actions of the on-shift crew. Also, in an emergency, the Shift Manager, as Emergency Director, initially assumes the responsibility for the command and control functions and takes necessary actions to identify and respond to the emergency until relieved of non-delegable responsibilities by the TSC Manager and EOF Manager, as stated above. After being relieved as Emergency Director, the Shift Manager directs the activities of the operating crew and is responsible for the safe operation of the plant.

STP currently maintains an on-shift organization as documented in the STPEGS Emergency Plan (Reference 9). This plan identifies the authority and responsibilities for emergency response and assigns major functional areas to onsite and offsite response facilities for

augmented response. The on-shift staffing in the proposed STPEGS Emergency Plan continues to meet the guidance in NUREG-0654.

The licensee proposed to augment the EOF concurrent with the TSC at the declaration of an Alert or higher ECL. This change is more stringent than the guidance provided in NUREG-0654 to augment the EOF at the declaration of a Site Area Emergency or higher ECL. The proposed STPEGS Emergency Plan provides for EOF augmentation within 90 minutes of the declaration of an Alert or higher ECL, which allows the TSC to focus on onsite response and mitigation activities, and the EOF to focus on offsite communications and mitigation activities.

The licensee will conduct a minimum staffing drill at least once within an 8-year drill/exercise cycle that requires facility activation, full transfer of responsibilities from the control room, and demonstration of event assessment and response activities.

The proposed STPEGS Emergency Plan will change the on-shift command and control ERO staffing from two Shift Managers to one Shift Manager and one SRO. The proposed STPEGS Emergency Plan provides that dedicated on-shift SROs are equivalent to the Shift Manager regarding emergency preparedness tasks and the SRO is capable of providing on-shift assistance with the command and control and emergency classification functions. The licensee provided that the STPEGS Emergency Plan will have an on-shift SRO position that will be qualified as an Emergency Director but will not be required to be a fully qualified Shift Manager. As such, the NRC staff finds that the proposed changes to the STPEGS Emergency Plan do not change the ability or timing to perform the command and control function provided in the current STPEGS Emergency Plan and continue to support the 90-minute minimum ERO augmentation time for the command and control function.

The proposed STPEGS Emergency Plan would replace a designated NRC-licensed reactor operator with knowledgeable personnel, which is further described as “personnel with an operations background.” As changed, the proposed STPEGS Emergency Plan will retain the capability to perform the communication functions with the NRC with knowledgeable personnel as needed. As such, the proposed change does not impact the ability or timing to perform the communication function.

The proposed STPEGS Emergency Plan will eliminate the TSC Communicator responsible for State and county communications as a minimum ERO staffing position. The proposed STPEGS Emergency Plan has one dedicated on-shift Emergency Notification System Communicator and one on-shift State/County Communicator with augmentation by one State/County Communicator, who will respond to the EOF within 90 minutes of the declaration of an Alert or higher ECL. Additionally, the proposed change to the STPEGS Emergency Plan, Table B-1, “On-Shift and Augmenting ERO Staffing Plan,” titles for the Communications ERO staff provide greater clarity regarding to the performance of the communications function as provided in NUREG-0654. As such, the NRC staff finds that the proposed changes to the STPEGS Emergency Plan do not change the ability or timing to perform required Federal and State/local communications from that in the current STPEGS Emergency Plan and continue to support a 90-minute ERO augmentation of the Communications function.

The proposed STPEGS Emergency Plan will eliminate the TSC Dose Assessor, who would respond to the TSC within 90 minutes of the declaration of an Alert or higher ECL, as a minimum ERO staffing position. However, the proposed STPEGS Emergency Plan will provide a Dose Assessor, who will respond to the EOF within 90 minutes of the declaration of an Alert or higher ECL. As changed, the proposed STPEGS Emergency Plan will continue to provide

dose assessment capability within 90 minutes of the declaration of an Alert or higher ECL. As such, the NRC staff finds that the proposed changes to the STPEGS Emergency Plan do not change the ability or timing to perform dose assessment as provided in the current STPEGS Emergency Plan and continue to support a 90-minute ERO augmentation of the dose assessment function.

The proposed STPEGS Emergency Plan will eliminate the dedicated on-shift Onsite Field Monitor ERO position. The licensee provided that the basis for previously establishing the on-shift Onsite Field Monitor was to remove the need for a 60-minute minimum ERO augmentation position. As proposed, the STPEGS Emergency Plan will now provide an Onsite Field Monitor, who will respond within 60 minutes of the declaration of an Alert or higher ECL. As changed, the proposed STPEGS Emergency Plan for onsite field monitoring will be consistent with the guidance provided in NUREG-0654.

The proposed STPEGS Emergency Plan will eliminate the on-shift Operations Support Center (OSC) Coordinator ERO position. The licensee provided that the basis for previously establishing the on-shift OSC Coordinator was to remove the need for a 60-minute minimum ERO augmentation position. As proposed, the STPEGS Emergency Plan will now provide a Maintenance Coordinator who will respond within 60 minutes of the declaration of an Alert or higher ECL. As changed, the proposed STPEGS Emergency Plan will provide for supervision of repair team activities consistent with the guidance provided in NUREG-0654.

The proposed STPEGS Emergency Plan will eliminate two Electricians, one Mechanic, and one Instrument and Control (I&C) Technician as on-shift ERO positions. The licensee provided that the basis for previously establishing the on-shift maintenance staff was to remove the need for 60-minute repair team ERO positions. As proposed, the STPEGS Emergency Plan will now provide an Electrician and a Mechanic who will respond within 60 minutes of the declaration of an Alert or higher ECL, and an I&C Technician, who will respond within 90 minutes of the declaration of an Alert or higher ECL. As changed, the NRC staff finds that the proposed STPEGS Emergency Plan supervision of repair team activity capabilities will be consistent with the guidance provided in NUREG-0654.

NUREG-0654 provides for one TSC Emergency Classification Advisor to respond within 60 minutes of the declaration of an Alert or higher ECL. In the proposed STPEGS Emergency Plan, the licensee will add one EOF Operations Advisor, who will respond within 90 minutes of the declaration of an Alert or higher ECL. Considering that the licensee proposed to have an on-shift Shift Manager and another on-shift SRO, who is qualified as an Emergency Director, STP has the capability to evaluate plant conditions and recommend emergency classifications until relieved at 90 minutes of the declaration of an Alert or higher ECL. Considering that the EOF Manager will be responsible for emergency classifications following augmentation of the ERO, providing a classification advisor at the EOF within 90 minutes of the declaration of an Alert or higher ECL ensures that STP will have on-shift and augmentation capability to evaluate plant conditions and recommend emergency classifications over the extended augmentation period.

In the email dated July 27, 2020, the NRC staff requested additional information regarding the potential impact of eliminating the on-shift repair team staffing, which included maintenance supervision on the 90-minute ERO response times for the ERO engineering positions. Specifically, the NRC staff requested clarification regarding the capability of the on-shift staff to implement flexible coping strategies (FLEX) and/or Severe Accident Management Guideline (SAMG) activities. In the response dated August 25, 2020, the licensee provided that on-shift

resources have the training, procedures, and equipment necessary to conduct mitigatory actions without the immediate need of ERO augmentation. In addition to the capability to implement FLEX and SAMG strategies without the immediate need of ERO augmentation, STP has a third independent train of safety equipment. This third emergency core cooling train reduces the reliance on the need for equipment and repair. As such, the NRC staff finds the 90-minute ERO augmentation time for the Electrical Engineer, Mechanical Engineer, and Nuclear Engineer positions continues to be acceptable.

The proposed STPEGS Emergency Plan will eliminate one TSC Information Technology (IT) Technician as an ERO minimum augmenting position. The licensee provided that each of the emergency preparedness-related critical digital assets were evaluated as part of implementation of the Cyber Security Rule (10 CFR 73.54(b)). As part of the Cyber Security Rule assessment, controls have been put in place to protect the assets against cyber-attack. The IT process for addressing issues with critical digital assets, as well as an IT Help Desk operate on an around-the-clock basis. As such, the NRC staff finds that removal of the TSC IT technician is acceptable. The proposed STPEGS Emergency Plan will continue to provide an IT coordinator to the EOF as additional equipment not standard to the site is used at the EOF (and the Joint Information Center (JIC), which is in the same building) in support of STPEGS Emergency Plan implementation. As changed, the NRC staff finds that the proposed STPEGS Emergency Plan IT capabilities will be consistent with the guidance provided in NUREG-0654.

In Attachment 1, “Task Analysis for Non-Minimum Augmenting Positions Removed from the ERO,” to the letter dated April 29, 2020, the licensee provided a table that included the assigned tasks, task dispositions, and a justification supporting elimination of 35 positions, because they were determined to be “non-minimum” staffing. The 35 positions are noted in the following table:

Non-Minimum Augmenting Staff Determined to be Removed	
TSC	**EOF**
Assistant TSC Manager	Deputy EOF Director
Assistant Operations Manager	EOF Liaison
Assistant Radiological Manager	Engineering Assistant
Engineering Supervisor	Site Public Affairs Coordinator
Chemical/Radiochemical Manager	Radiological Staff
Operations Communicator	Administrative Staff
Radiological Status Board Keeper	Records Supervisor
Administrative Staff	Support Orientation Coordinator
OSC	Communications System Supervisor
Resource Coordinator	Employee Support
Security Coordinator	EOF Director Administrative Assistant
Mechanical Maintenance Planner	Technical Staff
Electrical Maintenance Planner	Assistant Licensing Director
I&C Maintenance Planner	Public Affairs Specialist
Chemistry Discipline Lead	Radiological Status Board Keeper
OSC Communicator	Procurement/Resources Supervisor
Materials Handler	Federal Response Agency Liaison
	Materials Engineer
	Purchaser

Additionally, the licensee proposes to move 13 positions from the proposed STPEGS Emergency Plan to the licensee's implementing procedures, based on being determined as "support positions." The 13 positions are noted in the following table:

Non-Minimum Augmenting Staff Remaining in Implementing Procedures	
TSC	**EOF**
Engineering Coordinator	State of Texas Emergency Operations Center (EOC) Liaison
I&C Engineer	Matagorda County Liaison
Administrative Assistant	Status Board Keeper
Status Board Keeper	Licensing Advisor
OSC	Health Physics Network Communicator
OSC Coordinator	Administrative Assistant
Team Coordinator	
Operations Supervisor	

Based on a review of task analysis (i.e., Attachment 1), the NRC staff determined that the proposed STPEGS Emergency Plan ERO will continue to provide the capability to perform the emergency preparedness functions listed in NUREG-0654, Revision 2, Table B-1, "Emergency Response Organization (ERO) Staffing and Augmentation Plan."

The interfaces between and among the onsite functional areas of emergency activity and local services support and State and local government response organizations are represented in Figure B.4 of the proposed STPEGS Emergency Plan. Contractor and private organizations, as well as other utilities and organizations, are also referenced in the proposed STPEGS Emergency Plan. Local emergency support organizations are included in the proposed STPEGS Emergency Plan by the type of assistance provided: local law enforcement agencies, ambulance services, medical services, and firefighting.

The proposed STPEGS Emergency Plan incorporates the current process for industrial complexes in or near Matagorda County to notify the county though the 911 call center of any release of chemical or other hazardous event and for Matagorda County to notify the licensee of the event. As such, the removal of the letters of agreement with the following offsite industrial complexes from the proposed STPEGS Emergency Plan will not impact the ability of STP to be notified of emergencies occurring at these plants:

- Lyondell Chemicals, LP,
- OXEA Corporation Lyndell Chemicals, LP, and
- OXEA Corporation.

Based on the information provided for the planning standard, as presented and considered above, the NRC staff concludes that the licensee (1) has identified and defined on-shift responsibilities for STP; (2) provides adequate staffing to maintain initial accident response in key functional areas at all times; (3) includes timely augmentation of response capabilities; and (4) specifies the interfaces among various onsite and offsite response activities and support. Therefore, the NRC staff has determined that the planning standard of 10 CFR 50.47(b)(2) and the applicable requirements of Section IV.A of Appendix E to 10 CFR Part 50 have been adequately addressed.

3.2.3 NUREG-0654, Section II.C, “Emergency Response Support and Resources”

NUREG-0654, Evaluation Criterion II.C, addresses the planning standard of 10 CFR 50.47(b)(3), which states:

> Arrangements for requesting and effectively using assistance resources have been made, arrangements to accommodate State and local staff at the licensee’s Emergency Operations Facility have been made, and other organizations capable of augmenting the planned response have been identified.

Section IV.A.7 of Appendix E to 10 CFR Part 50 requires, in part, the identification of, and a description of the assistance expected from, appropriate State, local, and Federal agencies with responsibilities for coping with emergencies, including hostile action at the site.

The requirements of 10 CFR 50.47(b)(3) and 10 CFR Part 50, Appendix E, Section IV.A.7, are addressed in portions of Section C, “Emergency Response Support and Resources,” of the proposed STPEGS Emergency Plan.

The EOF, which is located in Bay City, Texas, approximately 18 miles north-northeast of the site, is capable of accommodating designated STP ERO personnel and Federal, State, and local responders, including NRC response teams and FEMA representatives. The EOF contains dedicated work areas and logistics resources for Federal and State response personnel, and access to plant data and radiological information.

Once an emergency has been declared, the Emergency Director has the authority and responsibility to request aid from offsite organizations, Federal, State and local organizations, or private organizations.

The proposed STPEGS Emergency Plan provides that the security organization will control site access at all times in accordance with the security plan. The TSC Security Coordinator is identified as being responsible to coordinate with on-shift personnel when site access is needed for non-badged offsite agency and support personnel.

The proposed STPEGS Emergency Plan provides that agreements with State and county response organizations have been established though the integrated development of their respective emergency plans and that agreements with other entities have been formally developed and documented through memorandums of understanding, contracts, and/or letters of agreement.

The proposed STPEGS Emergency Plan provides that, in addition to coordination between individuals in command and control of each organization, STP liaisons are typically dispatched to State and county EOCs.

STP has a radiological and radiochemistry laboratory at each unit that can provide analysis of samples from process systems and can perform environmental monitoring sample analysis. By a letter of agreement, the Comanche Peak Nuclear Power Plant will perform radiological analysis in case of a loss of onsite analysis capabilities at STP. An offsite mobile radiological laboratory set up at a staging area at the Bay City Civic Center and operated by the Department of State Health Services is available for use by STP, if requested. Additionally, the U.S. Department of Energy, through the radiological assistance program, has access to any national laboratory.

The licensee proposed to remove GEL Laboratories, LLC performance of radioanalyses of environmental samples or personnel dosimetry from the STPEGS Emergency Plan. Considering the diverse and redundant environmental sample analysis in the proposed STPEGS Emergency Plan, the NRC staff finds the removal of GEL Laboratories, LLC reasonable.

The STP Emergency Response Data System is continuously online. The proposed STPEGS Emergency Plan provides that STP personnel will verify Emergency Response Data System operation within 1 hour of the declaration of an Alert or higher ECL.

Based on the information provided for the planning standard, as presented and considered above, the NRC staff concludes that the licensee has identified that the arrangements for requesting and effectively using assistance resources and arrangements to accommodate State and local staff at the licensee's EOF have been made, and the licensee has identified other organizations capable of augmenting the planned response. Therefore, the NRC staff has determined that the planning standard of 10 CFR 50.47(b)(3) and the applicable requirements of Section IV.A.7 of Appendix E to 10 CFR Part 50 have been adequately addressed.

3.2.4 NUREG-0654, Section II.D, "Emergency Classification System"

NUREG-0654, Evaluation Criterion II.D, addresses the planning standard of 10 CFR 50.47(b)(4), which states:

> A standard emergency classification and action level scheme, the bases of which include facility system and effluent parameters, is in use by the nuclear facility licensee, and State and local response plans call for reliance on information provided by facility licensees for determinations of minimum initial offsite response measures.

Section IV.B.1 of Appendix E to 10 CFR Part 50 states, in part:

> The means to be used for determining the magnitude of, and for continually assessing the impact of, the release of radioactive materials shall be described, including emergency action levels that are to be used as criteria for determining the need for notification and participation of local and State agencies, the Commission, and other Federal agencies, and the emergency action levels that are to be used for determining when and what type of protective measures should be considered within and outside the site boundary to protect health and safety.

Further, Section IV.C.2 of Appendix E to 10 CFR Part 50 states, in part, that "power reactor licensees shall establish and maintain the capability to assess, classify, and declare an emergency condition within 15 minutes after the availability of indications to plant operators that an emergency action level has been exceeded and shall promptly declare the emergency condition as soon as possible following identification of the appropriate emergency classification level."

The requirements of 10 CFR 50.47(b)(4) and applicable requirements of 10 CFR Part 50, Appendix E, Sections IV.B.1 and IV.C.2, are addressed in Section D, "Emergency Classification System," of the proposed STPEGS Emergency Plan.

The proposed STPEGS Emergency Plan provides an overall discussion regarding classification of emergencies and the basis for emergency classification. The emergency action levels (EALs) have been developed in accordance with the Nuclear Energy Institute (NEI) document NEI 99-01, Revision 6, "Development of Emergency Action Levels for Non-Passive Reactors" (Reference 10). The EALs and their technical bases are considered as part of the overall STPEGS Emergency Plan by extension. The EALs were approved by the NRC in a letter to the licensee dated August 20, 2015 (Reference 11), which included in part finding that the EALs meet the requirements in Appendix E to 10 CFR Part 50 and the planning standards of 10 CFR 50.47(b) and thus finding that the basis of the emergency classification and action level scheme includes facility system and effluent parameters. Further, the EAL scheme is reviewed by State and county authorities on an annual basis.

The proposed STPEGS Emergency Plan states that it maintains the capability to assess, classify, and declare an emergency condition within 15 minutes after the availability of indications to plant operators that an EAL threshold has been met or exceeded.

Based on the information provided for the planning standard, as presented and considered above, the NRC staff concludes that the licensee has identified an acceptable emergency classification and action level scheme, the bases of which include facility system and effluent parameters in use by STP. Therefore, the NRC staff has determined that the planning standard of 10 CFR 50.47(b)(4) and the applicable requirements of Sections IV.B.1 and IV.C.2 of Appendix E to 10 CFR Part 50 have been adequately addressed.

3.2.5 NUREG-0654, Section II.E, "Notification Methods and Procedures"

NUREG-0654, Evaluation Criterion II.E, addresses planning standard 10 CFR 50.47(b)(5), which states:

> Procedures have been established for notification, by the licensee, of State and local response organizations and for notification of emergency personnel by all organizations; the content of initial and followup messages to response organizations and the public has been established; and means to provide early notification and clear instruction to the populace within the plume exposure pathway Emergency Planning Zone have been established.

Section IV.D.1 of Appendix E to 10 CFR Part 50, states, in part:

> Administrative and physical means for notifying local, State, and Federal officials and agencies and agreements reached with these officials and agencies for the prompt notification of the public and for public evacuation or other protective measures, should they become necessary, shall be described.

Section IV.D.3 of Appendix E to 10 CFR Part 50 states, in part:

> A licensee shall have the capability to notify responsible State and local governmental agencies within 15 minutes after declaring an emergency.

Section IV.D.3 further states:

> The design objective of the prompt public alert and notification system shall be to have the capability to essentially complete the initial alerting and initiate

notification of the public within the plume exposure pathway EPZ within about 15 minutes."

The requirements of 10 CFR 50.47(b)(5) and applicable requirements of 10 CFR Part 50, Appendix E, Section IV.D, are addressed in Section E, "Notification Methods and Procedures," of the proposed STPEGS Emergency Plan.

The Shift Manager is responsible for declaring the appropriate emergency classification and then notifying plant personnel of the emergency declaration in accordance with procedures. This notification may consist of the use of the plant emergency alarm, announcements over the plant public address system, or activation of the emergency notification and response system. ERO personnel respond to their assigned emergency response facilities upon notification of the declaration of an Alert or higher ECL.

The licensee has established procedures for notification of State and local response organizations, and for notification of licensee ERO personnel. Dedicated automatic ringdown lines will be used to accomplish State and local notifications. The proposed STPEGS Emergency Plan states that initial notifications to the State and county are made within 15 minutes of an ECL declaration or upgrade, or changes are made to PARs (evacuate, and/or shelter). The NRC will be notified within 60 minutes of an ECL declaration or upgrade.

Provisions have been made by the licensee to provide timely supplemental information periodically to offsite response organizations throughout the radiological incident to inform the public. The content of, and any changes to, initial and followup messages are coordinated with State and county representatives. Once transmitted to the offsite response organizations, the receipt of this information is confirmed using a dedicated communications link.

Followup messages will include additional information regarding event conditions and response actions (such as radiological release details, offsite support, event prognosis, etc.). Followup messages are provided every hour to 2 hours. For long duration events with little change in information between messages, the followup message time interval can be increased as agreed upon by all affected agencies. In addition, changes in event information that do not meet the requirements for an initial notification may warrant a followup message at any time.

A means to provide early notification and clear instruction to the populace within the 10-mile plume exposure pathway EPZ have been established. In the event public notification is required, both transient and resident populations within the 10-mile EPZ will be initially notified through the Prompt Notification System and by the Matagorda County officials.

The Prompt Notification System consists of the following primary and backup subsystems:

Primary subsystems:

- IPAWS-WEA (Integrated Public Alert Warning System) - (Wireless Emergency Alerting),
- IPAWS-EAS (Emergency Alert System), and
- IPAWS-NET (Internet Services).

Backup subsystems:

- Autodial,
- Route Alerting,
- National Weather Service/All Hazards Radios, and
- Emergency Alert System.

The primary subsystems act as parallel, simultaneous systems using IPAWS. The secondary, backup subsystems are used if the primary subsystems are unavailable.

The Matagorda County sheriff's office maintains a 24-hour capability to receive, authenticate, and disseminate notifications/warnings to the public within the station's plume exposure pathway EPZ. Authenticated notifications are disseminated to the public within about 15 minutes of receipt from the State or county, if required by the emergency classification.

Based on the information provided for the planning standard, as presented and considered above, the NRC staff concludes that the licensee has established provisions for notification of State and local response organizations and of licensee emergency personnel, the content of initial and followup messages to response organizations, and the means to provide early notification and clear instruction to the populace within the plume exposure pathway EPZ. Therefore, the NRC staff has determined that the requirements of 10 CFR 50.47(b)(5) and the applicable requirements of Sections IV.D.1 and IV.D.3 of Appendix E to 10 CFR Part 50 have been adequately addressed.

3.2.6 NUREG-0654, Section II.F, "Emergency Communications"

NUREG-0654, Evaluation Criterion II.F, addresses the planning standard of 10 CFR 50.47(b)(6), which states:

> Provisions exist for prompt communications among principal response organizations to emergency personnel and to the public.

Section IV.E.9 of Appendix E to 10 CFR Part 50 requires, in part, a description of provisions made for at least one onsite and one offsite communications systems.

The requirements of 10 CFR 50.47(b)(6) and applicable requirements of 10 CFR Part 50, Appendix E, Section IV.E.9, are addressed in Section F, "Emergency Communications," of the proposed STPEGS Emergency Plan.

Several modes of reliable communication are available, during both normal and emergency conditions, to transmit and receive information among the control room, TSC, OSC, EOF, and other locations onsite and offsite. Reliable primary and backup means of communication have been established and are provided in the proposed STPEGS Emergency Plan. The licensee maintains the capability to make initial notifications to the designated offsite agencies through dedicated automatic ringdown lines with the Matagorda County sheriff's office and the Texas Department of Public Safety, sub-district office.

Communication with the NRC is on the Federal Telecommunications System 2001 telephone network, which connects the STP control room, TSC and the EOF with the NRC Operations Center. STP uses the emergency notification and response system for notifying ERO members

during a declared emergency, which consists of offsite primary and backup computer systems. The systems are capable of autodialing and communicating a message on ERO member phones and by text.

Communications to local medical facilities is via private telephone lines. Radio communications are possible through the county communications centers to their respective ambulance and hospital facilities.

The proposed STPEGS Emergency Plan removes the reference to the Maintenance Jack System Telephone. The licensee states that the system is used to support safe shutdown equipment and procedures. The system has not been identified as being important to the emergency preparedness program and is not called out in the EALs as an onsite communications system nor in any procedures to be used by the ERO. Testing and maintenance of the system is controlled by departments and procedures outside of the emergency preparedness program. Considering that the proposed STPEGS Emergency Plan provides redundant means for onsite communications, the NRC staff finds that the removal of the Maintenance Jack System Telephone will not impact the ability of STPEGS to perform communications during an emergency occurring at STPEGS.

Based on the information provided for the planning standard, as presented and considered above, the NRC staff concludes that the licensee has established provisions for prompt communications among principal response organizations to emergency personnel and to the public. Therefore, the NRC staff has determined that the planning standard of 10 CFR 50.47(b)(6) and applicable requirements of Section IV.E.9 of Appendix E to 10 CFR Part 50 have been adequately addressed.

3.2.7 NUREG-0654, Section II.G, “Public Education and Information”

NUREG-0654, Section II, Planning Standard G, “Public Education and Information,” addresses the planning standard of 10 CFR 50.47(b)(7), which states:

> Information is made available to the public on a periodic basis on how they will be notified and what their initial actions should be in an emergency (e.g., listening to a local broadcast station and remaining indoors), the principal points of contact with the news media for dissemination of information during an emergency (including the physical location or locations) are established in advance, and procedures for coordinated dissemination of information to the public are established.

Section IV.D.2 of Appendix E to 10 CFR Part 50 requires that a description of provisions for yearly dissemination to the public within the plume exposure pathway EPZ of basic emergency planning information, such as the methods and times required for public notification and the protective actions planned if an accident occurs, general information as to the nature and effects of radiation, and a listing of local broadcast stations that will be used for dissemination of information during an emergency. Signs or other measures shall also be used to disseminate to any transient population within the plume exposure pathway EPZ appropriate information that would be helpful if an accident occurs.

The requirements of 10 CFR 50.47(b)(7) and applicable requirements of 10 CFR Part 50, Appendix E, Section IV.D.2, are addressed in Section G, “Public Education and Information,” of the proposed STPEGS Emergency Plan.

The licensee states that the goal of the public information program is to acquaint the general public with the proposed STPEGS Emergency Plan and actions they should take in the event of a plant emergency. Emergency information is disseminated each calendar year for residents in the plume exposure pathway EPZ. The licensee will provide education and emergency information to the public consisting of the following:

- educational information on radiation,
- respiratory protection,
- sheltering,
- evacuation routes,
- mail-in cards for persons with special needs to ensure extra precautions are taken,
- plume exposure pathway EPZ map, and
- contacts and telephone numbers for additional information, along with a Spanish information number.

The licensee states that information for residents with special needs and non-English translations is made available in accordance with current Federal guidance. In addition, meetings may be held with the public in the plume exposure pathway (10-mile) EPZ to discuss specific STPEGS emergency preparedness information.

Informing the transient population is achieved by posting information in public areas and by placing supplies of prepared written materials in areas where the general populace frequents. Transient locations will be identified by STP personnel and State and county emergency management officials. These locations may include, but are not limited to, motels, hotels, marinas, and water access areas. The list of transient locations will be reviewed annually and updated as needed. Locations will be contacted annually to ensure adequate copies of materials are available.

The proposed STPEGS Emergency Plan uses multiple ways to communicate the information to the plume exposure pathway EPZ population in the event of a plant emergency. These means are described in Section 3.2.5 of this safety evaluation and were developed in coordination with respective offsite agencies. Any proposed change in the method of dissemination of emergency information to the public must be coordinated and discussed with, and agreed upon by, appropriate State and local offsite emergency officials prior to implementation of the change.

The JIC is located in Bay City, Texas, approximately 18 road miles north-northeast of the site. The JIC is equipped with telephone and media monitoring capabilities to support response actions.

The JIC is staffed at the declaration of an Alert or higher ECL and activated at a declaration of a site area emergency or higher ECL, but may be activated earlier at the discretion of the Emergency Director.

The JIC functions as a single authoritative source for disseminating information to the news media and the public, where the licensee and co-owners, State, county and Federal public information personnel will coordinate information, issue news bulletins and participate jointly in news briefings. After the activation, all news releases concerning the emergency at STP are issued from the JIC. These information releases are the basis for information provided to employees, government groups, other utilities, and industry groups, as well as media outlets

and the media representatives located at the JIC. Once activated, the JIC will be capable of operating 24-hours per day for the duration of the emergency.

The proposed STPEGS Emergency Plan states that a program will be offered each calendar year to acquaint the news media with the methodology for obtaining information during an emergency and with overall emergency preparedness at STPEGS, as appropriate. Typical topics include information concerning radiation and points of contact for release of information to the media in case of an emergency, or for plant specific material sent to the media.

Based on the information provided for the planning standard, as presented and considered above, the NRC staff concludes that the licensee has established provisions for adequate public education and information to support the emergency response. Therefore, the NRC staff has determined that the planning standard of 10 CFR 50.47(b)(7) and the applicable requirements of Section IV.D.2 of Appendix E to 10 CFR Part 50 have been adequately addressed.

3.2.8 NUREG-0654, Section II.H, "Emergency Facility and Equipment"

NUREG-0654, Evaluation Criterion II.H, addresses the planning standard of 10 CFR 50.47(b)(8), which states:

> Adequate emergency facilities and equipment to support the emergency response are provided and maintained.

Section IV.E.8.a of Appendix E to 10 CFR Part 50, requires that adequate provisions be made and described for emergency facilities and equipment, including a licensee's onsite TSC and an EOF from which effective direction can be given and effective control can be exercised during an emergency, and for a licensee's onsite OSC.

Section IV.E.8.b of Appendix E to 10 CFR Part 50 addresses various requirements associated with an EOF located more than 25 miles from a nuclear power reactor site.

Section IV.E.8.c of Appendix E to 10 CFR Part 50 requires EOF capabilities, including the capability to support response to events at multiple reactors/sites and simultaneous events, if applicable.

Section IV.E.8.d of Appendix E to 10 CFR Part 50 requires an alternative facility (for use when onsite emergency facilities cannot be safely accessed during hostile actions) that would be accessible and could function as a staging area for augmentation of emergency response staff.

The NRC staff's primary focus is to evaluate the STPEGS Emergency Plan against NUREG-0654, Section II.H, which provides the detailed evaluation criteria that the NRC staff should consider when determining whether the emergency plan meets the applicable regulatory requirements in 10 CFR 50.47(b)(8). However, the NRC staff also considered the guidance in NUREG-0696 and NSIR/DPR-ISG-01 applicable to the facility and equipment changes proposed in the LAR.

The requirements of 10 CFR 50.47(b)(8) and applicable requirements of 10 CFR Part 50, Appendix E, Section IV.E.8, are addressed in Section H, "Emergency Facilities and Equipment," of the proposed STPEGS Emergency Plan.

The TSCs for STP are located on the 72' elevation of the Electrical Auxiliary Building of each unit and are used to provide management and technical support to operations personnel and to relieve the reactor operators of peripheral duties and communications not directly related to reactor system manipulations. The Unit 1 TSC is activated for a site-wide emergency; otherwise, the TSC in the affected unit will be activated. Each respective TSC diesel generator has the capability of continuous operation for a minimum of 7 days. Each TSC provides reliable voice and electronic communications to the control rooms, OSC, EOF, NRC, and State and county warning points or EOCs. Each TSC has access to drawings and other records, including general arrangement diagrams, piping and instrumentation diagrams, electrical schematics, and plant procedures. Each TSC provides sufficient radiological protection and monitoring equipment to assure that radiation exposure to any person working in the activated TSC will not exceed 5 rem total effective dose equivalent or 25 rem thyroid committed dose equivalent during the duration of a declared accident. Radiation and smoke indications and alarms are provided in each respective TSC. Each TSC contains radiological monitoring equipment to detect radiation and contamination in the facility. Should the affected unit's TSC become uninhabitable, personnel relocate to the other TSC and resume their assigned functions.

The OSCs are located on the 41' elevation of the Mechanical Auxiliary Building of each unit, and are used for briefing, dispatch, and coordinating emergency response teams. The Unit 1 OSC is activated for a site-wide emergency. Otherwise, the OSC in the affected unit will be activated. Communications systems are provided between the control rooms, OSC, TSCs, and the EOF. Radiation and contamination levels in and around the OSC are assessed during emergencies. If an OSC must be evacuated, the personnel from the affected OSC relocate to the OSC of the unaffected unit.

The EOF is a dedicated facility located in Bay City, Texas, at 4000 Avenue F, approximately 18 miles north-northeast of the site, which serves as the central location for management of STPEGS's offsite emergency response, coordination of radiological assessment, and management of initial recovery operations. Specifically, the EOF serves as the primary location for the following functions:

- Event notifications to State and county agencies;
- Development and issuance of offsite PARs;
- Coordination of emergency response activities with Federal, State and county authorities;
- Coordination of radiological and environmental assessment activities with offsite agencies, and
- Coordination of support activities performed by personnel brought in to assist STPEGS personnel.

The EOF provides space for NRC, FEMA, State, county, and STP ERO personnel. Because the EOF is located outside the plume exposure EPZ, specialized ventilation systems and radiological monitoring are not required. The EOF has a backup power source that provides full load capability should power be lost. The EOF has the capability for the acquisition, display, and evaluation of plant, radiological and meteorological conditions necessary to perform accident assessment and determine protective measures. The EOF provides reliable voice and electronic communications to the control rooms, TSCs, OSCs Field Monitoring Teams (FMTs), NRC, and State and county warning points and EOCs.

The TSC, OSC and EOF are required to be activated within 90 minutes following the declaration of an Alert or higher ECL. However, these emergency response facilities may be activated at the Unusual Event ECL on an optional basis.

An alternative facility for the staging of ERO personnel has been designated for STP in the same building that the EOF is located. During a security-related event, or other event that precludes onsite access, the TSC and OSC ERO personnel will be directed to an alternate facility.
The JIC is located in Bay City, Texas, at 4000 Avenue F, approximately 18 miles north-northeast of the site. The JIC is discussed previously in Section 3.2.7 of this safety evaluation.

STP has installed monitoring instrumentation for geophysical monitoring, radiation monitoring, process monitoring, and fire protection. Geophysical monitors include meteorological instrumentation and seismic monitoring. Additionally, hydrological conditions of the STP reservoir are monitored via operational procedures. Radiological monitors and sampling include a radiation monitoring system, liquid and gaseous sampling systems, laboratory facilities for each unit, and portable radiation monitoring equipment. Process monitors include process radiation monitors and the Emergency Response Facilities Data Acquisition and Display System. The Emergency Response Facilities Data Acquisition and Display System is a distributed subsystem of the STP Integrated Computer System that provides plant data, radiation monitoring system data and meteorological data used to assess abnormal operating conditions and aid in mitigating an emergency (fulfills the role of the safety parameter display system). There is a fire detection system designed to detect products of combustion or heat in designated areas of the plant. The fire alarm communication systems and subsystems are located at strategic points throughout the plant to warn personnel of a fire or other emergency conditions.

STP has made provisions to access data from the following offsite sources of monitoring and analysis equipment: offsite meteorological and seismic monitoring, radiological environmental monitors, sampling and monitoring equipment, and laboratory facilities.

STP has two permanent meteorological towers within the owner controlled area for collection of current meteorological data. The primary tower is a 60-meter (196.9 feet) structure with instrumentation and computerized data output. The primary tower instrumentation includes sensors to measure wind direction, wind speed, air temperature, dew point, solar radiation, precipitation, and calculated differential temperatures between elevations. Data from the primary tower is relayed to the Integrated Computer System workstations, which are located in the control room, auxiliary shutdown panel, TSC, and EOF. The backup system consists of a 10-meter (32.8 feet) structure with sensors that measure air temperature, wind speed, and wind direction. Weather forecasts are available from the National Weather Service. STP has the option of using a contracted commercial weather service. Seismic information from offsite sources can be obtained from the National Earthquake Information Center.

STP maintains a sufficient supply of emergency equipment (such as portable survey, counting, air sampling instrumentation, and other radiological monitoring equipment and supplies) to supply one onsite and two offsite FMTs. Emergency kits are available at STP. Designated plant or department procedures identify the equipment in the various emergency kits. Emergency facilities and equipment are inspected and inventoried at least once each calendar quarter.

The licensee has designated a point as the location for receipt and analysis of field monitoring team environmental samples. Sampling and analysis equipment are available for quantitative activity determination of marine and air samples, and qualitative activity determination of terrestrial samples.

Based on the information provided for the planning standard, as presented and considered above, the NRC staff concludes that the licensee has established provisions for adequate emergency facilities and equipment to support the emergency response. Therefore, the NRC staff has determined that the planning standard of 10 CFR 50.47(b)(8) and applicable requirements of Section IV.E.8 of Appendix E to 10 CFR Part 50 have been adequately addressed.

3.2.9 NUREG-0654, Section II.I, "Accident Assessment"

NUREG-0654, Evaluation Criterion II.I, addresses planning standard 10 CFR 50.47(b)(9), which states:

> Adequate methods, systems, and equipment for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition are in use.

Section IV.B.1 of Appendix E to 10 CFR Part 50 states, in part, that "[t]he means to be used for determining the magnitude of, and for continually assessing the impact of, the release of radioactive materials shall be described."

Section IV.E.2 of Appendix E to 10 CFR Part 50 requires a description of the equipment used "for determining the magnitude of and for continually assessing the impact of the release of radioactive materials to the environment."

The requirements of 10 CFR 50.47(b)(9) and 10 CFR Part 50, Appendix E, Section IV.E.2 are addressed in portions of Section I, "Accident Assessment," of the proposed STPEGS Emergency Plan.

The proposed STPEGS Emergency Plan states that the isotopic composition of a release of radioactive material to the environment may be determined by effluent gaseous monitors, survey and sample analysis, or source term estimates based on core damage and release pathway assumptions.

The proposed STPEGS Emergency Plan states that the dose assessment program, "South Texas Assessment Model Projecting Estimated Dose Evaluation (STAMPEDE)," supports multi-unit/multi-accident assessment of radiological releases. STAMPEDE displays have been developed to obtain the necessary plant radiological effluent, area radiation monitor, and meteorological information that is used by on-shift and augmenting ERO personnel to perform dose assessment. The STAMPEDE dose projection results use effluent monitors, containment radiation monitors, main steam line monitors, or field monitoring readings in assessing radiological EALs and PARs. The source term present in reactor coolant, containment atmosphere, and spent fuel pool area atmosphere are estimated using the listed inputs into the dose assessment and core damage assessment processes. STAMPEDE contains an offsite dose projection computer model that STPEGS uses as the radiological assessment model for releases that provides offsite radiological dose and dose rate estimates. STAMPEDE software also accepts radiological parameter inputs such as plant release paths and meteorological

inputs for the STAMPEDE dose assessment model, which are supplied from the STPEGS workstations which display meteorological tower data.

The proposed STPEGS Emergency Plan states that onsite radiological assessments are performed by qualified FMT personnel. The onsite FMT plant environmental monitoring radiological assessments are coordinated and directed by the OSC Radiation Protection (RP) Supervisor or the TSC RP Coordinator. Offsite radiological assessments are also performed by qualified FMT personnel. These offsite FMT plant environmental monitoring radiological assessments are coordinated and directed by the STP EOF Field Monitoring Coordinator. Dedicated vehicles and equipment are provided for the STP offsite FMTs. The responsibility for State FMT activities remains with the State offsite response organization.

STP field monitoring equipment is capable of detecting and measuring airborne radioiodine concentrations as low as 1x10E-7 microcuries per cubic centimeter in the presence of noble gases. The ability to estimate air sample results in the field is possible with the use of a portable single channel analyzer or a count rate meter.

The STP ERO monitors various plant detector and monitor inputs and parameters used to determine the source term present in reactor coolant, containment air spaces, and fuel storage area air spaces. These plant detector and monitor inputs are used from effluent, process, and area radiation monitor readings.

Based on the information provided for the planning standard, as presented and considered above, the NRC staff concludes that the licensee has established provisions for adequate methods, systems, and equipment for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition. Therefore, the NRC staff has determined that the planning standard of 10 CFR 50.47(b)(9) and applicable requirements of Sections IV.B.1 and IV.E.2 of Appendix E to 10 CFR Part 50 have been adequately addressed.

3.2.10 NUREG-0654, Section II.J, “Protective Response”

NUREG-0654, Evaluation Criterion II.J, addresses planning standard 10 CFR 50.47(b)(10), which states:

> A range of protective actions has been developed for the plume exposure pathway EPZ for emergency workers and the public. In developing this range of actions, consideration has been given to evacuation, sheltering, and, as a supplement to these, the prophylactic use of potassium iodide (KI), as appropriate. Evacuation time estimates have been developed by applicants and licensees. Licensees shall update the evacuation time estimates on a periodic basis. Guidelines for the choice of protective actions during an emergency, consistent with Federal guidance, are developed and in place, and protective actions for the ingestion exposure pathway EPZ appropriate to the locale have been developed.

Sections IV.2 and IV.3 of Appendix E to 10 CFR Part 50, require nuclear power reactor licensees to use NRC-approved evacuation time estimates (ETEs) and updates to the ETEs in the formulation of PARs and shall provide the ETEs and ETE updates to State and local governmental authorities for use in developing offsite protective action strategies.

Section IV B.1 of Appendix E to 10 CFR Part 50, requires in part a description of the EALs that are to be used for determining when and what type of protective measures should be considered within and outside the site boundary to protect health and safety.

Section IV.I of Appendix E to 10 CFR Part 50, requires a range of protective actions to protect onsite personnel during hostile action to be developed to ensure the continued ability of the licensee to safely shut down the reactor and perform the functions of the licensee's emergency plan.

The proposed STPEGS Emergency Plan states, in part, that it maintains procedures to provide for a range of protective actions for all areas controlled by station. Protective actions have been developed for radiological incidents and to protect personnel during hostile actions directed at the site. Site-wide notifications and announcements are routinely made using the plant public address system. Onsite personnel are notified of a declared emergency through the public address system within 15 minutes of declaration.

Personnel assembled inside the protected area are accounted for within 30 minutes of a declaration of a site area emergency or higher ECL using the security computer system. If accountability is delayed for safety or security concerns, then the personnel accountability will be performed as soon as conditions permit. Individuals that are not accounted for will be identified by security. Accountability will be maintained continuously throughout the event for personnel inside the protected area.

Once initiated, a site evacuation directs onsite personnel to proceed to designated offsite reception centers. The offsite reception centers that are designated for site evacuation have been identified with the Matagorda County Emergency Management. Site personnel evacuating from within the protected area are monitored for contamination and decontaminated before leaving the site. If conditions do not allow for onsite monitoring and decontamination, they will report to a designated offsite reception center for radiological monitoring and decontamination. If necessary, site personnel evacuating located outside the protected area will be monitored and decontaminated at an offsite reception center.

Onsite personnel will evacuate the site when directed using their method of transportation to arrive at the site. Onsite personnel without transportation will be identified during the assembly phase and provided transportation.

Emergency response personnel who remain onsite or arrive during the declared emergency have access to protective equipment and supplies to minimize the effects of radiological exposures or contamination. Protective measures include individual respiratory protection, individual thyroid protection, and protective clothing.

The proposed STPEGS Emergency Plan states that offsite PARs have been developed with agreements made with the Texas Department of State Health Services for the plume exposure pathway EPZ that include evacuation and sheltering. The STP offsite PARs are informed by the ETE study and in coordination with the State and county agencies, and are based on the following guidance documents:

- NUREG-0654/FEMA-REP-1, Supplement 3, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants, Guidance for Protective Action Strategies," November 2011 (Reference 12); and

- U.S. Environmental Protection Agency (EPA), "EPA-400-R-92-001, 'Manual of Protective Action Guides and Protective Actions for Nuclear Incidents,'" May 1992 (Reference 13).

Based on the information provided for the planning standard, as presented and considered above, the NRC staff concludes that the licensee has developed a range of protective actions for the plume exposure pathway EPZ for emergency workers and the public. Therefore, the NRC staff has determined that the planning standard of 10 CFR 50.47(b)(10) and applicable requirements of Appendix E, Sections IV.2, IV.3, IV.B.1, and IV.I to 10 CFR Part 50 have been adequately addressed.

3.2.11 NUREG-0654, Section II.K, "Radiological Exposure Control"

NUREG-0654, Evaluation Criterion II.K, addresses planning standard 10 CFR 50.47(b)(11), which states:

> Means for controlling radiological exposures, in an emergency, are established for emergency workers. The means for controlling radiological exposures shall include exposure guidelines consistent with EPA Emergency Worker and Lifesaving Activity Protective Action Guides.

Sections IV.E.1 and IV.E. 3 of Appendix E to 10 CFR Part 50 require equipment at the site for personnel monitoring, and facilities and supplies for decontamination of onsite individuals.

The requirements of 10 CFR 50.47(b)(11) and 10 CFR Part 50, Appendix E, Sections IV.E.1 and IV.E.3 are addressed in Section K, "Radiological Exposure Control," of the proposed STPEGS Emergency Plan.

The proposed STPEGS Emergency Plan states that if emergency workers are expected to receive dose in excess of 10 CFR Part 20 occupational dose limits, approval is required.

Onsite exposure guidelines have been established and are consistent with the EPA guidance document, EPA-400-R-92-001, Table 2-2, "Guidance on Dose Limits for Workers Performing Emergency Services." In addition, the Federal guidance used to determine the recommended doses of KI for different risk groups is EPA-400/R-17/001, "PAG Manual: Protective Action Guides and Planning Guidance for Radiological Incidents," Table 2-2, "Threshold Thyroid Radioactive Exposures and Recommended Doses of KI for Different Risk Groups,." dated January 2017 (Reference 14).

Radiation protection personnel monitor and assess the radiation doses received by STP emergency response personnel on a 24-hour per day basis throughout a declared event with

emergency worker dose received being documented and recorded. Direct measurement of emergency worker exposure is provided by the use of electronic dosimeters. This measurement begins at the time of exposure. If direct measurement of airborne concentrations is not possible during the time of exposure, emergency workers will be provided respiratory protection and the total exposure will be calculated afterwards using followup survey data and whole-body counting equipment. Non-STP emergency workers that support onsite activities are issued dosimetry and are monitored by STP RP personnel when responding to areas where a radiation dose may be received. The site access process for these non-STP emergency workers will be implemented by site security personnel. All emergency response workers that are dispatched into radiation areas or areas of unknown radiation levels are briefed on the task and environmental conditions and are provided appropriate monitoring and personnel protective equipment.

Individual dosimeters, such as dosimeters of legal record (synonymous with thermoluminescent dosimeters), self-reading dosimeters, or extremity dosimetry, are used by emergency response workers and are also worn by STP radiation worker qualified personnel who may be required to work in radiological controlled areas. Dosimeters are also available for offsite responders if they are required to enter an radiological controlled areas or are expected to receive a dose in excess of 100 millirem in a year.

The onsite contamination control measures are summarized below:

- Contamination control limits are defined in RP procedures.

- Individuals leaving contaminated areas are monitored to ensure that they and their clothing are not radioactively contaminated.

- When a radiological release has occurred, eating, drinking, smoking, and chewing are not allowed until the facility manager has determined that it is safe to do so.

- All equipment is checked for contamination before being taken from a known contaminated area. Equipment will be released for use outside of the contaminated areas only if radioactive contamination is within acceptable limits.

- Emergency response teams that enter areas where they are expected to receive higher than normal doses will be briefed on the task assigned, the planned route to the destination, allowed dose and dose rates, stay time, protective clothing/equipment, and other hazards or conditions as applicable.

- Offsite FMTs are briefed about their duties, actions, potential dose rates, and protective clothing requirements.

- Individual, equipment, and material decontamination is performed using the RP procedures. Personnel decontamination facilities are located near the radiological controlled area egress point.

Based on the information provided for the planning standard, as presented and considered above, the NRC staff concludes that the licensee has established the means for controlling radiological exposures for emergency workers in an emergency. Therefore, the NRC staff has

determined that the planning standard of 10 CFR 50.47(b)(11) and the applicable requirements of Appendix E, Sections IV.E.1 and IV.E.3, to 10 CFR Part 50 have been adequately addressed.

3.2.12 NUREG-0654, Section II.L, “Medical and Public Health Support”

NUREG-0654, Evaluation Criterion II.L, addresses planning standard 10 CFR 50.47(b)(12), which requires the following:

> Arrangements are made for medical services for contaminated injured individuals.

Sections IV.E.4 and E.5 of Appendix E to 10 CFR Part 50, require facilities and medical supplies at the site for appropriate emergency first aid treatment, and arrangements for medical service providers qualified to handle radiation emergencies onsite.

Sections IV.E.6 of Appendix E to 10 CFR Part 50, requires that arrangements are made for the transportation of contaminated injured individuals from the site to specifically identified treatment facilities outside the site boundary.
The requirements of 10 CFR 50.47(b)(12) criteria and 10 CFR Part 50, Appendix E, Sections IV.E.4, E.5, and E.6, are addressed in portions of Section L, “Medical and Public Health Support,” of the proposed STPEGS Emergency Plan.

STP maintains first aid supplies and equipment for the treatment of injured persons. A first aid station is located on the first floor of the Nuclear Support Center Building that has provisions for treatment of minor injuries.

The proposed STPEGS Emergency Plan lists the primary and backup offsite medical facilities that arrangements have been made with to provide for the medical treatment of the injured personnel that are contaminated or over exposed.

Prior to transporting injured onsite personnel to a medical facility, the licensee will evaluate the onsite injured individual for radioactive contamination in accordance with the RP department procedures. The U.S. Department of Energy Radiation Emergency Assistance Center Training Site located in Oak Ridge, Tennessee, is available to respond to and/or provide service and assistance to offsite medical facilities in the event of a severe radiation accident. The transportation of contaminated, injured individuals and the means to control contamination while transporting victims of radiological incidents to medical support facilities is performed by STP personnel. STP personnel also assist with the decontamination of transport vehicles.

Based on the information provided for the planning standard, as presented and considered above, the NRC staff concludes that the licensee has made arrangements for medical services for contaminated injured individuals. Therefore, the NRC staff has determined that the planning standard of 10 CFR 50.47(b)(12) and the applicable requirements of Appendix E, Sections IV.E.4, E.5 and E.6, to 10 CFR Part 50 have been adequately addressed.

3.2.13 NUREG-0654, Section II.M, “Recovery and Reentry”

As reflected in NUREG-0654, Evaluation Criterion II.M, 10 CFR 50.47(b)(13) requires the following:

> General plans for recovery and reentry are developed.

Section IV.H, “Recovery,” of Appendix E of 10 CFR Part 50 requires a description of the criteria to be used to determine when, following an accident, reentry of the facility would be appropriate or when operation could be resumed.

The requirements of 10 CFR 50.47(b)(13) and 10 CFR Part 50, Appendix E, Section IV.H are addressed in portions of Section M, “Recovery and Reentry Planning and Post-Accident Operations,” of the proposed STPEGS Emergency Plan.

Guidance for determining the transition from an emergency to a recovery organization is provided in the STP procedures. The composition of the recovery organization will depend on the nature of the accident and the conditions following the accident. The proposed STPEGS Emergency Plan addresses general principles that serve as guides for developing a recovery plan. It is the responsibility of the Emergency Director to determine that the facility and surroundings are safe for reentry. The Emergency Director will designate a Recovery Manager to constitute the recovery organization. Guidelines, as applicable to the specific situation, will be addressed prior to terminating the emergency and are delineated in the proposed STPEGS Emergency Plan. Upon termination of the emergency phase, and at the discretion of the Emergency Director following consultation with offsite authorities, the STP ERO will shift to the recovery organization.

The Recovery Manager will structure the recovery organization to accomplish the general objectives listed in the proposed STPEGS Emergency Plan. Members of the ERO will be informed when recovery is initiated. The recovery organization may be structured similar to the ERO, with additional modifications depending on the nature of the accident, post-accident conditions, and other factors. Figure M.2-1, “Recovery Organization,” in the proposed STPEGS Emergency Plan illustrates a generic recovery organization structure. It may be modified or supplemented as necessary to fit the particular circumstances.

Based on the information provided for the planning standard, as presented and considered above, the NRC staff concludes that the licensee has developed general plans for recovery and reentry. Therefore, the NRC staff has determined that the planning standard of 10 CFR 50.47(b)(13) and the applicable requirements of Appendix E, Section IV.H, to 10 CFR Part 50 have been adequately addressed.

3.2.14 NUREG-0654, Section II.N, “Exercises and Drills”

NUREG-0654, Evaluation Criterion II.N, addresses planning standard 10 CFR 50.47(b)(14), which requires the following:

> Periodic exercises are (will be) conducted to evaluate major portions of emergency response capabilities, periodic drills are (will be) conducted to develop and maintain key skills, and deficiencies identified as a result of exercises or drills are (will be) corrected.

Section IV.F, “Training,” of Appendix E to 10 CFR Part 50, requires, in part, a description of the program to provide for: “(a) The training of employees and exercising, by periodic drills, of emergency plans to ensure that employees of the licensee are familiar with their specific emergency response duties, and (b) The participation in the training and drills by other persons whose assistance may be needed in the event of a radiological emergency.”

The requirements of 10 CFR 50.47(b)(14) and 10 CFR Part 50, Appendix E, Section IV.F are addressed in portions of Section N, “Exercises and Drills,” of the proposed STPEGS Emergency Plan.

The proposed STPEGS Emergency Plan states that an exercise is an event that tests the integrated capability and a major portion of the elements of the emergency plans and organizations. Over the period of the exercise cycle, exercises will test the adequacy of timing and content of implementing procedures and methods, test emergency equipment and communications networks, test the public alert and notification system, and ensure that emergency organization personnel are familiar with their duties.

The proposed STPEGS Emergency Plan further states that critiques of each drill and exercise will be held following each event to evaluate areas (such as personnel performance, response procedure processes, and facility and equipment adequacy) and identify issues. Provisions are made for Federal, State and county representatives to observe and participate in drill and exercise critiques when present.

The proposed STPEGS Emergency Plan states that it will conduct a plume exposure pathway exercise biennially. Specifically, the plume exposure pathway exercise is developed to provide the ERO with the opportunity to demonstrate proficiency in key skills necessary to implement the principal functional areas of emergency response (those which test the adequacy of timing and content of implementing procedures, test equipment and communications networks, and ensure that the ERO are familiar with their duties).

Additionally, the proposed STPEGS Emergency Plan provides a description of the types of exercises and drills, frequency, as well as a description of the various required scenario elements to be conducted within the 8-year exercise cycle consistent with the evaluation criteria in NUREG-0654, Section II.N.

The proposed STPEGS Emergency Plan changes the frequency of the performance of communication tests that include the aspect of understanding the content of messages from monthly and quarterly to annual, as the aspect of message understanding will be performed during communication drills. The licensee states that documentation of communications drills will be required annually consistent with other drill requirements. Considering frequent timeframes (monthly, quarterly and annually) of testing various communication systems at STP, the NRC staff finds that the change in frequency to annual of the performance of communication tests that include the aspect of understanding the content of messages will not impact the ability of STP to perform communications during an emergency occurring at STP.

The licensee states that the current STPEGS Emergency Plan has no requirement for off-hours report-in drills. NUREG-0654, Evaluation Criterion N.4.h, provides that off-hours report-in drills should be unannounced and conducted biennially. The proposed STPEGS Emergency Plan specifies that an unannounced off-hours report-in drill be performed once per 8-year cycle. The licensee states that establishing the period for the off-hours report-in drill as once per 8-year cycle is based on the NUREG-0654, Revision 2, Evaluation Criterion N.1.c guideline for a

6:00 p.m. and 4:00 a.m. drill or exercise to be performed once per every 8-year cycle (which is off-hours). In addition to the guidance of Evaluation Criterion N.1.c, every biennial exercise requires demonstration of ERO response and ERF [emergency response facility] activation following declared emergencies. The licensee further states that requiring additional biennial off-hours report-in drills is a burden to the organization without a commensurate level of benefit to the emergency preparedness program. Based on the licensee's justification, the NRC staff finds this change in frequency, from the guidance in NUREG-0654, acceptable.

The licensee states that the current STPEGS Emergency Plan has no requirement for call-in drills. NUREG-0654, Revision 2, Evaluation Criterion N.4.h provides that off-hours call-in drills be conducted at least quarterly, such that each ERO member's response time is validated at least biennially (with some drills being unannounced). The proposed STPEGS Emergency Plan specifies that an off-hours call-in drill be performed biennially. Additionally, the non-period specific requirement for some drills to be unannounced has been established as a biennial frequency. STP ERO notification is an all-call process, which for call-in drills will collect response time estimates from the entire ERO. The licensee states that this process validates all ERO members' response time each time it is used. Removing the quarterly requirement to test a portion of the ERO response and retaining the biennial requirement for a complete ERO response meets the intent of the element. Based on the licensee's justification, the NRC staff finds this change in frequency from the guidance in NUREG-0654 acceptable.

Based on the information provided for the planning standard, as presented and considered above, the NRC staff concludes that the licensee will conduct periodic exercises to evaluate major portions of emergency response capabilities, conduct periodic drills to develop and maintain key skills, and adequately correct deficiencies identified as a result of exercises or drills, consistent with the evaluation criteria in NUREG-0654, Section II.N. Therefore, the NRC staff has determined that the planning standard of 10 CFR 50.47(b)(14) and the applicable requirements of Appendix E, Section IV.F, to 10 CFR Part 50 have been adequately addressed.

3.2.15 NUREG-0654, Section II.O, "Radiological Emergency Response Training"

NUREG-0654, Evaluation Criterion II.O, addresses planning standard 10 CFR 50.47(b)(15), which requires the following:

> Radiological emergency response training is provided to those who may be called on to assist in an emergency.

Section IV.F of Appendix E to 10 CFR Part 50 requires a description of the program to provide for: "(a) The training of employees and exercising, by periodic drills, of emergency plans to ensure that employees of the licensee are familiar with their specific emergency response duties, and (b) The participation in the training and drills by other persons whose assistance may be needed in the event of a radiological emergency."

The requirements of 10 CFR 50.47(b)(15) and 10 CFR Part 50, Appendix E, Section IV.F are addressed in portions of Section O, "Radiological Emergency Response Training," of the proposed STPEGS Emergency Plan.

STP ERO personnel who are responsible for implementing the STPEGS Emergency Plan receive specialized training specific to their role in the organization. The training program for ERO personnel is developed based on the position-specific responsibilities. Requalification training for ERO members consists of ERO update/refresher training material and for

designated positions participation in drills. In addition to the STPEGS Emergency Plan overview training, personnel assigned to ERO functions will receive training specific to their position. Besides general ERO training, STP has also identified the following subject area training: Shift Managers and Emergency Directors, accident assessment personnel, radiological FMTs, fire brigade, repair and damage control teams, first aid personnel, and security training. Individuals assigned as first aid responders will maintain qualifications equivalent to Red Cross standard first aid techniques.

The proposed STPEGS Emergency Plan provides that it will offer emergency response training annually (once per calendar year) to hospital, ambulance/rescue, police, and fire department personnel who are called upon to provide assistance during an emergency. Training includes basic RP, the notification process for its organization, and its organization's expected role. For those local services support organizations who will enter the site, the offered training also includes the general layout of STP, an overview of the Emergency Plan, site access procedures, and the identity (by position and title) of the onsite individual who will control their support activities.

The proposed STPEGS Emergency Plan provides that training will be developed and evaluated in accordance with the principles of the Systems Approach to Training practices, when applicable, to ensure effectiveness and to identify areas that need improvement or correction. Revisions to the training program are identified with feedback from trainees in training and critique items during drills. All individuals participating in the ERO Training Program are given the opportunity to provide feedback of training sessions. Any weak or deficient areas identified are tracked in the corrective action program for correction.

Based on the information provided for the planning standard, as presented and considered above, the NRC staff concludes that the licensee has established radiological emergency response training for those who may be called on to assist in an emergency. Therefore, the NRC staff has determined that the planning standard of 10 CFR 50.47(b)(15) and applicable requirements of Appendix E, Section IV.F to 10 CFR Part 50 have been adequately addressed.

3.2.16 NUREG-0654, Section II.P, "Responsibility for the Planning Effort: Development, Periodic Review, and Distribution of Emergency Plans"

NUREG-0654, Evaluation Criterion II.P, addresses planning standard 10 CFR 50.47(b)(16), which requires the following:

> Responsibilities for plan development and review and for distribution of emergency plans are established, and planners are properly trained.

Section IV.G, "Maintaining Emergency Preparedness," of Appendix E to 10 CFR Part 50, requires a description of the provisions to be employed to ensure that the emergency plan, its implementing procedures, and emergency equipment and supplies are maintained up to date.

The requirements of 10 CFR 50.47(b)(16) and 10 CFR Part 50, Appendix E, Section IV.G are addressed in Section P, "Responsibility for the Planning Effort: Development, Periodic Review, and Distribution of Emergency Plans," of the proposed STPEGS Emergency Plan.

The proposed STPEGS Emergency Plan provides that training for the emergency preparedness staff at the site consists of an initial and continuing training process. The Chief Administrative Officer has the overall authority and responsibility for the proposed STPEGS Emergency Plan.

The Manager, Emergency Response is responsible for the development, maintenance, review and updating of the emergency plan, as well as the coordination of the plan with other response organizations.

The proposed STPEGS Emergency Plan (plan and extension documents) will be reviewed and certified to be current on an annual basis and updated if necessary. These updates take into account changes identified by drills and exercises, and the independent review. Any changes to regulations, issues identified by drills and exercises, assessments and audits, or other updates will be evaluated and incorporated into the STPEGS Emergency Plan as warranted. Revised copies of the Emergency Plan are posted and distributed in accordance with STPEGS Records Management System procedures. Changes to the proposed STPEGS Emergency Plan will be submitted to the NRC in accordance with 10 CFR 50.4. Revisions to the emergency plan implementing procedures are communicated to appropriate members of the STP ERO prior to or upon implementation.

The letters of agreements will be reviewed and certified annually and updated as needed. Changes to agreements may be coordinated with the annual review of the proposed STPEGS Emergency Plan.

The proposed STPEGS Emergency Plan states that the "[e]mergency preparedness program elements are reviewed by persons that have no direct responsibility for the implementation of the emergency preparedness program, in accordance with 10 CFR 50.54(t)." This independent review will include the emergency plan, procedures, training programs, drills/exercises, equipment, and State/county government interfaces. The review findings from this independent review will be submitted to appropriate STPNOC management personnel. The portion of the review involving the evaluation of the adequacy of interface with State and county governments will be reported to those agencies. The results of the review, along with recommendations for improvements, will be documented, and retained for a period of 5 years.

The STP ERO contact information is verified quarterly and updated as needed. Facility and support contact information in the Emergency Communications Directory will be verified quarterly and updated as needed.

Based on the information provided for the planning standard, as presented and considered above, the NRC staff concludes that the licensee has identified the responsibilities for plan development/review, and for distribution of emergency plans, and that planners are properly trained. Therefore, the NRC staff has determined that the planning standard of 10 CFR 50.47(b)(16) and requirements of Appendix E, Section IV.G to 10 CFR Part 50 have been adequately addressed.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the State of Texas official was notified of the proposed issuance of the amendments on January 6, 2020. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendments change the site emergency plan. The amendments change requirements with respect to the installation or use of facility components located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendments involve no

significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration published in the *Federal Register* on June 2, 2020 (85 FR 33752), and there has been no public comment on such finding. The amendments also relate to changes in recordkeeping, reporting, or administrative procedures or requirements. Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9) and 51.22(c)(10). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of these amendments.

6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) there is reasonable assurance that such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

7.0 REFERENCES

1. Capristo, A., STP Nuclear Operating Company, letter to U.S. Nuclear Regulatory Commission, "License Amendment Request to Revise South Texas Project Electric Generating Station (STPEGS) Emergency Plan," dated March 30, 2020 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML20090B745).

2. Capristo, A., STP Nuclear Operating Company, letter to U.S. Nuclear Regulatory Commission, "Supplement to License Amendment Request to Revise South Texas Project Electric Generating Station (STPEGS) Emergency Plan," dated April 29, 2020 (ADAMS Accession No. ML20120A618).

3. Capristo, A., STP Nuclear Operating Company, letter to U.S. Nuclear Regulatory Commission, "Response to Request for Additional Information for License Amendment Request to Revise the -STPEGS Emergency Plan (EPID: L 2020-LLA-0059)," dated August 25, 2020 (ADAMS Accession No. ML20238C027).

4. Capristo, A., STP Nuclear Operating Company, letter to U.S. Nuclear Regulatory Commission, "Supplement to Change Implementation Date for License Amendment Request to Revise the STPEGS Emergency Plan (EPID: L 2020-LLA-0059)," dated December 2, 2020 (ADAMS Accession No. ML20337A386).

5. U.S. Nuclear Regulatory Commission and Federal Emergency Management Agency, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," NUREG-0654/FEMA-REP-1, Revision 2, dated December 2019 (ADAMS Accession No. ML19347D139).

6. U.S. Nuclear Regulatory Commission, "Functional Criteria for Emergency Response Facilities," NUREG-0696, dated February 1981 (ADAMS Accession No. ML051390358).

7. U.S. Nuclear Regulatory Commission, “Interim Staff Guidance-Emergency Planning for Nuclear Power Plants,” NSIR/DPR-ISG-01, Revision 0, dated November 20, 2011 (ADAMS Accession No. ML113010523).

8. Galvin, D., U.S. Nuclear Regulatory Commission, email to Richards, D., STP Nuclear Operating Company, “South Texas Project - Request for Additional information - License Amendment Request to Revise the Emergency Plan (EPID: L 2020-LLA-0059),” dated July 27, 2020 (ADAMS Accession No. ML20209A620).

9. Enoch, J. D., STP Nuclear Operating Company, letter to U.S. Nuclear Regulatory Commission, “South Texas Project Electric Generating Station Emergency Plan,” dated April 7, 2020 (ADAMS Accession ML20099F480).

10. Nuclear Energy Institute, “Development of Emergency Action Levels for Non-Passive Reactors,” NEI 99-01, Revision 6, dated November 2012 (ADAMS Accession No. ML12326A805).

11. Regner, L. M., U.S. Nuclear Regulatory Commission, letter to Koehl, D. L., STP Nuclear Operating Company, “South Texas Project, Units and 2 - RE: Upgrade to Emergency Action Level Scheme [Amendment Nos. 206 and 194] (TAC Nos. MF4195 and MF4196),” dated August 20, 2015 (ADAMS Accession No. ML15201A195).

12. U.S. Nuclear Regulatory Commission and Federal Emergency Management Agency “Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants ‘Guidance for Protective Action Strategies,’” NUREG-0654/FEMA-REP-1, Revision 1, Supplement 3, dated November 2011 (ADAMS Accession No. ML113010596).

13. U.S. Environmental Protection Agency, “Manual of Protective Action Guides and Protective Actions for Nuclear Incidents,” EPA-400-R-92-001, dated May 1992.

14. U.S. Environmental Protection Agency, “PAG Manual: Protective Action Guides and Planning Guidance for Radiological Incidents,” EPA-400/R-17/001, dated January 2017 (ADAMS Accession No. ML17044A073).

Principal Contributors: Raymond Hoffman
Michael Norris
Amanda Marshall
Edward Robinson
Jeannette Arce
Kenneth Mott

Date: April 7, 2021

SUBJECT: SOUTH TEXAS PROJECT, UNITS 1 AND 2 - ISSUANCE OF AMENDMENT NOS. 221 AND 206 TO AUTHORIZE REVISION OF THE EMERGENCY PLAN BASED ON NUREG-0654/FEMA-REP-1, REVISION 2 (EPID L-2020-LLA-0057) DATED APRIL 7, 2021

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JArce, NSIR
RHoffman, NSIR
AMarshall, NSIR
KMott, NSIR
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ERobinson, NSIR

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OFFICE	NRR/DORL/LPL4/PM	NRR/DORL/LPL4/LA	NSIR/DPR/RLB/BC
NAME	DGalvin	PBlechman	JAnderson
DATE	2/1/2021	2/1/2021	10/27/2020
OFFICE	OGC - NLO	NRR/DORL/LPL4/BC	NRR/DORL/DD
NAME	TJones	JDixon-Herrity	CErlanger
DATE	2/18/2021	2/23/2021	2/28/2021
OFFICE	NRR/D	NRR/DORL/LPL4/PM	
NAME	AVeil (MKing for)	DGalvin	
DATE	4/7/2021	4/7/2021	

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