13.0 CONDUCT OF OPERATIONS

This chapter of the South Texas Project (STP), Units 3 and 4, Final Safety Analysis Report (FSAR) provides information relating to the preparations and plans for the design, construction, and operation of the plant. The purpose of this chapter is to document the U.S. Nuclear Regulatory Commission (NRC) staff's conclusions on whether the Combined License (COL) applicant establishes and maintains a staff of adequate size and technical competence and whether the operating plans to be followed by the licensee are adequate to protect public health and safety.

13.1 Organizational Structure of Applicant

13.1.1 Introduction

This section of the FSAR addresses the design, construction, preoperational, operational and maintenance responsibilities of the organization. The management and technical support organization includes a description of the corporate or home office organization, its functions and responsibilities, and the number and the qualifications of personnel. Activities of the organization include facility design, design review, design approval, construction management, testing, and operation of the plant. The descriptions of the design, construction, preoperational, operational, and maintenance responsibilities include the following:

- How these responsibilities are assigned by the headquarters staff and implemented within the organizational units.
- The responsible working- or performance-level organizational unit.
- The estimated number of persons to be assigned to each unit with responsibility for the project.
- The general education and experience requirements for identified positions or classes of positions.
- The early plans for providing technical support for the operation of the facility.

This section also describes the structure, functions, and responsibilities of the onsite organization established to operate and maintain the plant. As stated in of the Advanced Boiling-Water Reactor (ABWR) design certification document (DCD), Section 13.1 is out of ABWR standard plant scope. Therefore, the applicant provided information in this section of the COL FSAR that is specific to the STP, Units 3 and 4, application.

13.1.2 Summary of Application

In FSAR Section 13.1 Revision 12, the applicant has added subsections to FSAR Section 13.1. Several of these subsections differ from the structure in Section 13.1 of Regulatory Guide (RG) 1.206, "Combined License Applications for Nuclear Power Plants (LWR Edition)."

13.1.3 Regulatory Basis

The relevant requirements of the Commission regulations for the organizational structure of applicant, and the associated acceptance criteria, are in Sections 13.1.1 and 13.1.2-13.1.3 of

NUREG–0800, “Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants, (LWR Edition),” the Standard Review Plan (SRP).

In particular, the applicable regulatory guidance for the organizational structure of the applicant is as follows:

- American National Standards Institute (ANSI)/American Nuclear Society (ANS)-3.1-1993, as endorsed and amended by RG 1.8, Revision 3, “Qualification and Training of Personnel for Nuclear Power Plants.”

The applicable regulations and regulatory guidance for the management, technical support, and operating organizations of the applicant are as follows:

- Title 10 of the *Code of Federal Regulations* (10 CFR) 50.40(b), which requires the applicant to be technically qualified to engage in the proposed activities authorized by the license.

- 10 CFR 50.54 “Conditions of licenses” Items (j) through (m).

- RG 1.33, Revision 2, “Quality Assurance Program Requirements (Operation).”

13.1.4 Technical Evaluation

NUREG–0800, Section 13.1.2-13.1.3, “Operating Organization,” states that the applicant's operating organization should be characterized as follows:

1. The applicant is technically qualified as specified in 10 CFR 50.40(b).

2. An adequate number of licensed operators will be available at all required times to satisfy the minimum staffing requirements of 10 CFR 50.54(j–m).

3. On-shift personnel provide the initial facility response in the event of an emergency.

4. Organizational requirements for the plant manager and radiation protection manager have been satisfied.

5. Qualification requirements and qualifications of plant personnel conform to the guidance of RG 1.8.

6. Organizational requirements conform to the guidance of RG 1.33.

The staff compared Section 13.1 of the STP, Units 3 and 4, COL FSAR to the guidance in NUREG–0800, Section 13.1.2-13.1.3. This section of the COL FSAR is not part of the scope in the certified ABWR DCD.

The applicant has added new sections and information to Section 13.1 related to the site-specific organizational structure and beyond the structure described in RG 1.206. The new section titles are:

13.1.1, “Management and Technical Support Organization”
13.1.2, “Operating Organization”

13.1.3, “Qualifications of Nuclear Plant Personnel”

The applicant described the organization for the management and the means of providing technical support to the plant staff for the design, construction, and operation of the facility. The applicant also described plans for managing the project and utilizing the nuclear steam supply system vendor and the architect engineer. The applicant added that this chapter provides assurance that the applicant will establish and maintain a staff of adequate size and technical competence, and that operating plans are adequate to protect public health and safety.

The applicant described the assignment of plant operating responsibilities, the reporting chain up through the chief executive officer, the functions and responsibilities of each major plant staff group, the proposed shift crew complement for single-unit or multiple-unit operations, the qualification requirements for the plant staff, and staff qualifications. Resumes for management and principal supervisory and technical positions will be submitted upon request after position vacancies are filled.

The applicant has added text to Section 13.1.3, “Qualification of Nuclear Plant Personnel,” stating that the qualifications of managers and supervisors of the technical support organization will meet the education and experience requirements described in ANSI 18.1/ANS-3.1-1993 and in RG 1.8.

The above information contributes to the judgment that the applicant is in compliance with the requirements of 10 CFR 50.40(b). That is, the applicant is technically qualified to engage in design and construction activities and to operate a nuclear power plant; and the applicant will have the necessary managerial and technical resources to support the plant staff in the event of an emergency. The applicant has identified the organizational positions responsible for fire protection-related situations and has delegated the authority of these positions to implement fire protection requirements.

13.1.5 Post Combined License Activities

There are no post COL activities related to this section.

13.1.6 Conclusion

The staff compared the information in the STP, Units 3 and 4, FSAR Section 13.1 to the relevant NRC regulations and the guidance in, Section 13.1.1-13.1.3 of NUREG–0800. The staff’s review concluded that the applicant has provided sufficient information to satisfy the requirements of the NRC regulations.

The staff’s review confirmed that the applicant has addressed the relevant information to satisfy the requirements of 10 CFR 50.40(b) and 10 CFR 50.54(j–m), and no outstanding information is expected to be addressed in the COL FSAR related to this section.

13.2 Training

13.2.1 Introduction

This section of the FSAR addresses the description and schedule of the training program for reactor operators and senior reactor operators (i.e., licensed operators). The discussion addresses the scope of licensing examinations as well as training requirements. The

licensed operator training program also includes the requalification programs required in 10 CFR 50.54(i)(i-1) and 10 CFR 55.59, "Requalification." In addition, this section of the FSAR includes the description and schedule of the training program for non-licensed plant staff.

13.2.2 Summary of Application

Section 13.2 of the STP, Units 3 and 4, COL FSAR Revision 12 incorporates by reference Nuclear Energy Institute (NEI) 06–13, "Template for an Industry Training Program Description." In addition, in FSAR Section 13.2, the applicant provided the following:

COL License Information Item

- COL License Information Item 13.1 Incorporation of Operating Experience

The applicant provided information to address COL Information Item 13.1. The applicant added that "the results of reviews of operating experience are incorporated into training and retraining programs in accordance with the provisions of the Three Mile Island (TMI) Action Item I.C.5, Appendix 1A."

13.2.3 Regulatory Basis

The relevant requirements of the Commission regulations for the training, and the associated acceptance criteria, are in Section 13.2 of NUREG–0800. In particular, the regulatory basis for accepting the applicant's information in Section 13.2 is in:

- 10 CFR Part 19, "Notices, Instructions and Reports to Workers: Inspection and Investigations,"
- 10 CFR Part 26, "Fitness for Duty Programs,"
- 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities,"
- 10 CFR Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants," and 10 CFR Part 55, "Operators' Licenses,"
- Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities," of 10 CFR Part 50,
- RG 1.8, Revision 3, "Qualification and Training of Personnel for Nuclear Power Plants," and RG 1.149; Revision 3, "Nuclear Power Plant Simulation Facilities for Use in Operator Training and License Examinations,"
- NUREG–1021, "Operator Licensing Examination Standards for Power Reactors"; and NUREG–1220, "Training Review Criteria and Procedures."

The COL License Information Item 13.1 is reviewed using the guidance in NUREG–0800, Section 13.2.1, "Reactor Operator Requalification Program; Reactor Operator Training," and Section 13.2.2, "Non-Licensed Plant Staff Training."

The Operational Program for the Non-Licensed Plant Staff Training Program is in 10 CFR 50.120, "Training and qualification of nuclear power plant personnel," and 10 CFR 52.79(a)(33).

The Operational Program for the Reactor Operator Training Program is in 10 CFR 55.13, "General exemption"; 10 CFR 55.31, "How to apply"; 10 CFR 55.41, "Written examinations: Operators"; 10 CFR 55.43, "Written examinations: Senior operators"; and 10 CFR 55.45, "Operating tests."

The Operational Program for the Reactor Operator Requalification Program is satisfied based on meeting the requirements of 10 CFR 52.79(a)(34), 10 CFR 50.54(i), and 10 CFR 55.59.

The relevant criteria for reviewing COL License Information Item 13.1, which relates to the incorporation of operating experience, are based on meeting the provisions of the TMI Action Item I.C.5, Appendix 1A, "Feedback of Operating Experience." Moreover, COL License Information Item 13.1 is satisfied based on following the guidance in Section 13.2 of NUREG-0800.

13.2.4 Technical Evaluation

The staff reviewed Section 13.2 of the STP, Units 3 and 4, COL FSAR and checked the referenced ABWR DCD. This section is not part of the certified ABWR DCD.

The staff reviewed the following information in the COL FSAR:

COL License Information Item

- COL License Information Item 13.1 Incorporation of Operating Experience

The applicant provided information in Table 13.4S-1, "Operational Programs Required by NRC Regulation and Program Implementation," regarding program implementation milestones. NUREG–0800, Subsection 13.2.2.I.1 and Subparts B, C, and D require numerous training programs to be implemented relative to (before) loading or receiving fuel. Table 13.4S-1, in many cases, did not accurately reflect these milestones. As a result, the staff issued request for additional information (RAI) 13.02.02-1 requesting the applicant to clarify or modify FSAR Table 13.4S-1 to ensure that the intent of NUREG–0800 is met. In its response to RAI 13.02.02-1, dated July 21, 2009 (ML092050075), the applicant indicated that Table 13.4S-1 will be revised to state, "implementation will occur prior to the milestone indicated." As such, the reactor operator training program will be implemented 18 months prior to scheduled date of fuel load. The staff determined that this response is acceptable. The staff verified that the applicant has made the proposed changes to Table 13.4S-1 in Revision 4 of the STP, Units 3 and 4, COL FSAR. Therefore, the staff considers RAI 13.02.02-1 to be resolved and closed.

The applicant stated that NEI 06–13, "Template for an Industry Training Program Description," including all subsections, is incorporated by reference. NEI 06–13A, Revision 1 was written to provide COL applicants with a generic program description for use with COL application submittals. In a letter dated December 5, 2008, the staff stated that the training template of NEI-06–13A, Revision 1, is an acceptable means for describing training programs for licensed operators and non-licensed plant staff (ML082950140). The staff determined the applicant's incorporation of NEI 06–13A, Revision 1 is acceptable because it utilizes a NRC-endorsed methodology.

The staff performed this review in accordance with the requirements of TMI Action Item I.C.5 on the incorporation of operational experience into the training and procedure development programs. The staff used the applicable sections of the SRP and RG 1.206 and determined that the applicant's response is acceptable.

13.2.5 Post Combined License Activities

The staff will include the following license condition:

The reactor operator training program will be implemented 18 months prior to scheduled date of fuel load.

13.2.6 Conclusion

The staff compared the information in the application to the relevant NRC regulations and the guidance in Sections 13.2.1 and 13.2.2 of NUREG–0800. The staff's review concluded that the applicant is in compliance with the NRC regulations. The staff also concluded that the applicant has adequately addressed COL License Information Item 13.1 regarding the incorporation of operating experience in accordance with Sections 13.2.1 and 13.2.2 of NUREG–0800.

The staff's review confirmed that the applicant has addressed the relevant information relating to training by incorporating NEI 06–13 by reference. The staff's review also confirmed that the applicant has adequately addressed the guidance in NUREG–0800, Sections 13.2.1 and 13.2.2, and no outstanding information is expected to be addressed in the COL FSAR related to this section. The information is therefore acceptable.

13.3 Emergency Planning

13.3.1 Introduction

This section of the FSAR addresses the plans, design features, facilities, functions, and equipment necessary for emergency planning (EP) that must be considered in a COL application. This section of the FSER addresses both the applicant's onsite emergency plan and the State and local offsite emergency plans, which the NRC and the Federal Emergency Management Agency (FEMA) have evaluated to determine whether the plans are adequate and that there is reasonable assurance that they can be implemented. The emergency plans express the overall concept of operation, describe the essential elements of advance planning that have been considered, and describe the provisions that have been made to cope with radiological emergency situations.

13.3.2 Summary of Application

Section 13.3 of the STP, Units 3 and 4, COL FSAR Revision 12 incorporates by reference Section 13.3 of the certified ABWR DCD Revision 4, referenced in 10 CFR Part 52, Appendix A, "Design Certification Rule for the U.S. Advanced Boiling Water Reactor," with no departures. Table 13.3-1, "ABWR Design Considerations for Emergency Planning Requirements," of the COL FSAR described the design considerations for the technical support center (TSC), operational support center (OSC), emergency operations facility (EOF), counting room for analyzing post-accident samples, and an onsite decontamination facility. In addition, in FSAR Section 13.3, the applicant provided the following:

COL License Information Item

- COL License Information Item 13.2 Emergency Plans

In COL FSAR Subsection 13.3.1.1, the applicant stated:

> A comprehensive site Emergency Plan for STP is provided in COLA Part 5.
>
> Commitment:
>
> Commitments to incorporate specific items in the Emergency Plan implementing procedures made in letter U7-C-NINA-NRC-120055 will be verified complete as part of ITAAC closure for the ITAAC listed in Part 9 Table 4.0-1 Item 10.0.

Onsite Emergency Plans

Part 5, "Emergency Plan," of the COL application includes the emergency plan for responding to a broad range of radiological emergencies, including hostile actions, at STP, Units 3 and 4.

Offsite Emergency Plans

The Texas Radiological Emergency Management (REM) Plan is included in Section 5.6, "State of Texas Emergency Management Plan," in Part 5 of the COL application. The Texas REM Plan consists of five tabs and a manual of REM procedures and is maintained under a separate cover by the Department of State Health Services (DSHS). The REM Plan assigns responsibilities to State agencies and details procedures for conducting a coordinated response to radiological emergencies. The five tabs in the REM Plan address five types of emergencies:

- Fixed nuclear facility accidents.
- Production/utilization accidents.
- Federal facility accidents.
- Transportation accidents.
- Waste storage/disposal accidents.

The REM Procedures Manual consists of a series of procedures that provide guidance and ensure uniformity in the performance of selected tasks applicable to any or all of the various types of radiological emergencies. Where specific instructions are required for implementing a given procedure, with respect to an individual facility or accident type, those instructions are incorporated in the appropriate tab of the Texas REM Plan.

The "Emergency Management Basic Plan for Matagorda County, Bay City, and Palacios," is included as Section 5.5, "Matagorda County Emergency Management Basic Plan," in Part 5, "Emergency Plan," of the STP COL application. This plan provides a framework for officials of Matagorda County to use for planning and performing their respective emergency functions including a backup alert and notification system.

ITAAC

In COL application Part 9, Section 4.0, "Emergency Planning ITAAC," the applicant proposed site-specific EP - inspections, tests, analyses, and acceptance criteria (EP-ITAAC) in Table 4.0-1, "Emergency Planning – Inspection, Test, Analysis and Acceptance Criteria (EP-ITAAC)."

Section 2.17, “Emergency Response Facilities,” in Tier 1 of the COL application incorporates by reference all tables in Section 2.17, Tier 1, of ABWR DCD Revision 4. Table 2.17.1, “Emergency Response Facilities,” contains five EP-ITAAC related to the location and size of the TSC, the location of the OSC, TSC and OSC voice communications, and plant parameter displays in the TSC.

License Condition

The applicant proposed the following license condition:

- STP Nuclear Operating Company shall submit a fully developed set of emergency action levels (EALs) to the NRC in accordance with NEI 99–01, Revision 5, “Methodology for Development of Emergency Action Levels,” - endorsed EAL scheme with the exceptions noted below:
  - STP, Units 3 and 4, will exclude NEI 99–01, Revision 5 Initiating Conditions (ICs) SU3, SA4, and SS6. These ICs are not applicable to the STP based on the ABWR Digital Instrumentation and Controls (DI&Cs) design.
  - STP will replace ICs SA4 and SS6 in the final Emergency Action Level Bases Document for STP, Units 3 and 4. These ICs will be applicable to STP, Units 3 and 4, DI&Cs.
  - STP, Units 3 and 4, will include the addition of ICs for Cold Shutdown CU9 and CA5 in the final Emergency Action Level Bases Document for STP, Units 3 and 4. These ICs are applicable to the STP, Units 3 and 4, DI&Cs.
- These fully developed EALs shall include the requirement to make an emergency declaration within 15 minutes of the existence of the condition in order to satisfy 10 CFR Part 50 Appendix E, Section IV.C.2.
- These fully developed EALs shall be submitted to the NRC for confirmation at least 180 days before initial fuel load.
- STP Nuclear Operating Company shall validate the existing on-shift staffing submitted in COLA Part 5 “Emergency Plan,” Section C using the method of NEI 10-05 Rev. 0, “Assessment of On-Shift Emergency Response Organization Staffing and Capabilities,” when a physical plant and plant procedures are available. The results of the analysis shall be submitted to the NRC for confirmation at least 180 days before initial fuel loading.

13.3.3 Regulatory Basis

The regulatory basis of the information incorporated by reference is in NUREG–1503, “Final Safety Evaluation Report Related to Certification of the Advanced Boiling Water Reactor Design,” (July 1994) (ML080670560), and in NUREG–1503, Supplement 1, “Final Safety Evaluation Report Related to the Certification of the Advance Boiling Water Reactor Design,” (May 1997) (ML080710134).

The applicable regulatory requirements and guidance for EP are as follows:

- 10 CFR 52.79(a)(21) and 10 CFR 52.79(a)(22)(i) require that the FSAR include emergency plans that comply with the requirements of 10 CFR 50.47, "Emergency plans," and Appendix E to 10 CFR Part 50, and certifications from State and local government agencies with EP responsibilities. Under 10 CFR 50.47(a)(1)(ii), no initial COL under the requirements of 10 CFR Part 52 will be issued unless a finding is made by the NRC that there is a reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency. In addition, under 10 CFR 50.47(a)(2), the NRC will base the finding on a review of FEMA's findings and determinations as to whether State and local offsite emergency plans are adequate and whether there is reasonable assurance that they can be implemented, and on NRC assessments as to whether the applicant's onsite emergency plans are adequate and whether there is reasonable assurance that they can be implemented.

- The staff considered the applicable requirements in 10 CFR 52.77, "Contents of application; general information," 10 CFR 52.80, "Contents of application; additional technical information," 10 CFR 50.33(g), and 10 CFR 100.21, "Non-seismic siting criteria."

- NUREG–0800 identifies NUREG–0654/FEMA-REP-1, Revision 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants – Final Report," and other related guidance that staff should consider during the review. In addition, the staff considered NUREG/CR–7002, "Criteria for Development of Evacuation Time Estimate Studies," dated November 2011; NUREG/CR–6863, "Development of Evacuation Time Estimate Studies for Nuclear Power Plants," dated January 2005; and Interim Staff Guidance (ISG) NSIR/DPR-ISG-01, "Emergency Planning for Nuclear Power Plants," Revision 0, dated November 2011. The acceptance criteria are identified in NUREG–0800, Section 13.3.II. The applicable regulatory guidance for reviewing emergency preparedness as an operational program is established in NUREG–0800, Section 13.4.

- Section 13.3 of NUREG–0800, states that if an application is for an additional reactor or reactors at an operating reactor site, and the applicant proposes to incorporate and extend elements of the existing EP program to the new reactor (included by reference), those existing elements should be considered acceptable and adequate. The reviewer should generally focus the review on the extension of the existing program to the new reactor and should determine whether the incorporated EP program information from the existing reactor site is: (1) applicable to the proposed reactor; (2) up-to-date when the application is submitted; and (3) reflects the use of the site for constructing a new reactor (or reactors) and appropriately incorporates the new reactor(s) into the existing plan. Accordingly, the applicant submitted a modification of the STP, Units 1 and 2, Emergency Plan to reflect STP, Units 3 and 4.

- In addition, Appendix A to 44 CFR Part 353, "Memorandum of Understanding (MOU) Between Federal Emergency Management Agency and Nuclear Regulatory Commission Relating to Radiological Emergency Planning and Preparedness," dated September 14, 1993, states that FEMA is responsible for the findings and determinations as to whether offsite emergency plans are adequate and can be implemented. FEMA radiological emergency preparedness (REP) documents provide guidance on various topics for use by State and local organizations responsible for REP

and response. NUREG–0654/FEMA-REP-1 provides a basis for State and local governments to develop radiological emergency plans.

13.3.4 Technical Evaluation

As documented in NUREG–1503, the staff reviewed and approved Section 13.3 of the certified ABWR DCD. The staff reviewed Section 13.3 of the STP, Units 3 and 4, COL FSAR and checked the referenced ABWR DCD to ensure that the combination of the information in the COL FSAR and the information in the ABWR DCD appropriately represents the complete scope of information relating to this review topic.[1] The staff's review confirmed that the information in the application and the information incorporated by reference address the required information relating to the EP.

The staff reviewed the following information in the COL FSAR:

COL License Information Item

- COL License Information Item 13.2 Emergency Plans

The staff's review of the EP information related to COL License Information Item 13.2 is in Attachment 13.3A, "COL Information Items, Supplemental Information Items and Departures," of this SER.

Supplemental Information

The staff's review of the information provided in the COL application that is not part of the STP, Units 3 and 4, Emergency Plan is addressed in Attachment 13.3B, "Emergency Planning Information in the Application," of this SER section.

The staff reviewed the changes in the STP, Units 1 and 2, Emergency Plan that were identified in the STP, Units 3 and 4, Emergency Plan for conformance with the applicable standards and requirements identified in Section 13.3 of NUREG–0800. The results of the staff's review are in Attachment 13.3C, "Onsite Emergency Plan." The staff also reviewed the License Conditions proposed by the applicant regarding shift staffing analysis (see SER Subsection 13.3C.2.3), and the EAL scheme for STP (see SER Subsection 13.3C.4.1). In addition, the staff reviewed the radiological consequences to personnel in the TSC from postulated fission product releases and determined the information acceptable.

The staff also reviewed and compared Table 4.0-1, "Emergency Planning - Inspection, Test, Analysis, and Acceptance Criteria (EP-ITAAC)," in COL application Part 9, against the generic ITAAC in NUREG–0800, Section 14.3, Table 14.3.10-1, "Emergency Planning – Generic Inspections, Tests, Analyses, and Acceptance Criteria (EP ITAAC)." The results of the staff's review are in Section 13.3C.19, "Emergency Planning ITAAC," of this SER.

Pursuant to 10 CFR 52.79(a)(21) and 10 CFR 52.81, "Standards for review of applications," the staff reviewed the COL application according to the standards set out in 10 CFR Part 50, including 10 CFR 50.47 and 10 CFR Part 50, Appendix E. The results of the staff's review are in Attachments 13.3A, "COL License Information Items, Supplemental Information Items and

[1] See *"Finality of Referenced NRC Approvals"* in SER Section 1.1.3, for a discussion on the staff's review related to verification of the scope of information to be included in a COL application that references a design certification.

Departures," 13.3B, "Emergency Planning Information in the Application," and 13.3C, "Onsite Emergency Plans."

FEMA reviewed the offsite emergency plans for the State of Texas, Matagorda County, and the incorporated cities of Bay City and Palacios. FEMA also reviewed the applicant's responses to the RAIs. On January 27, 2010, FEMA submitted to the NRC an Interim Findings Report for Reasonable Assurance (ML100350989). FEMA's review of the offsite emergency plans determined that the plans are adequate, and there is reasonable assurance that they can be implemented.

License Conditions

For the reasons discussed in Section 13.3C.2 and 13.3C.4, the staff determined the following license conditions to be acceptable:

- STP Nuclear Operating Company shall submit a fully developed set of EALs to the NRC, in accordance with NEI 99–01, Revision 5 endorsed EAL scheme with the exceptions noted below:
  - STP, Units 3 and 4, will exclude NEI 99–01, (Revision 5) Initiating Conditions (ICs) SU3, SA4, and SS6. These ICs are not applicable to the STP based on the ABWR Digital Instrumentation and Controls (DI&Cs) design, and
  - STP will put replacement ICs for SA4 and SS6 into the final Emergency Action Level Bases Document for STP, Units 3 and 4. These replacement ICs will be applicable to the STP, Units 3 and 4, DI&Cs. These replacement ICs are included as Enclosures 2 (SA4) and 3 (SS6) to the letter dated September 28, 2009 (ML092730445).
  - STP will add ICs for Cold Shutdown CU9 and CA5 into the final Emergency Action Level Bases Document for STP, Units 3 and 4. These ICs are applicable to the STP, Units 3 and 4, DI&Cs. These ICs are included as Enclosures 4 (CU9) and 5 (CA5) to the letter dated September 28, 2009 (ML092730445).
- These fully developed EALs shall include the requirement to make an emergency declaration within 15 minutes of the existence of the condition in order to satisfy 10 CFR Part 50 Appendix E, Section IV.C.2.
- These fully developed EALs shall be submitted to the NRC for confirmation at least 180 days before initial fuel load.
- STP Nuclear Operating Company shall validate the existing on-shift staffing submitted in COL application Part 5 "Emergency Plan" Section C using the method of NEI 10-05 Revision 0, "Assessment of On-Shift Emergency Response Organization Staffing and Capabilities," when a physical plant and plant procedures are available. The results of the analysis shall be submitted to the NRC for confirmation at least 180 days before initial fuel loading.

13.3.5 Post Combined License Activities

The following items are identified as the responsibility of the COL license holder:

- The STP Nuclear Operating Company shall submit a fully developed set of EALs to the NRC in accordance with NEI 99–01, Revision 5 endorsed EAL scheme with the exceptions noted below:

  – STP, Units 3 and 4, will exclude NEI 99–01 (Revision 5) Initiating Conditions (ICs) SU3, SA4 and SS6. These ICs are not applicable to the STP based on the ABWR DI&Cs design, and

  – STP will put replacement ICs for SA4 and SS6 in the final Emergency Action Level Bases Document for STP, Units 3 and 4. These replacement ICs will be applicable to the STP, Units 3 and 4, DI&Cs. These replacement ICs are included as Enclosures 2 (SA4) and 3 (SS6) to the letter dated September 28, 2009 (ML092730445).

  – STP will add ICs for Cold Shutdown CU9 and CA5 into the final EAL Bases Document for STP, Units 3 and 4. These ICs are applicable to the STP, Units 3 and 4, DI&Cs. These ICs are included as Enclosures 4 (CU9) and 5 (CA5) to the letter dated September 28, 2009 (ML092730445).

- These fully developed EALs shall include the requirement to make an emergency declaration within 15 minutes of the existence of the condition in order to satisfy 10 CFR Part 50 Appendix E, Section IV.C.2.

- These fully developed EALs shall be submitted to the NRC for confirmation at least 180 days before initial fuel load.

- STP Nuclear Operating Company shall validate the existing on-shift staffing submitted in COLA Part 5 “Emergency Plan” Section C using the method of NEI 10-05 Rev. 0, “Assessment of On-Shift Emergency Response Organization Staffing and Capabilities,” when a physical plant and plant procedures are available. The results of the analysis shall be submitted to the NRC for confirmation at least 180 days before initial fuel loading.

Site-specific ITAAC

The ITAAC that are applicable to the STP EP are included in the following sections of the STP COL application and are addressed in Section 13.3C.19:

  – In COL application Section 4.0 of Part 9, “Emergency Planning ITAAC,” the applicant proposed site-specific EP-ITAAC in Table 4.0-1. Commitments to incorporate specific items in the Emergency Plan implementing procedures made in letter U7-C-NINA-NRC-120055 will be verified complete as part of ITAAC closure for the ITAAC listed in Part 9, Table 4.0-1, Item 10.0.

  – Section 2.17, “Emergency Response Facilities,” in Tier 1 of the COL application incorporates by reference all tables in Section 2.17, Tier 1, of ABWR DCD Revision 4. Table 2.17.1, “Emergency Response Facilities,” contains five EP-ITAAC related to the location and size of the TSC; the location of the OSC, TSC, and OSC voice communications; and plant parameter displays in the TSC.

13.3.6 Conclusion

The staff's finding related to information incorporated by reference is in NUREG–1503. The staff reviewed the application and checked the referenced DCD. The staff's review confirmed that the application has addressed the required information, and no outstanding information is expected to be addressed in the COL FSAR related to this section. Pursuant to 10 CFR 52.63(a)(5) and 10 CFR Part 52, Appendix A, Section VI.B.1, all nuclear safety issues relating to the EP that were incorporated by reference have been resolved.

Pursuant to 10 CFR 52.80(a), the STP COL application includes the proposed inspections, tests, and analyses that the licensee shall perform; and the acceptance criteria that are necessary and sufficient to provide reasonable assurance that if the inspections, tests, and analyses are performed and the acceptance criteria are met, the facility has been constructed and will be operated in conformity with the license, the provisions of the Atomic Energy Act of 1954, as amended, and NRC rules and regulations.

FEMA has reviewed the emergency plans for the State of Texas and the local government plans for Matagorda County and the incorporated cities of Bay City and Palacios, in accordance with 44 CFR Part 350, and provided its Interim Findings Report (IFR) for Reasonable Assurance dated January 27, 2010 (ML100350989). FEMA has determined that the plans are adequate, and there is reasonable assurance that these plans can be implemented with no corrections needed. The staff has reviewed the FEMA report and based its overall reasonable assurance finding on the FEMA findings and determinations regarding offsite EP.

Based upon the IFR and the staff's evaluations detailed in Attachments 13.3A, 13.3B, and 13.3C of this SER, the staff determined that there is reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency. Therefore, the staff determined that the STP, Units 1 and 2, Emergency Plan as modified reflects STP, Units 3 and 4. When fully implemented, the emergency plan will meet the requirements of 10 CFR 50.33(g), 10 CFR 50.34(b)(6)(v), 10 CFR 50.34(f)(2)(xxv), 10 CFR 50.47, applicable portions of Appendix E to 10 CFR Part 50, 10 CFR 52.77, 10 CFR 52.79(a)(21), 10 CFR 52.79(a)(22)(i), 10 CFR 52.80, 10 CFR 52.81, and 10 CFR 52.83.

Furthermore, in accordance with 10 CFR 50.47(a), the staff concludes that subject to the required conditions and limitations of the COL, including the license condition listed in Section 13.3.5 of this SER, there is reasonable assurance that protective measures can and will be taken in the event of a radiological emergency at the STP site, and emergency preparedness at STP, Units 3 and 4, is adequate to support full-power operations.

Attachment 13.3A COL License Information Items, Supplemental Information Items and Departures

This SER section addresses the COL license information items, supplemental information items, and departures associated with EP described in Section 13.3 of the COL FSAR.

13.3A.1 Regulatory Basis

The regulatory basis of the information incorporated by reference is in NUREG–1503. The relevant requirements of the Commission regulations for the COL license information items, the supplemental information, and the associated acceptance criteria are in Section 13.3, "Emergency Planning." of NUREG–0800.

13.3A.2 COL License Information Items

Technical Information in the Application

COL License Information Item

- COL License Information Item 13.2 Emergency Plans

In COL FSAR Subsection 13.3.1.1, the applicant stated:

> A comprehensive site Emergency Plan for STP is provided in COLA Part 5.
>
> Commitment:
>
> Commitments to incorporate specific items in the Emergency Plan implementing procedures made in letter U7-C-NINA-NRC-120055, will be verified complete as part of ITAAC closure for the ITAAC listed in Part 9 Table 4.0-1, Item 10.0.

Technical Evaluation

- COL License Information Item 13.2 Emergency Plans

As specified in COL License Information Item 13.2 and in FSAR Subsection 13.3.1.1, "Emergency Plans," Revision 12, the applicant has submitted a comprehensive site emergency plan and radiological emergency plans for the State and local government authorities with EP responsibilities during emergency situations at the STP, in accordance with applicable NRC regulations.

13.3A.3 Conclusion

The staff compared COL License Information Item 13.2 in the application to the applicable NRC regulations and acceptance criteria in Section 13.3 of NUREG–0800. The staff's review confirmed that the applicant has addressed the relevant information, and no outstanding information is expected to be addressed in the COL FSAR related to this section.

Attachment 13.3B Emergency Planning Information in the Application

This SER section contains the staff's evaluation of the EP information that is required to be in the COL application, but it does not address the applicant's plans for responding to a radiological emergency, which are evaluated in Attachment 13.3C of this SER section.

13.3B.1 Regulatory Basis[1]

The applicable regulatory requirements for EP are as follows:

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[1] The bracketed [ ], alphanumeric designations used throughout this SER section identify the corresponding NUREG–0654/FEMA-REP-1 evaluation criteria used by the staff to determine compliance with 10 CFR 50.47(b).
Braces { } identify requirements in Appendix E to 10 CFR Part 50.
Parentheses ( ) identify other applicable regulatory requirements.

- 10 CFR Part 50, Appendix E, Section I, “Introduction,” describes the EP zone (EPZ).

- 10 CFR Part 50, Appendix E, Section III, “The Final Safety Analysis Report,” requires that the FSAR include plans for coping with emergencies.

- 10 CFR 52.79(a)(21) also requires that the FSAR include an onsite emergency plan that meets the requirements in 10 CFR 50.47 and 10 CFR Part 50, Appendix E.

- 10 CFR 50.33, “Contents of applications; general information,” and 10 CFR 52.77, “Contents of applications; general information,” require, in part, the submittal of State and local emergency plans.

- 10 CFR 50.33(g) requires, in part, a description of the plume exposure pathway and ingestion pathway EPZs. In addition, 10 CFR 50.47(c)(2) states that “the plume exposure pathway EPZ for nuclear power plants shall consist of an area about 16.1 kilometers (km) (10 miles [mi]) in radius and the ingestion pathway EPZ shall consist of an area about 80.5 km (50 mi) in radius. The exact size and configuration of the EPZs surrounding a particular nuclear power reactor shall be determined in relation to local emergency response needs and capabilities as they are affected by such conditions as demography, topography, land characteristics, access routes, and jurisdictional boundaries.” And “The plans for the ingestion pathway shall focus on such actions as are appropriate to protect the food ingestion pathway.”

- 10 CFR 52.79(a)(41) requires that the FSAR evaluation identify and describe all differences from the NUREG–0800 acceptance criteria in Section 13.3 and evaluate how the proposed alternatives to the NUREG–0800 criteria provide an acceptable method of complying with the Commission’s regulations. Where differences exist, the FSAR evaluation should discuss how the proposed alternative provides an acceptable method of complying with the Commission’s regulations or portions thereof that underlie the corresponding NUREG–0800 acceptance criteria.

- 10 CFR 52.73, “Relationship to other subparts,” states that the application for a COL may reference a standard design.

- 10 CFR 52.79(a)(22)(i) requires that certifications from “the State and local government agencies with EP responsibilities must state that: (A) the proposed emergency plans are practicable; (B) these agencies are committed to participating in any further development of the plans, including any required field demonstrations; and (C) these agencies are committed to executing their responsibilities under the plans in the event of an emergency.”

- 10 CFR 52.81, “Standards for review of applications,” states, in part, that COL applications will be reviewed according to the standards in 10 CFR Part 50 and 10 CFR Part 100, “Reactor Site Criteria.” Therefore, the requirements of 10 CFR Part 100, Subpart B, “Evaluation Factors for Stationary Power Reactor Site Applications on or after January 10, 1997,” are applicable. 10 CFR 100.1(c) states, “Siting factors and criteria are important in assuring that radiological doses from normal operation and postulated accidents will be acceptably low, that natural phenomena and potential man-made hazards will be appropriately accounted for in the design of the plant, that site characteristics are such that adequate security measures to protect the plant can be

developed, and that physical characteristics unique to the proposed site that could pose a significant impediment to the development of emergency plans are identified." 10 CFR 100.21(g) requires that "physical characteristics unique to the proposed site that could pose a significant impediment to the development of emergency plans must be identified."

- 10 CFR 30.32(i), 10 CFR 40.31(j), and 10 CFR 70.22(i)(1), contain the requirements regarding the emergency plans that need to be implemented prior to receiving, possessing and using byproduct, source and special nuclear material.

13.3B.2 FSAR and the Onsite Emergency Plan

Technical Information in the Application: {10 CFR Part 50, Appendix E, Section III} (10 CFR 52.79(a)(21)) Section 13.3, "Emergency Planning," of the COL FSAR Revision 12 stated that COL application Part 5, "STP 3 & 4 Emergency Plan," contains a comprehensive onsite emergency plan.

Technical Evaluation: {10 CFR Part 50, Appendix E, Section III} (10 CFR 52.79(a)(21)) The comprehensive onsite emergency plan for STP, Units 3 and 4, is in Part 5 of the COL application. The staff determined that the application adequately addresses the above regulations.

13.3B.3 Submittal of State and Local Emergency Plans

Technical Information in the Application: (10 CFR 52.77) The list of State and local EP documents in Part 5 of the COL application includes:

1. State of Texas Emergency Management Plan:

   Annex D: "Radiological Emergency Management"
   Tab 1: "Fixed Nuclear Facility Accident Response"
   Chapter 2: "South Texas Project Electric Generating Station"

2. Matagorda County Emergency Management Plan - Basic Plan (Matagorda County, Bay City, Palacios)

Technical Evaluation: (10 CFR 52.77) The State of Texas and Matagorda County (which includes the cities of Bay City and Palacios) are the only State and local government entities wholly or partially within the plume exposure and ingestion pathway EPZs. Their emergency plans have been submitted with the application. The results of the FEMA review and the findings and determinations related to the offsite plans for the STP, Units 3 and 4, site are in Section 13.3.6 of this SER.

13.3B.4 Description of the EPZs

Technical Information in the Application: (10 CFR 50.33(g)) FSAR Section 1.1.7, "Description of Location," indicates that the facility (STP, Units 3 and 4,) is co-located with STP, Units 1 and 2, (two existing pressurized water reactors). FSAR Figure 2.1S-1, "Surrounding Area Map," depicts the STP site and the surrounding area within 80.5 km (50 mi). FSAR Figure 2.1S-2, "10-Mile Radius Map," depicts the general location of the STP site and localities surrounding the site within 16.1 km (10 mi). FSAR Figure 2.1S-3, "Site Area Map," depicts the

exclusion area boundary (EAB) and the low-population zone (LPZ) (a 4.8-km [3-mi] radius) with respect to the existing operating STP, Units 1 and 2, and the proposed STP, Units 3 and 4.

Technical Evaluation: (10 CFR 50.33(g)) The proposed STP, Units 3 and 4, will be co-located within the existing EAB of the currently operating STP, Units 1 and 2. Therefore, STP, Units 1, 2, 3, and 4 will all use the existing plume and ingestion exposure pathway EPZs, which consist of an area about 16.1 km (10 mi) in radius and about 80.5 km (50 mi) in radius, respectively. The staff determined that the application adequately addresses the above regulation.

13.3B.5 Certifications from State and Local Governments

Technical Information in the Application: (10 CFR 52.79(a)(22)(i)) Chapter 7, "Letters of Agreement," of the STP, Units 3 and 4, Emergency Plan includes letters signed by the Radiation Program Officer of the Texas DSHS, the Matagorda County Judge, the Mayor of Bay City, and the Mayor of the City of Palacios certifying that (1) the proposed emergency plans are practicable; (2) these agencies are committed to participating in any further development of the plans, including any required field demonstrations; and (3) these agencies are committed to executing their responsibilities under the plans in the event of an emergency.

Technical Evaluation: (10 CFR 52.79(a)(22)(i)) The application contains certifications from the State of Texas and Matagorda County, including the cities of Bay City and Palacios. These entities are the only State and local government agencies with EP responsibilities. The staff determined that the application adequately addresses the above regulation.

13.3B.6 Evaluation Against the SRP

Technical Information in the Application: (10 CFR 52.79(a)(41)) Table 1.8-13, "Summary of Differences from SRP Section 13," of the ABWR DCD Tier 2 stated that there are no differences with the SRP acceptance criteria in design features, analytical techniques, and procedural measures.

Technical Evaluation: (10 CFR 52.79(a)(41)) The staff reviewed the applicant's evaluation of the STP Emergency Plan against the applicable portions of Section 13.3, "Emergency Planning," of NUREG–0800, issued in March 2007, and the generic EP ITAAC listed in Table 14.3.10-1 of NUREG–0800, also issued in March 2007. The staff determined that the application adequately addresses the above regulations.

13.3B.7 Reference to a Standard Design

Technical Information in the Application: (10 CFR 52.73) Section 13.3, "Emergency Planning," of Part 2, "FSAR," of the COL application stated that the information in this section of the referenced ABWR DCD, including all subsections and tables, is incorporated by reference.

Technical Evaluation: (10 CFR 52.73) The COL application incorporates by reference Section 13.3, "Emergency Planning," of the certified ABWR DCD. The staff determined that the FSAR reference to the ABWR DCD is appropriate and adequate.

13.3B.8 Impediments to the Development of Emergency Plans

Technical Information in the Application: (10 CFR 52.81) (10 CFR 100.21(g)) The "South Texas Project Development of the Evacuation Time Estimates" Final Report (ML11252A996),

Revision 3, described the analyses undertaken and the results obtained by a study that updated the existing evacuation time estimates (ETE) for STP.

Technical Evaluation: (10 CFR 52.81) (10 CFR 100.21(g)) Because the ETE analysis did not identify any physical characteristics unique to the proposed site that could pose a significant impediment to further development of the STP, Units 3 and 4, Emergency Plan, and the fact that an emergency plan already exists for the site, staff determined that the application has adequately addressed the above regulations. See Section 13.3C.18 of this SER, for the staff's evaluation of the ETE analysis.

13.3B.9 Emergency Planning for Byproduct, Source, and Special Nuclear Material Licenses

The staff's evaluation of the application for EP with respect to 10 CFR Parts 30, 40, and 70 licenses is in FSER Section 1.5S.5, "Receipt, Possession, and Use of Source, Byproduct, and Special Nuclear Material under 10 CFR Parts 30, 40 and 70."

13.3B.10 Post Combined License Activities Related to Emergency Planning Information in the Application

There are no post COL license activities related to "Emergency Planning Information in the Application" in the COL application.

13.3B.11 Conclusion

The staff reviewed the Emergency Plan information required to be in the STP COL application but not required to be part of the STP Emergency Plan in Part 5 of the COL application. The staff's review concluded that the applicant has provided adequate information in the COL application to meet the applicable requirements in 10 CFR 30.32(i), 10 CFR 40.31(j), 10 CFR 70.22(i)(1), 10 CFR 50.33(g), 10 CFR 50.47(c)(2), 10 CFR 52.73, 10 CFR 52.77, 10 CFR 52.79, 10 CFR 52.81, 10 CFR 100.1(c), 10 CFR 100.21(g), and applicable portions of Appendix E to 10 CFR Part 50 as discussed above.

Attachment 13.3C Onsite Emergency Plan

The NRC evaluates emergency plans for nuclear power reactors to determine whether the plans are adequate and there is reasonable assurance that the plans can be implemented. This attachment to the SER provides the results of the staff's review of the onsite emergency plan, which the applicant characterizes as a modification of the STP, Units 1 and 2, Emergency Plan to reflect STP, Units 3 and 4.

In accordance with the guidance in Section 13.3, of NUREG–0800, the applicant has revised the existing STP, Units 1 and 2, Emergency Plan by extending its applicability to the new STP, Units 3 and 4. The new site emergency plan is the STP, Units 3 and 4, Emergency Plan. Therefore, the staff's review focused on the changes identified in the STP, Units 3 and 4, Emergency Plan, and applied the following guidance from NUREG–0800:

> In general, if an application is for an additional reactor at an operating reactor site, and the application proposes to incorporate and extend elements of the existing emergency planning program to the new reactor (included by reference), those existing elements should be considered acceptable and adequate. The

reviewer should generally focus the review on the extension of the existing program to the new reactor, and should determine whether the incorporated emergency planning program information from the existing reactor site (1) is applicable to the proposed reactor, (2) is up-to-date when the application is submitted, and (3) reflects use of the site for the construction of a new reactor (or reactors) and appropriately incorporates the new reactor(s) into the existing plan.

The existing site emergency plan for STP, Units 1 and 2, which was changed to include STP, Units 3 and 4, is considered acceptable and adequate, because the NRC performs oversight of emergency preparedness by monitoring performance indicators and through inspection. In addition, the NRC inspectors perform routine inspections, observe drills and exercises, and review licensee corrective actions and emergency plan changes in accordance with the established inspection program for operating reactors. Also, licensees are required to conduct an exercise involving Federal, State, and local agencies every two years. The NRC and FEMA evaluate these exercises.

The staff issued RAI 13.03-23, requesting the applicant to confirm that a 10 CFR 50.54(q) review was performed for the proposed extension of the existing site's emergency plan to ensure that the addition of new units will not decrease the effectiveness of the existing plans. The staff also requested the applicant to confirm that the plans, as changed, will continue to meet the standards of 10 CFR 50.47(b) and the requirements of Appendix E to 10 CFR Part 50. In its response to RAI 13.03-23, dated August 27, 2008 (ML082490086), the applicant agreed to perform the review and to provide the 10 CFR 50.54(q) evaluation checklist. The staff reviewed the checklist and determined the applicant's response to be acceptable. Therefore, the staff considers RAI 13.03-23 to be resolved and closed.

Part 2 of the COL application, "FSAR," Tier 2, Chapter 13.0, "Conduct of Operations," Subsection 13.3.1.1, "Emergency Plans," stated that a comprehensive site emergency plan for STP, Units 3 and 4, is provided as Part 5, "Emergency Plan," of the COL application. Part 5 contains the STP, Units 3 and 4, Emergency Plan, the threshold value technical basis for EALs, the evacuation time estimate (ETE analysis, letters of agreement (LOAs), and State and county EAL reviews.

Chapter 4, "Emergency Planning ITAAC," of COL application Part 9 contains the EP inspections, tests, analyses, and the emergency planning ITAAC to address those aspects of the STP, Units 3 and 4, Emergency Plan that cannot be completed in the COL application phase.

The following subsections of this SER describe the staff's review of the STP, Units 3 and 4, Emergency Plan, which parallels the planning standards and evaluation criteria[1] in NUREG-0654/FEMA-REP-1, Revision 1, which was issued in November 1980, and in the March 2002, addenda.

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[1] The bracketed [ ] alphanumeric designations used throughout this SER section identify the Evaluation Criteria for each Planning Standard in NUREG–0654/FEMA-REP-1 that were used by the staff to determine compliance with 10 CFR 50.47(b).
Braces { } identify requirements in Appendix E to 10 CFR Part 50.
Parentheses ( ) identify other applicable regulatory requirements.

The staff evaluated the proposed changes in the STP, Units 3 and 4, Emergency Plan against the detailed evaluation criteria[1] in NUREG–0654/FEMA-REP-1 to determine whether the proposed changes meet the applicable regulatory requirements in 10 CFR 50.47(b) and 10 CFR Part 50, Appendix E.

13.3C.1 Assignment of Responsibility (Organizational Control)

13.3C.1.1 Regulatory Basis

In determining whether the proposed changes identified in the STP, Units 3 and 4, Emergency Plan met the applicable regulatory requirements in 10 CFR 50.47(b)(1), the staff evaluated the changes against the detailed evaluation criteria[1] in NUREG–0654/FEMA-REP-1. The staff also evaluated the proposed emergency plan against applicable regulatory requirements related to the area of "Assignment of Responsibility (Organizational Control)" in Appendix E to 10 CFR Part 50.

13.3C.1.2 Overall Response Organization

Technical Information in the Emergency Plan: [A.1.a] {Appendix E, Section IV.A.8}
Section B, "Assignment of Responsibility," in Part 5 of the STP, Units 3 and 4, application, "Emergency Plan," described the activation and responsibilities of the station emergency response organization and the various State, local, Federal, and private-sector organizations that will contribute to the emergency response effort.

In RAI 13.03-25, the staff requested the applicant to verify and correct, if necessary, certain statements regarding cooperation with the Matagorda County Sheriff's Office, the United States Coast Guard, and other Federal agencies. In its response to RAI 13.03-25, dated August 27, 2008 (ML082490086), the applicant stated that the following changes will be made in the next revision of the STP, Units 3 and 4, Emergency Plan:

(1) The last line of Section B.4.7, "Matagorda County Sheriff's Office," will be revised to be consistent with the LOA.

(2) Section B.4.8, "United States Coast Guard (Corpus Christi)," will be revised to be consistent with the LOA.

(3) Section B.4.9, "United States Coast Guard (Galveston)," will be revised to be consistent with the LOA.

(4) Section B.4.10, "Resources of Other Federal Agencies," will be revised to reference the "National Response Framework (NRF)" instead of the "Federal National Response Plan."

In RAI 13.03-27, the staff requested the applicant where the LOA with OXEA Chemicals are located in the Emergency Plan. In its response to RAI 13.03-27, dated August 27, 2008, the applicant included a copy of the LOA with OXEA Chemicals.

In RAI 13.03-29, the staff requested the applicant to clarify the title of the individual responsible for notifying the State of an emergency. In its response to RAI 13.03-29, dated August 27, 2008, the applicant stated that Section B.6.2, "State of Texas and Matagorda County," of the

STP, Units 3 and 4, Emergency Plan will be revised by replacing "Station's Emergency Director" in the second bullet of that section to read, "Station's Unit-specific Emergency Director."

In RAI 13.03-33, the staff requested the applicant to discuss the replacement of the "Federal Emergency Response Team" with the "National Response Plan" in Figure B-1, "Interrelationship of Emergency Response Organization." In its response to RAI 13.03-33, dated August 27, 2008, the applicant stated that the original text, "Federal Emergency Response Team," will be restored in the text box and the "National Response Plan" text will be removed.

In RAI 13.03-34, the staff requested the applicant to clarify the title of the person in charge at the DSHS in Table B-1, "Responsible Primary Organizations." In its response to RAI 13.03-34, dated August 27, 2008, the applicant stated that Table B-1 will be revised to reflect the new title of "Radiation Program Officer" as the person in charge at the DSHS, and the "Bureau Chief" text will be deleted.

In addition, EP-ITAAC-1.1 in Table 4.0-1, "Emergency Planning - Inspection, Test, Analysis, and Acceptance Criteria (EP-ITAAC)," in Part 9 of the STP COL application stated, "The staff exists to provide 24-hour per day emergency response and manning of communications links, including continuous operations for a protracted period."

Technical Evaluation: [A.1.a] {Appendix E, Section IV.A.8} The staff determined that the applicant's responses to RAIs 13.03-25, 13.03-27, 13.03-29, 13.03-33, and 13.03-34 are acceptable. The staff also verified that the changes proposed by the applicant's responses to RAIs 13.03-25, 13.03-27, 13.03-29, 13.03-33, and 13.03-34, are in Revision 3 of the STP, Units 3 and 4, Emergency Plan. Therefore, the staff considers RAIs 13.03-25, 13.03-27, 13.03-29, 13.03-33 and 13.03-34 to be resolved and closed.

The staff reviewed the above changes to Section B of the STP, Units 1 and 2, Emergency Plan, which was modified to reflect the inclusion of STP, Units 3 and 4, and concluded that the proposed changes are: (1) applicable to the proposed reactors, (2) up-to-date when the application was submitted, and (3) reflect use of the site for the construction of new reactors and appropriately incorporate the new reactors into the existing emergency plan. The staff's evaluation of proposed EP-ITAAC 1.1 is in Section 13.3C.19 of this SER.

13.3C.1.3 Conclusion

The staff reviewed the proposed changes to the STP, Units 3 and 4, Emergency Plan against the guidance in Planning Standard A, "Assignment of Responsibility (Organizational Control)," of NUREG–0654/FEMA-REP-1. On the basis of the review of the onsite emergency plan as described above for assignment of responsibility (organizational control), the staff concluded that the proposed changes to the STP, Units 3 and 4, Emergency Plan are acceptable and meet the requirements of 10 CFR 50.47(b)(1) and Section IV.A.8 of Appendix E to 10 CFR Part 50.

13.3C.2 Onsite Emergency Organization

13.3C.2.1 Regulatory Basis

In determining whether the proposed changes to the emergency plan met the applicable regulatory requirements in 10 CFR 50.47(b)(2) for onsite emergency organization, the staff evaluated the changes against the detailed evaluation criteria[1] in NUREG–0654/FEMA-REP-1 and NSIR/DPR-ISG-01.

13.3C.2.2 Emergency Organization

Technical Information in the Emergency Plan: [B.1] {Appendix E, Section IV.A.1} {Appendix E, Section IV.A.2.b} The STP, Units 3 and 4, Emergency Plan, contains Section C, "Organizational Control of Emergencies," which described the organizations required during a declared emergency as well as those required for daily operations. The applicant has proposed the following changes in the STP, Units 3 and 4, Emergency Plan:

- Section C.1, "Normal Station Operating Organization," was revised to describe a change in the daily station operating organization. Specifically, the General Managers will now report to the Group Vice Presidents for STP, Units 1 and 2, and for STP, Units 3 and 4, respectively.

- Section C.3.5, "Shift Technical Advisor," was revised to reflect the addition and availability of a Shift Technical Advisor for the new reactor type.

- Section C.3.5 was also revised to reflect the assignment of one Shift Technical Advisor per reactor type who will be available in the control room when any of the four units is above cold shutdown.

- In Section C.3.5, the text related to the emergency notification system (ENS) Communicator was moved from this section, and added to Section C.3.6, "ENS Communicator."

Technical Evaluation: [B.1] {Appendix E, Section IV.A.1} {Appendix E, Section IV.A.2.b} The applicant incorporated into the STP, Units 3 and 4, Emergency Plan, the above four changes related to the normal onsite organization with respect to their emergency assignments. The staff reviewed the changes to Section C of the STP, Units 3 and 4, Emergency Plan and concluded that the proposed changes are: (1) applicable to the proposed reactors, (2) up-to-date, and (3) reflect the use of the existing site for the construction of two additional reactor units and appropriately incorporate the new reactors into the existing plan.

13.3C.2.3 On-shift and Augmentation Emergency Response Staff

Technical Information in the Emergency Plan: [B.5] {Appendix E, Section IV.A.9} The applicant proposed a number of changes to Table C-1, "Minimum Staffing Requirements (STPEGS) (Including Capability for Additional Staffing)." These changes also include proposed staffing for STP, Units 3 and 4.

In RAI 13.03-38(1), the staff requested the applicant to discuss the time specified in the emergency plan for augmenting the on-shift staffing in the event of an emergency. In its response to RAI 13.03-38(1), dated August 27, 2008 (ML082490086), the applicant stated that the 75-minute response column will be restored, and Table C-1 will again have 60- and 75-minute response columns. In addition, because the "#" sign at the bottom of Table C-1 does not apply to any case in that table, the applicant stated that the symbol will be removed. The applicant also stated that the Shift Technical Advisor assigned to the on-shift response organization is trained in basic core damage analysis, has no other Emergency Response Organization (ERO) responsibilities, and can provide core and thermal hydraulic performance assistance during the early stages of an emergency.

In RAI 13.03-31, the staff requested the applicant to clarify the responsibilities of plant operators during an emergency. In its response to RAI 13.03-31, dated August 27, 2008, the applicant proposed changes to Section C.3.7, "Plant Operators," that clarify the plant operator responsibilities.

In RAI 13.03-36, the staff requested the applicant to identify when the OSC Coordinator reports to the OSC, because of an apparent inconsistency in the narratives for other facilities listed under Section C.4, "Emergency Response Organization." In its response to RAI 13.03-36, dated August 27, 2008, the applicant stated that Section C.4.8, "Operations Support Center Coordinator," will be revised to state that the Operations Support Center Coordinator reports to the OSC at an Alert or higher emergency classification.

The applicant's proposed EP-ITAAC 2.1 in Table 4.0-1 of Part 9 of the COL application stated, "The staff exists to provide minimum and augmented on-shift staffing levels, consistent with Table B-1 of NUREG–0654/FEMA-REP-1, Revision 1."

In addition, the applicant proposed the following license condition in its response to the implementation of the Emergency Preparedness Rule changes, dated July 31, 2012 (ML12219A325-):

> STP Nuclear Operating Company shall validate the existing on-shift staffing submitted in COLA Part 5 'Emergency Plan' Section C, using the method of NEI 10-05 Rev. 0, "Assessment of On-Shift Emergency Response Organization Staffing and Capabilities," when a physical plant and plant procedures are available. The results of the analysis shall be submitted to the NRC for confirmation at least 180 days before initial fuel loading.

Technical Evaluation: [B.5] {Appendix E, Section IV.A.9} The staff verified that the changes proposed by the applicant's responses to RAIs 13.03-31, 13.03-36, and 13.03-38(1), are in Revision 3 of the STP, Units 3 and 4, Emergency Plan. Therefore, the staff considers RAIs 13.03-31, 13.03-36 and 13.03-38(1) to be resolved and closed.

The staff also reviewed the above changes to Section C of the STP, Units 3 and 4, Emergency Plan and concluded that the content of the information in the proposed change: (1) is applicable to the proposed reactors, (2) is up-to-date, and (3) reflects the use of the existing site for the construction of two additional reactor units and appropriately incorporates the new reactors into the existing plan. The staff's evaluation of the proposed EP-ITAAC 2.1 is in Section 13.3C.19, "Emergency Planning ITAAC," of this SER. The staff reviewed the proposed License Condition for a shift staffing analysis as reflected in Sections 13.3.4 and determined it conformed with approved guidance and therefore satisfies the requirement of 10 CFR 50, Appendix E, Section IV.A.9.

13.3C.2.4 Conclusion

On the basis of its review of the proposed changes to the STP, Units 3 and 4, Emergency Plan (as described above) regarding the onsite emergency organization, staff concluded that the changes are acceptable because they meet the applicable requirements in 10 CFR 50.47(b)(2) and the applicable portions of Sections IV.A.1, A.9, and 2.b of Appendix E to 10 CFR Part 50.

13.3C.3 Emergency Response Support and Resources

13.3C.3.1 Regulatory Basis

In determining whether the proposed changes to the emergency plan met the applicable regulatory requirements in 10 CFR 50.47(b)(3), the staff evaluated the plan against the detailed evaluation criteria[1] in NUREG–0654/FEMA-REP-1 and NSIR/DPR-ISG-01. The staff also evaluated the proposed changes to the emergency plan against applicable requirements related to the area of emergency support and resources in Appendix E to 10 CFR Part 50.

13.3C.3.2 Other Sources of Assistance

Technical Information in the Emergency Plan: [C.4]{Appendix E, Section III} The STP, Units 3 and 4, Emergency Plan in Part 5 of the application, contains Section 5.1-B, "Assignment of Responsibility," which addresses the activation of the station emergency response organization; and various State, local, Federal, and private sector organizations to support the response effort. The applicant proposed the following changes in Revision 2 of the COL application:

1. Information will be added to Subsection B.5.2, "ABWR Nuclear Steam Supply Services," to state that services provided by an ABWR Nuclear Steam Supply System (NSSS) vendor during an emergency event at STP will be obtained on a 24-hour basis under a contract between the Station and the vendor. (COM EP-1).

2. Subsection B.5.17, "Matagorda County Environmental Health," will be changed to more completely describe the support that will be provided in the event of an emergency.

In RAI 13.03-77, the staff requested additional information concerning the identification and a description of the assistance expected from State, local, and Federal agencies with responsibilities for coping with emergencies, including hostile action at the site. In its response to RAI 13.03-77, dated February 13, 2013 (ML13050A056), the applicant included a description of various places in Section B of the Emergency Plan where key offsite response organizations and its associated response plans are identified. The details for each responding agency are contained within the respective plans. The applicant also stated that additional details of offsite response organization integration into onsite activities will be included in emergency plan implementing procedures (EPIPs). The development of EPIP is addressed in EP-ITAAC Item 10. The staff's technical evaluation of EP-ITAAC is in Section 13.3C.19, "Emergency Planning ITAAC" of this SER.

Technical Evaluation: [C.4]{Appendix E, Section III} The staff reviewed the information and issued RAI 13.03-26, requesting the applicant to provide additional information regarding the need for an LOA with the NSSS vendor. In its response to RAI 13.03-26, dated August 27, 2008 (ML082490086), the applicant stated that proposed Subsection B.5.2 of the STP, Units 3 and 4, Emergency Plan will be revised to be consistent with the role of Toshiba Corporation as the NSSS for STP, Units 3 and 4. The applicant added that Toshiba will provide a capability to respond on a 24-hour basis, which therefore will meet Commitment COM EP-1. The applicant will also revise STP, Units 3 and 4, Emergency Plan Figure F-2, "Emergency Response Facilities Communications Pathway Typical Functional Diagram Alert, Site Area, and General Emergencies."

The staff determined that the applicant's response to RAI 13.03-26 was acceptable and the staff verified that the changes to Sections B.5.2, B.5.17, and Figure F-2 are in Revision 3 of the STP, Units 3 and 4, Emergency Plan. The staff determined the applicant's response to RAI 13.03-77 acceptable and determined the appropriate information was provided in the Emergency Plan. Therefore, the staff concluded that the proposed changes are: (1) applicable to the proposed reactors, (2) up-to-date, and (3) reflect the use of the existing site for the construction of two additional reactor units and appropriately incorporate the new reactors into the existing plan. Therefore, RAI 13.03-26 and RAI 13.03-77 are resolved and closed and Commitment COM EP-1 is closed.

13.3C.3.3 Conclusion

On the basis of its review of the proposed changes to the STP, Units 3 and 4, Emergency Plan as described above for emergency response support and resources, the staff concluded that the changes to the STP, Units 3 and 4, Emergency Plan are acceptable and meet the applicable requirements of Appendix E to 10 CFR Part 50, and the planning standards of 10 CFR 50.47(b)(3), because the changes comply with the applicable guidance in Planning Standard C of NUREG–0654/FEMA-REP-1 and NSIR/DPR-ISG-01, as described above.

13.3C.4 Emergency Classification System

13.3C.4.1 Regulatory Basis

In determining whether the proposed changes to the emergency plan meet the applicable regulatory requirements in 10 CFR 50.47(b)(4), the staff evaluated the plan against the detailed evaluation criteria[1] in NUREG–0654/FEMA-REP-1. The staff also evaluated the proposed changes to the emergency plan against the applicable requirements related to the emergency classification in Appendix E to 10 CFR Part 50.

13.3C.4.2 Emergency Classification System

Technical Information in the Emergency Plan: [D.1 and D.2]{Appendix E, Section IV.B}
Section 5.1-D, "Emergency Classification System," of the STP, Units 3 and 4, Emergency Plan , stated that this section of the plan described the emergency classification system used to categorize an event into one of four classification levels. The spectrum of possible emergency events is categorized in the following four emergency classifications based on the recommendations of NEI 99–01, Revision 5, "Unusual Event, Alert, Site Area Emergency, and General Emergency," (ML080450149). In Table D-1, "Initiating Conditions for Emergency Classification," the applicant provided initiating conditions for entry into the four emergency classifications.

In RAI 13.03-72, the staff stated that the STP COL did not fully address certain aspects of the required EAL scheme. This is because various equipment setpoints and other information cannot be determined until the as-built information is available (e.g., head corrections, radiation shine, final technical specifications, and equipment calculations and tolerances). Consequently, the staff requested the applicant to either develop the remainder of its EAL scheme, including EALs related to digital instrumentation and control (DI&C), or propose a license condition that the applicant will create a fully developed set of EALs in accordance with the specified guidance document. These fully developed EALs must be submitted to the NRC for confirmation at least 180 days prior to fuel load. In addition, the staff stated that the EALs must be kept in a

document controlled by 10 CFR 50.54(q), such as the emergency plan; or a lower tier document, such as the Emergency Plan Implementing Procedures.

In its revised response to RAI 13.03-72, dated September 28, 2009 (ML092730445), the applicant proposed a License Condition which was further revised by the applicant's response to RAI 13.03-76, dated February 13, 2013 (ML13050A056), to include the following elements:

- STP Nuclear Operating Company shall submit a fully developed set of EALs to the NRC in accordance with NEI 99–01, Revision 5 endorsed EAL scheme with the following exceptions:

  – STP, Units 3 and 4, will exclude NEI 99–01, Revision 5, ICs SU3, SA4, and SS6. These ICs are not applicable to the STP based on the ABWR DI&Cs design.

  – STP will replace ICs for SA4 and SS6 in the final Emergency Action Level Bases Document for STP, Units 3 and 4. These ICs will be applicable to STP, Units 3 and 4, DI&Cs.

  – STP, Units 3 and 4, will include the addition of ICs for Cold Shutdown CU9 and CA5 into the final Emergency Action Level Bases Document for STP, Units 3 and 4. These ICs are applicable to STP, Units 3 and 4, DI&Cs.

- These fully developed EALs shall include the requirement to make an emergency declaration within 15 minutes of the existence of the condition in order to satisfy 10 CFR Part 50 Appendix E, Section IV.C.2.

- These fully developed EALs shall be submitted to the NRC for confirmation at least 180 days before initial fuel loading.

The response to RAI 13.03-72, also included four enclosures. Enclosures 2 and 3 provided replacement ICs for SA4 and SS6, and Enclosures 4 and 5 provided new ICs for CU9 and CA5.

Also in its response to RAI 13.03-72, the applicant proposed a revision to Section 5.1-D, Subsection D.1, "Event Classification," in Part 5 of the STP, Units 3 and 4, application stating that the emergency response procedure related to emergency classification will be controlled in accordance with the requirements of 10 CFR 50.54(q). In addition, the applicant proposes a change to Section 5.3, "Emergency Action Levels," in the STP, Units 3 and 4, Emergency Plan to address the need to provide fully developed EALs to the NRC at least 180 days before initial fuel loading.

In its response to RAI 13.03-72, the applicant also proposed EP ITAAC Acceptance Criterion 3.1**,** which relates to the emergency classification scheme and stated:

> The specified parameters are retrievable in the Control Room, TSC, and EOF, and the ranges of the displays encompass the values specified in the emergency classification and EAL scheme.
>
> The acceptance testing criteria will be in accordance with Table 2.7.1a, Item B, Tier 1, Design Certification for the ABWR. Additional data required to support the EAL scheme will be retrievable in the Control Room, TSC, and EOF.

[D.2] The staff issued RAI 13.03-46, requesting the applicant to clarify the assumption that most of the "Unusual Events" listed will be quickly terminated. In its response to RAI 13.03-46, dated August 27, 2008 (ML082490086), the applicant stated that the STP will revise Section D.1 of the STP, Units 3 and 4, Emergency Plan by deleting the following sentence:

> It should be noted that most of the listed initiating conditions for the Unusual Event classification are events that can be expected to be terminated quickly, and therefore, the notification process may occur after the event has been corrected.

{Appendix E, Section IV.B} Letters that provide documentation of the EAL review by State and local governments are included in Section 5.8, "State and County EAL Review," of the STP, Units 3 and 4, Emergency Plan. These letters state that the signature on the letter indicates that the parties have discussed and agreed with the proposed EALs.

Technical Evaluation: [D.1 and D.2] {Appendix E, Section IV.B} The staff determined that the exclusion of ICs SU3, SA4, and SS6, specified in NEI 99–01, Revision 5, is acceptable because these ICs will not be applicable to the STP based on the ABWR DI&Cs design. In addition, the staff determined the replacement ICs for SA4 and SS6, which are applicable to the power operation, startup, and hot standby/shutdown modes, are acceptable because they address control and indication systems unique to the plant design. The addition of ICs CU9 and CA5 are also acceptable because they address control and indication systems unique to the plant design when the reactors are in the cold shutdown mode. The staff revised the proposed License Condition to clarify needed actions as reflected in Sections 13.3.4 and 13.3.5.

The staff also reviewed the applicant's response to RAI 13.03-72. The staff determined that the revision to Section D.1, "Event Classifications," is acceptable, and verified that the change is in Revision 3 of the STP, Units 3 and 4, Emergency Plan. In addition, the staff determined that the applicant's proposal to revise Section 5.3, "Emergency Action Level," is acceptable and confirmed that this revision is also in Revision 3 of the STP, Units 3 and 4, Emergency Plan. Therefore, the staff considers RAI 13.03-72 to be resolved and closed.

In its response to RAI 13.03-76, dated February 13, 2013 (ML13050A056), the applicant proposed a change to Section D.1 to address the 15 minute notification criteria established by 10 CFR 50, Appendix E, Section IV.C.2. The applicant provided proposed text to insert in Section D.1. The staff noted the changes made in STP COL application Revision 9 and determined them to be acceptable. Therefore, the staff considers RAI 13.03-76 to be resolved and closed. Furthermore, the staff concluded that the proposed changes: (1) are applicable to the proposed reactors, (2) are up-to-date, and (3) reflect the use of the existing site for the construction of two additional reactor units and appropriately incorporate the new reactors into the existing plan.

The staff's technical evaluation of EP-ITAAC is in Section 13.3C.19 of this SER.

[D.2] The staff determined that the response to RAI 13.03-46 is acceptable, and verified the deletion of the sentence from Section D.1 in Revision 3 of the STP, Units 3 and 4, Emergency Plan. Therefore, the staff concluded that the proposed change: (1) is applicable to the proposed reactors, (2) is up-to-date, and (3) reflects the use of the existing site for the construction of two additional reactor units and appropriately incorporates the new reactors into the existing plan. Therefore, the staff considers RAI 13.03-46 to be resolved and closed.

{Appendix E, Section IV.B} The staff determined that the letters in Section 5.8 of the STP, Units 3 and 4, Emergency Plan documenting the STP, Units 3 and 4, EAL review by State and local government authorities are acceptable because they meet the requirements of 10 CFR Part 50, Appendix E, Section IV.B. Therefore, the staff concluded that the documentation: (1) is applicable to the proposed reactors, (2) is up-to-date, and (3) reflects the use of the existing site for the construction of two additional reactor units and appropriately incorporates the new reactors into the existing plan.

13.3C.4.3 Conclusion

After reviewing the changes to the STP, Units 3 and 4, Emergency Plan described above for the emergency classification system, the staff concludes that the information, including the proposed License Condition, meets the applicable portions of Appendix E to 10 CFR Part 50 and planning standard 10 CFR 50.47(b)(4), because the information complies with the guidance in Planning Standard D, "Emergency Classification," of NUREG–0654/FEMA-REP-1.

13.3C.5 Notification Methods and Procedures

13.3C.5.1 Regulatory Basis

As discussed in Section 13.3 of NUREG–0800, if an applicant proposes to extend an existing site emergency plan to the new reactor, the existing emergency plan should be considered acceptable and adequate, and staff should focus the review on changes related to the new reactor.

13.3C.5.2 Notification Methods and Procedures

Technical Information in the Emergency Plan: (Section 13.3 of NUREG–0800) Section E, "Notification Methods and Procedures," of the STP, Units 3 and 4, Emergency Plan described the established methods and procedures to be used by the Station to notify Federal, State, and county response organizations and to activate the Station Emergency Response Organization.

However, the applicant proposed EP ITAAC 4.1 and 4.2 in Table 4.0-1, Part 9, of the COL application to confirm that the means exist to notify responsible State and local agencies and emergency response personnel.

Technical Evaluation: (Section 13.3 of NUREG–0800) The applicant does not propose any changes in Section E of the STP, Units 3 and 4, Emergency Plan.

See Section 13.3C.19 of this SER for the staff's evaluation of EP-ITAAC Acceptance Criteria 4.1 and 4.2 in Table 4.0-1.

13.3C.5.3 Conclusion

Because the notification methods and procedures will be the same for STP, Units 3 and 4, as those for STP, Units 1 and 2, the applicant is not proposing any changes to the STP, Units 3 and 4, Emergency Plan. Therefore, the staff determined that this section of the STP, Units 3 and 4, Emergency Plan is acceptable because the existing emergency site plan is considered acceptable and adequate.

13.3C.6 Emergency Communications

13.3C.6.1 Regulatory Basis

Section 13.3 of NUREG–0800 includes guidance concerning the review and evaluation of EP information submitted in a COL application, and the determination of compliance with the applicable regulations. Related acceptance criteria are identified in Section 13.3.II of NUREG-0800.

13.3C.6.2 Emergency Response Facilities Communication

Technical Information in the Emergency Plan: (Section 13.3 of NUREG–0800) Addendum E-1, "Emergency Response Facilities Communications," of the STP, Units 3 and 4, Emergency Plan described the communications systems designed to allow contact among plant personnel and plant-to-offsite communications during normal and emergency conditions.

However, the applicant proposed the following two EP-ITAAC in Part 9 of the COL application, related to emergency communications:

- EP-ITAAC 5.1 confirms that the means exists for communications among the control room, the TSC, the EOF, principal State and local emergency operation centers, and radiological field teams.

- EP-ITAAC 5.2 confirms that the means exists for communications from the control room, TSC, and EOF to the NRC headquarters and regional office emergency operations centers (EOCs) (including the establishment of the Emergency Response Data System [or its successor system] between the onsite computer system and the NRC Operations Center).

Technical Evaluation: (Section 13.3 of NUREG–0800) The applicant does not propose any changes to Addendum E-1, "Emergency Response Facilities Communications," of the STP, Units 3 and 4, Emergency Plan.

See Section 13.3C.19 of this SER for the staff's evaluation of EP-ITAAC 5.1 and 5.2.

13.3C.6.3 Conclusion

Because emergency communications for STP, Units 3 and 4, will be the same as those for STP, Units 1 and 2, the applicant does not propose any changes for the STP, Units 3 and 4, Emergency Plan. Therefore, the staff determined that this section of the STP, Units 3 and 4, Emergency Plan is acceptable because the existing emergency site plan is considered acceptable and adequate.

13.3C.7 Public Education and Information

13.3C.7.1 Regulatory Basis

Section 13.3 of NUREG–0800 includes guidance concerning the review and evaluation of EP information submitted in a COL application and the determination of compliance with the applicable regulations. Related acceptance criteria are identified in Section 13.3.II, "Acceptance Criteria," of NUREG–0800.

13.3C.7.2 Media Relations

Technical Information in the Emergency Plan: (Section 13.3 of NUREG–0800) Section K, "Media Relations," of the STP, Units 3 and 4, Emergency Plan described the media relations to be developed and used for educating, notifying, and alerting the public for the purpose of emergency preparedness at the Station.

Technical Evaluation: (Section 13.3 of NUREG–0800) The applicant does not propose any changes to Section K of the STP, Units 3 and 4, Emergency Plan.

13.3C.7.3 Conclusion

Because public education and information will be the same for all four STP units, the applicant has not proposed any changes for the STP, Units 3 and 4, Emergency Plan. Therefore, the staff determined that this section of the STP, Units 3 and 4, Emergency Plan is acceptable, because the existing site emergency plan is considered acceptable and adequate.

13.3C.8 Emergency Facilities and Equipment

13.3C.8.1 Regulatory Basis

In determining whether the proposed changes identified in the STP, Units 3 and 4, Emergency Plan meet the applicable regulatory requirements in 10 CFR 50.47(b)(8) for emergency facilities and equipment, the staff evaluated the proposed changes against applicable detailed evaluation criteria[1] in NUREG–0654/FEMA-REP-1 and NSIR/DPR-ISG-01. The staff also evaluated the proposed changes against the applicable requirements related to emergency facilities and equipment in 10 CFR Part 50, Appendix E and 10 CFR 50.34(f)(2)(xxv). In addition, the staff evaluated the proposed changes against guidance in Supplement 1 to NUREG–0737, "Clarification of TMI Action Plan Requirements."

13.3C.8.2 TSC and OSC Locations

Technical Information in the Emergency Plan: [H.1] {Appendix E, Section IV.E.8}(Section 8.2.1.b of NUREG–0737, Supplement 1) (8.3.1.b of NUREG–0737, Supplement 1) (50.34(f)(2)(xxv)) The STP, Units 3 and 4, Emergency Plan contains Section G, "Emergency Response Facilities," which described the locations of the TSC and OSC. The TSCs for STP, Units 3 and 4, are located in the service building of the respective units and are within a two-minute walk from the units' control room. The OSCs for STP, Units 3 and 4, are located in the lunch room area in the service building of the respective units.

The applicant incorporated the following changes related to the locations of the TSC and OSC into the STP, Units 3 and 4, Emergency Plan:

- Changes in Section G.3, "Technical Support Center," identify the location of the TSCs for each unit and their typical layout.

- Changes in Figure G-8, "Control Room Technical Support Center, and Operations Support Center Locations Units 3 and 4," identify the locations of the control room, the TSC, and the OSC for STP, Units 3 and 4.

In addition, the applicant has proposed EP-ITAAC 6.1 and 6.2 in Table 4.0-1, Part 9, to confirm that the licensee has established a TSC and an OSC.

Technical Evaluation: (Sections 8.2.1.b and 8.3.1.b of NUREG–0737, Supplement 1) (50.34(f)(2)(xxv)) After reviewing the proposed changes to Section G.3 and Figure G-8 of the STP, Units 3 and 4, Emergency Plan, the staff concluded that the content of the information in the proposed changes: (1) are applicable to the proposed reactors, (2) are up to date, and (3) reflect the use of the existing site for the construction of two additional reactor units and appropriately incorporates the new reactors into the existing plan.

The staff's evaluation of EP-ITAAC 6.1 and 6.2 in Table 4.0-1 is in Section 13.3C.19 of this SER.

13.3C.8.3 TSC Habitability

Technical Information in the Emergency Plan: (Section 8.2.1.f of NUREG–0737, Supplement 1) Because an assessment of the radiological consequences to the personnel in the TSC from the postulated fission product releases, as a result of the design-basis accidents, was not included in the ABWR DCD, the staff issued RAI 13.03-73, requesting the applicant to provide additional information related to the habitability of the TSC. In its revised response to RAI 13.03-73, dated June 1, 2010 (ML101550064), the applicant provided the radiological consequence analysis for TSC habitability under postulated design-basis accidents. In its response to RAI 13.03-73, the applicant also proposed changes to Subsection 9.4.8.1.2, "Power Generation Design Bases," and Subsection 9.4.8.2, "System Description," in Part 2, Tier 2 of the STP COL application, Revision 4, which add design upgrades replacing a 95-percent efficiency filter with a 99-percent efficiency charcoal filter and automatic start of the emergency filter train.

Technical Evaluation: (Section 8.2.1.f of NUREG–0737, Supplement 1) The staff's evaluation of the applicant's consequence analysis for TSC habitability is in Section 15.0, "Transient and Accident Analyses," of this SER. In summary, the staff determined that all TSC radiological habitability dose calculations performed by Westinghouse for STP were in accordance with SRP Section 15.0.3, "Design Basis Accident Radiological Consequences of Analyses for Advanced Light Water Reactors," and the guidelines provided in RG 1.183, "Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors." The staff's review of the applicant's response determined that the STP, Units 3 and 4, Emergency Plan adequately described radiological protection for the TSC because it complies with the applicable guidance in Supplement 1 to NUREG–0737. The staff verified that the applicant's proposed changes to FSAR Subsections 9.4.8.1.2 and 9.4.8.2 are in COL application Revision 4. Therefore, the staff considers RAI 13.03-73 to be resolved and closed.

13.3C.8.4 TSC, OSC, and EOF Activation

Technical Information in the Emergency Plan: [H.4] Activation times for the TSC, OSC, and EOF are described in Section G.2, "Operations Support Center"; Section G.3, "Technical Support Center"; and Section G.4, "Emergency Operations Facility." The staff issued RAI 13.03-40, requesting the applicant to explain the alignment of identified activation times for emergency response facilities. In its response to RAI 13.03-40, dated August 27, 2008 (ML082490086), the applicant stated that "Activated" is intended to mean that the facility is capable of performing its intended function, including assembling the minimum staffing specified in Table C-1, "Minimum Staffing Requirements (STPEGS) (Including Capability for Additional

Staffing)." The applicant will revise the Emergency Plan in Sections G.2, G.3, and G.4. The revision will specify that each facility is "designed to be activated within approximately 60 minutes." These changes will eliminate the ambiguity created by the use of the term "fully activated." The changes will also eliminate a discrepancy between Emergency Plan Sections G.2, G.3, and G.4 and Table C-1, which specifies that minimum staffing requirements are achieved in approximately 60 minutes.

Technical Evaluation: [H.4] The staff determined that the additional information provided in response to RAI 13.03-40, is acceptable because it conforms to the applicable guidance in NUREG-0654/FEMA-REP-1. The staff verified that the changes proposed by the applicant in response to RAI 13.03-40 are in Revision 3 of the STP, Units 3 and 4, Emergency Plan. Therefore, the staff determined that the STP, Units 3 and 4, Emergency Plan adequately described the activation of the OSC, TSC, and EOF. This information is acceptable because it conforms to the applicable guidance in NUREG–0654/FEMA-REP-1 and satisfies 10 CFR 50 Appendix E Sections IV.E.8.b, IV.E.8.c, and IV.E.8.d. Therefore, the staff considers RAI 13.03-40 to be resolved and closed.

13.3C.8.5 EOF Size

Technical Information in the Emergency Plan: (Section 8.4.1.c of NUREG–0737, Supplement 1) The STP, Units 3 and 4, Emergency Plan, contains Section 5.1-G, "Emergency Response Facilities," which described the EOF. The staff identified a difference in the description of the EOF for STP, Units 1 and 2, and the facility proposed for STP, Units 3 and 4. In its response to RAI 13.03-75, Part A, dated February 13, 2013 (ML13050A056), the applicant revised Section 5.1-G of the STP, Units 3 and 4, Emergency Plan to reflect the current EOF for STP, Units 1 and 2, located at 4000 Avenue F, Bay City, Texas, to be the EOF for STP, Units 3 and 4.

The applicant has proposed EP-ITAAC 6.1 and 6.2 to confirm that the licensee has established an EOF.

Technical Evaluation: (8.4.1.c of NUREG–0737, Supplement 1) After reviewing the proposed change to Section G, "Emergency Response Facilities," of the STP, Units 3 and 4, Emergency Plan Revision 11, the staff concluded that the content of the information in the proposed change: (1) is applicable to the proposed reactors, (2) is up-to-date, and (3) reflects the use of the existing site for the construction of two additional reactor units and appropriately incorporates the new reactors into the existing plan.

The staff's evaluation of EP-ITAAC 6.1 and 6.2 is in Section 13.3C.19 of this SER.

13.3C.8.6 OSC Capacity and Supplies

Technical Information in the Emergency Plan: [H.9] The STP, Units 3 and 4, Emergency Plan Section 5.1-G, "Emergency Response Facilities," described the location of equipment and facilities for use in the event of an emergency. The applicant incorporated the following changes related to emergency response facilities into the STP, Units 3 and 4, Emergency Plan:

- Changes in Section G.2, "Operations Support Center," reflect the inclusion of Figure G-6, "Typical Operations Support Center," to provide a typical layout of each STP, Units 3 and 4 OSC.

Technical Evaluation: [H.9] After reviewing the proposed changes to Section G.2, Revision 2 of the STP, Units 3 and 4, Emergency Plan, the staff concluded that the content of the information in the proposed change: (1) is applicable to the proposed reactors, (2) is up-to-date, and (3) reflects the use of the existing site for the construction of two additional reactor units and appropriately incorporates the new reactors into the existing plan.

13.3C.8.7 Provisions to Acquire Data from Offsite Sources

Technical Information in the Emergency Plan: [H.6.c] In the STP, Units 3 and 4, Emergency Plan, Section 5.1-G described the location of equipment and facilities that are maintained for use in an emergency at the site.

In RAI 13.03-45, the staff requested the applicant to provide additional information related to radiological laboratory capabilities of STP, Units 3 and 4, and the mobile laboratory. The applicant's response to RAI 13.03-45 dated August 27, 2008 (ML082490086), refers to Section G.9, "Laboratory Facilities," of the STP, Units 3 and 4, Emergency Plan, which stated that the Station will have radiological and radiochemistry laboratories located in each unit. These laboratories will be located in all four STP units. The physical separation of the units will allow the facilities in the unaffected unit to be used as a backup. Additionally, the station radiological and radiochemical laboratory facilities may be supplemented by the following:

- A mobile radiological laboratory set up at the staging area at the Bay City Civic Center and operated by the Department of State Health Services
- The laboratory facilities of neighboring nuclear facilities coordinated by the Institute of Nuclear Power Operations
- AREVA NP, Inc.
- TXU Power (Letter of Agreement)

The applicant also stated that the mobile radiological laboratory in Section G.9 refers to the mobile laboratory provided by the State of Texas, which is capable of providing gamma spectroscopy, alpha spectroscopy, and alpha and beta liquid scintillation counting.

Technical Evaluation: [H.6.c] The staff determined the applicant's response to RAI 13.03-45 acceptable. After reviewing the proposed changes to Section G.9 of the STP, Units 3 and 4, Emergency Plan, the staff concluded that the content of the information in the proposed change: (1) is applicable to the proposed reactors, (2) is up-to-date, and (3) reflects the use of the existing site for the construction of two additional reactor units and appropriately incorporates the new reactors into the existing plan. The staff verified that the proposed revisions to Section G.9 are in Revision 2 of the STP, Units 3 and 4, Emergency Plan. Therefore, the staff considers RAI 13.03-45 to be resolved and closed.

13.3C.8.8 ERO Augmentation at Alternate Facilities

Technical information in the Emergency Plan: [NSIR/DPR-ISG-01, IV.D] The STP, Units 3 and 4, Emergency Plan Revision 7 Section G.5, "Alternate TSC/OSC." described the location and capabilities of the EOF and the alternative facility. Typical equipment and instrumentation for the EOF are permanently located within the EOF located in Bay City, Texas. The alternate facility is co-located with the EOF and has the capability to perform offsite notifications of a plant

emergency within 15 minutes of a change in emergency classification level, issuance of a protective action recommendation, provide engineering assessment activities, and access to up-to-date plant technical documentation.

Technical Evaluation: [NSIR/DPR-ISG-01, IV.D] The staff noted that the South Texas Project Electric Generating Station (STPEGS), Units 1 and 2, Emergency Plan, revised ICN 20-11 6/20/2012, Section G.5, "Alternate TSC/OSC," provides a description of a different facility from that described in STP, Units 3 and 4, Emergency Plan Section G.5. In RAI 13.03-75, Part A, the staff requested the applicant to clarify which facility, described in Section G.5 of the respective emergency plans will be used as an alternate facility to meet the requirements of Appendix E, Section IV.E.8.d, or will both facilities be used? In its response to RAI 13.03-75, dated February 13, 2013 (ML13050A056), the applicant stated that the description of the EOF will be revised in the STP, Units 3 and 4, Emergency Plan to reflect the current EOF located in Bay City, Texas. The applicant also committed to revising Section G.5 to state that if under threat of or experiencing hostile actions, Emergency Response Organization (ERO) members are directed to a staging area at an alternative facility located in the EOF/JIC, located in Bay City, Texas. The EOF is the alternate facility location for onsite ERO responders during a hostile action based event. The staff confirmed that the STP, Units 3 and 4, Emergency Plan, Revision 9, contains the appropriate revisions. Therefore, the staff considers RAI 13.03-75 to be resolved and closed.

13.3C.8.9 Conclusion

The staff determined that the proposed changes to the STP, Units 3 and 4, Emergency Plan related to emergency facilities and equipment are acceptable, because they meet applicable regulatory requirements in 10 CFR 50.47(b)(8) for emergency facilities and equipment, applicable detailed evaluation criteria in NUREG–0654/FEMA-REP-1, NSIR/DPR-ISG-01, applicable requirements related to emergency facilities and equipment in Appendix E to 10 CFR Part 50 and 10 CFR 50.34(f)(2)(xxv), and applicable guidance in Supplement 1 to NUREG–0737.

13.3C.9 Accident Assessment

13.3C.9.1 Regulatory Basis

In determining whether the proposed changes to the emergency plan meet applicable requirements in 10 CFR 50.47(b)(9) for accident assessments, the staff evaluated the requirements against the detailed evaluation criteria[1] in NUREG-0654/FEMA-REP-1.

13.3C.9.2 Initiating Conditions for Emergency Classes

Technical Information in the Emergency Plan: [I.1] The STP, Units 3 and 4, Emergency Plan contains Section H, "Accident Assessment," which described the techniques, methods, and procedures for initial and long-term assessments of an emergency. The applicant incorporated the following changes into the STP, Units 3 and 4, Emergency Plan related to accident assessments:

- Section H.1.2, "Seismic Monitoring," was changed to reflect the substitution of a digital triaxial seismograph with a triaxial time history accelerometer and the description of the location of the seismic instrumentation.

- Section H.1.3, “Plant Process Instrumentation,” was changed to include a reference to the Plant Information and Control System (PICS) for STP, Units 3 and 4.

- Table H-1, “Assessment Instrumentation,” was changed to reflect: (a) the replacement of a digital triaxial seismograph with a triaxial accelerometer and its location; and (b) the inclusion of a Fire Protection System Display in the STP, Units 3 and 4, main control room.

In addition, the applicant has proposed EP-ITAAC 7.1 through 7.7 in Table 4.0-1, Part 9, of the COL application to confirm the following:

- The means to provide initial and continuing radiological assessments throughout the course of an accident [I.2].

- The means to determine the source term of releases of radioactive material within plant systems and the magnitude of the release of radioactive materials based on plant system parameters and effluent monitors [I.3].

- The means to continuously assess the impact of the release of radioactive materials into the environment, accounting for the relationship between effluent monitor readings and onsite and offsite exposures and contamination for various meteorological conditions [I.4].

- The means to acquire and evaluate meteorological information [I.5].

- The means to determine the release rate and projected doses if the instrumentation used for assessment is off scale or inoperable [I.6].

- The means to make rapid assessments of actual or potential magnitudes and locations of any radiological hazards through liquid or gaseous release pathways, including activation, notification means, field team composition, transportation, communication, monitoring equipment, and estimated deployment times [I.8].

Technical Evaluation: [I.1] The staff verified that the proposed changes accurately describe instrumentation changes related to STP, Units 3 and 4, in Revision 2 of the STP, Units 3 and 4, Emergency Plan, see Section 13.3C.19, “Emergency Planning ITAAC,” of this SER for the staff’s evaluation of EP-ITAAC 7.1 through 7.7 in Table 4.0-1. Therefore, the staff concluded that the proposed changes: (1) are applicable to the proposed reactors, (2) are up-to-date, and (3) reflect the use of the existing site for the construction of two additional reactor units and appropriately incorporate the new reactors into the existing plan.

13.3C.9.3 Conclusion

After reviewing the proposed changes related to accident assessment, the staff concluded that the changes are acceptable and meet the applicable requirements of 10 CFR 50.47(b)(9), as cited above, because they comply with the applicable guidance in Planning Standard I of NUREG–0654/FEMA-REP-1.

13.3C.10 Protective Response

13.3C.10.1 Regulatory Basis

As discussed in Section 13.3 of NUREG–0800, if an application proposes to extend an existing site emergency plan to the new reactor, the existing emergency plan should be considered acceptable and adequate, and staff should focus the review on the changes related to the new reactor.

13.3C.10.2 Protective Response

Technical Information in the Emergency Plan: (Section 13.3 of NUREG–0800) Section I, "Protective Response," of the STP, Units 3 and 4, Emergency Plan described the protective response actions for protecting onsite and offsite personnel in the plume exposure pathway EPZ. Furthermore, Section F, "Onsite Shelter," and Section I.3, "Site Evacuation," provide, with reasonable assurance, adequate descriptions of onsite actions to protect onsite personnel and emergency responders from hostile actions and other events.

Technical Evaluation: (Section 13.3 of NUREG–0800) The applicant does not propose any changes to Section F or Section I of the STP, Units 3 and 4, Emergency Plan.

13.3C.10.3 Conclusion

Because the protective response actions will be the same for all four STP units, the applicant is not proposing any changes in the STP, Units 3 and 4, Emergency Plan. Therefore, staff determined this section of the STP, Units 3 and 4, Emergency Plan acceptable because the existing site emergency plan is considered acceptable and adequate.

13.3C.11 Radiological Exposure Control

13.3C.11.1 Regulatory Basis

As discussed in Section 13.3 of NUREG–0800, if an application proposes to extend an existing site emergency plan to the new reactor, the existing emergency plan should be considered acceptable and adequate, and staff should focus the review on changes related to the new reactor. However, the applicant does not propose any changes to Section J, "Radiological Exposure Control," of the STP, Units 3 and 4, Emergency Plan.

13.3C.11.2 Onsite Exposure Guidelines

Technical Information in the Emergency Plan: (Section 13.3 of NUREG–0800) Section J of the STP, Units 3 and 4, Emergency Plan described applicable radiation control measures such as personnel exposure monitoring, contamination control, radiological surveys, and personnel decontamination.

Technical Evaluation: (Section 13.3 of NUREG–0800) The applicant does not propose any changes to Section J of the STP, Units 3 and 4, Emergency Plan.

13.3C.11.3 Conclusion

Because radiological exposure control will be the same for all four STP units, the applicant is not proposing any changes in the STP, Units 3 and 4, Emergency Plan. Therefore, staff

determined this section of the STP, Units 3 and 4, Emergency Plan acceptable because the existing site emergency plan is considered acceptable and adequate.

13.3C.12 Medical and Public Health Support

13.3C.12.1 Regulatory Basis

As discussed in Section 13.3 of NUREG–0800, if an application proposes to extend an existing site emergency plan to the new reactor, the existing emergency plan should be considered acceptable and adequate, and staff should focus the review on changes related to the new reactor. However, the applicant does not propose any changes related to the description of arrangements for medical services for contaminated and injured individuals in the STP, Units 3 and 4, Emergency Plan.

13.3C.12.2 Medical and Public Health Support

Technical Information in the Emergency Plan: (Section 13.3 of NUREG–0800) The applicant is not proposing any changes to the following sections of the STP, Units 3 and 4, Emergency Plan that are related to medical and public health support:

- Section J.5, “Radiological Medical Considerations.”
- Section 5.7, “Letters of Agreement,” which contains LOAs with the Matagorda County Emergency Medical Services, Matagorda County Hospital District, and Memorial Hermann Texas Medical Center.
- Section G.11, “First Aid.”

Technical Evaluation: (Section 13.3 of NUREG–0800) Because the applicant is not proposing any changes to Section J.5, Section 5.7, and Section G of the STP, Units 3 and 4, Emergency Plan, the existing emergency plan is considered acceptable and adequate.

13.3C.12.3 Conclusion

Because medical and public health support will be the same for all four STP units, the applicant is not proposing any changes in the STP, Units 3 and 4, Emergency Plan. Therefore, staff determined the above sections of the STP, Units 3 and 4, Emergency Plan acceptable because the existing site emergency plan is considered acceptable and adequate.

13.3C.13 Recovery and Reentry Planning and Post-accident Operations

13.3C.13.1 Regulatory Basis

As discussed in Section 13.3 of NUREG–0800, if an application proposes to extend an existing site emergency plan to the new reactor, the existing emergency plan should be considered acceptable and adequate, and staff should focus the review on changes related to the new reactor.

13.3C.13.2 Plans and Procedures for Recovery and Reentry

Technical Information in the Emergency Plan: (Section 13.3 of NUREG–0800) Section L, "Recovery and Re-entry," of the STP, Units 3 and 4, Emergency Plan described the requirements for recovery and re-entry into evacuated areas of the Station following an emergency.

Technical Evaluation: (Section 13.3 of NUREG–0800) Because the applicant is not proposing any changes to Section L of the STP, Units 3 and 4, Emergency Plan, the existing emergency plan is considered acceptable and adequate.

13.3C.13.3 Conclusion

Because recovery and reentry is the same for all four STP units, the applicant is not proposing any changes in the STP, Units 3 and 4, Emergency Plan. Therefore, the staff determined this section of the STP, Units 3 and 4, Emergency Plan acceptable because the existing site emergency plan is considered acceptable and adequate.

13.3C.14 Exercises and Drills

13.3C.14.1 Regulatory Basis

As discussed in Section 13.3 of NUREG–0800, if an application proposes to extend an existing site emergency plan to the new reactor, the existing emergency plan should be considered acceptable and adequate, and staff should focus the review on changes related to the new reactor.

13.3C.14.2 Exercises and Drills

Technical Information in the Emergency Plan: (Section 13.3 of NUREG–0800) Section N, "Drills and Exercises," of the STP, Units 3 and 4, Emergency Plan, described the drill and exercise program that will be used for the site to maintain emergency preparedness.

The applicant is proposed EP-ITAAC 8.1 in Part 9 of the COL application to confirm that the licensee conducts a full-participation exercise to evaluate major portions of emergency response capabilities, which include participation by each State and local agency in the plume exposure pathway EPZ and each State in the ingestion EPZ.

10 CFR Part 50, Appendix E, Section IV.F.2.j establishes an eight-year exercise cycle. In the letter U7-C-NINA-NRC-120055, dated July 31, 2012 (ML12219A325), the applicant in Analysis 6, identified changes in Section N.1.4, "Annual Drills," and Addendum N-1, but did not identify a change in Section N.2.2, "Scenario Composition." In RAI-13.03-80, the staff requested that the

applicant provide for the change in the exercise cycle from six to eight years in STP Emergency Plan Chapter 5, Section N.2.2, "Scenario Composition." Additionally, the applicant needs to confirm the commitment to revise the Emergency Plan to include the exercise scenarios that shall provide the opportunity to ERO to demonstrate proficiency in key skills necessary to respond to emergency response duties. This information is needed to verify compliance with 10 CFR Part 50, Appendix E, Section IV.F.2.j, "Establishment of a Security Organization."

In its response to RAI 13.03-80, dated February 13, 2013 (ML13050A056), the applicant stated that COL application Part 5, Section N.2.2 will be revised to include the eight-year criteria for the Drills and Exercise Programs. The staff verified that text changes have been made to the STP, Units 3 and 4, Emergency Plan Revision 9 Section N.2.2 to establish an eight-year exercise cycle. Therefore, the staff considers RAI 13.03-80 to be resolved and closed.

Technical Evaluation: (Section 13.3 of NUREG–0800) The applicant does not propose any changes to Section N of the STP, Units 3 and 4, Emergency Plan different than what is already established for STP, Units 1 and 2.

See Section 13.3C.19 of this SER for the staff's evaluation of EP-ITAAC 8.1.

13.3C.14.3 Conclusion

Because exercises and drills will be the same for all four STP units, the applicant is not proposing any changes in the STP, Units 3 and 4, Emergency Plan. Therefore, the staff determined that this section of the STP, Units 3 and 4, Emergency Plan is acceptable because the existing site emergency plan is considered acceptable and adequate.

13.3C.15 Radiological Emergency Training

13.3C.15.1 Regulatory Basis

10 CFR 50.47(b)(15) requires that radiological emergency response training should be provided to those who may be called on to assist in an emergency. To determine whether the proposed emergency plan meets the applicable regulatory requirements in 10 CFR 50.47(b)(15), the staff evaluated the plan against the detailed evaluation criteria in NUREG–0654/FEMA-REP-1.

13.3C.15.2 Onsite Emergency Response Organization Training

Technical Information in the Emergency Plan: [O.2] Section M, "Emergency Preparedness Training," of the STP, Units 3 and 4, Emergency Plan described the emergency preparedness training program for onsite and offsite emergency response personnel to maintain a state of emergency preparedness for the STP site. The applicant proposed the following change in the STP, Units 3 and 4, Emergency Plan:

- Plant Information & Control System (PICS) operation training was added to Subsection M.4.1, "Specialized training shall be conducted to cover the following topics," for STP, Units 3 and 4.

[O.1] In addition, the application proposed EP-ITAAC-9.1 in Table 4.0-1, Part 9 of the COL application stating that site-specific emergency response training was provided for those who may be called upon to provide assistance in the event of an emergency.

Technical Evaluation: [O.2] After reviewing the above change to Section M of the STP, Units 3 and 4, Emergency Plan, the staff concluded that the proposed change: (1) is applicable to the proposed reactors, (2) is up-to-date, and (3) reflects the use of the existing site for the construction of two additional reactor units and appropriately incorporates the new reactors into the existing plan. The staff also verified that the proposed change to Subsection M.4.1 is in Revision 2 of the STP, Units 3 and 4, Emergency Plan. The proposed change is acceptable because it conforms to the applicable guidance in NUREG-0654/FEMA-REP-1.

[O.1] See Section 13.3C.19 of this SER for the staff's evaluation of EP-ITAAC 9.1.

13.3C.15.3 Conclusion

The staff reviewed the proposed change to the STP, Units 3 and 4, Emergency Plan against Planning Standard O, "Radiological Emergency Response Training," of NUREG-0654/FEMA-REP-1. The staff determined that the proposed change is acceptable because it is consistent with the standards of 10 CFR 50.47(b)(15), as described above.

13.3C.16 Responsibility for the Planning Effort: Development, Periodic Review and Distribution of Emergency Plans

13.3C.16.1 Regulatory Basis

As discussed in Section 13.3 of NUREG–0800, if an application proposes to extend an existing site emergency plan to the new reactor, the existing emergency plan should be considered acceptable and adequate, and staff should focus the review on changes related to the new reactor.

13.3C.16.2 Responsibility for the Planning Effort: Development, Periodic Review and Distribution of Emergency Plans

Technical Information in the Emergency Plan: (Section 13.3 of NUREG–0800) Section O, "Emergency Preparedness," of the STP, Units 3 and 4, Emergency Plan described the actions required for emergency plan development and review and for distribution and maintenance of the station's emergency plan to maintain a state of emergency preparedness.

Technical Evaluation: (Section 13.3 of NUREG–0800) The applicant does not propose any changes to Section O of the STP, Units 3 and 4, Emergency Plan.

13.3C.16.3 Conclusion

Because emergency preparedness is the same for all four STP units, the applicant is not proposing any changes in the STP, Units 3 and 4, Emergency Plan. Therefore, the staff determined that this section of the STP, Units 3 and 4, Emergency Plan is acceptable because the existing site emergency plan is considered acceptable and adequate.

13.3C.17 Security-Based Event Considerations

13.3C.17.1 Regulatory Basis

RG 1.206, Regulatory Position C.I.13.3.3 specifies that applicants for a combined license need to address the Commission Order issued on February 25, 2002. The following item relates to the EALs for STP, Units 3 and 4:

> Provide EALs that ensure that a security event results in an emergency classification declaration of at least a notification of unusual event. The classification scheme should also reflect the strategy for escalation to a higher-level event classification.

13.3C.17.2 Security-Based Emergency Classification and EALs

Technical Information in the Emergency Plan: (Section 13.3 of NUREG–0800) In its amended response to RAI 13.03-72, dated September 15, 2009 (ML092610375), the applicant proposed a license condition to submit a fully developed set of EALs to the NRC at least 180 days before initial fuel loading, in accordance with the NEI 99–01, Revision 5-endorsed EAL scheme, with three exceptions. The emergency classification scheme in NEI 99-01, Revision 5 includes initiating conditions for hostile actions for each emergency class. Additional information related to the applicant's response to RAI 13.03-72 is in Section 13.3C.4 of this SER.

Technical Evaluation: (Section 13.3 NUREG–0800) The applicant proposed a license condition to ensure that the STP, Units 3 and 4, Emergency Plan will contain EALs so that a security-based event results in an emergency classification. The classification scheme also reflects the strategy for escalation to a higher level of event classifications. The staff evaluated the proposed License Condition in SER Section 13.3C.4. The staff determined that this proposed license condition is acceptable because it meets the guidance in Section 13.3 of NUREG–0800.

13.3C.17.3 Conclusion

After reviewing the onsite emergency plan described above, the staff concluded that the information in the STP, Units 3 and 4, Emergency Plan is consistent with the EAL portion of Section 13.3 of NUREG–0800 related to considerations based on hostile actions. Therefore, the EAL information for responding to hostile actions is acceptable.

13.3C.18 Evacuation Time Estimate (ETE) Analysis

The STP, Units 3 and 4, Emergency Plan includes an analysis of the time required to evacuate the plume exposure pathway EPZ. The ETE report, “South Texas Project Development of Evacuation Time Estimates,” dated September 2007, is included as a separate document in the COL application but is considered part of the STP, Units 3 and 4, Emergency Plan. The Pacific Northwest National Laboratory and Sandia National Laboratory assisted the staff in performing the technical review of the ETE report. The ETE report is incorporated into the STP, Units 3 and 4, Emergency Plan as Chapter 4, “Evacuation Time Estimate.” The ETE report includes analyses and responses to RAIs that provide the basis for the staff’s conclusions as to the adequacy of its content and conformity with Appendix 4, “Evacuation Time Estimates within the Plume Exposure Pathway Emergency Planning Zone,” of NUREG-0654/FEMA-REP-1.

13.3C.18.1 Regulatory Basis for the ETE Analysis

The staff reviewed the ETE analysis and considered the following regulatory requirements and guidance:

> 10 CFR 52.79(a)(21) refers to Appendix E to 10 CFR Part 50, Section IV, "Content of Emergency Plans," which requires the nuclear power reactor operating license applicant to provide an analysis of the time required to evacuate and take other protective actions for various sectors and distances within the plume exposure pathway EPZ, for transient and permanent populations.

The ETE report was evaluated against Appendix 4 to NUREG–0654/FEMA-REP-1. Appendix 4 contains detailed guidance that the staff used to determine whether the ETE analysis met the applicable regulatory requirements in Appendix E to 10 CFR Part 50.

13.3C.18.2 Introductory Materials Related to the ETE Report

Technical Information in the ETE Report: [Section I of Appendix 4] Section 1, "Introduction," of the ETE report Revision 3 provides a basic description of the process used to estimate the ETEs. The report includes a description and a map (Figure 1-1, "Location of the South Texas Project") of the EPZ and surrounding area. The staff issued RAI 13.03-3, requesting the applicant to provide additional information regarding the lack of political boundaries on the map. In its response to RAI 13.03-3, dated August 27, 2008 (ML082490086), the applicant explained that the entire STP plume exposure pathway EPZ is within Matagorda County, Texas. The staff issued RAI 13.03-2, requesting the applicant to provide additional information regarding communities that are not identified on the map. In its response to RAI 13.03-2, dated August 27, 2008 (ML082490086), the applicant revised and labeled Figure 1-1 to reflect the region surrounding the site out to metropolitan Houston, Texas and the cities of Matagorda, Texas, Palacios, Texas, and Bay City, Texas.

The major assumptions of the ETE report are in Section 2, "Study Estimates and Assumptions." Population estimates are based on the year 2000 census data and are projected to the year 2007. County-specific projections are based on growth rates that were estimated by comparing the 2000 census data with 2005 census estimates. Estimates of employees who commute into the EPZ to work are based on employment data obtained from county emergency management officials. Population estimates at special facilities are based on available data from county emergency management offices. Roadway capacity estimates are based on field surveys and the application of the *Highway Capacity Manual* (HCM 2000, Transportation Research Board, National Research Council, 2000). Population mobilization times are based on a statistical analysis of data acquired from a telephone survey, as is the relationship between the resident population and evacuating vehicles (occupancy factors). The transport of residents without access to private vehicles is assumed to be on buses. The effect of a voluntary (shadow) evacuation out to 24.1 km (15 mi) is considered in the evacuation time calculation. The Matagorda Beach area (just south of the plume exposure pathway EPZ) has only one access road (FM 2031) that cuts through the plume exposure pathway EPZ.

An outline of the approach for estimating the time to evacuate is in a link-node map (Figure 1-2, "Link-Node Network") of the evacuation routes developed for the analyses. Further details on the methodology are described in Section 3, "Demand Estimation," Section 4, "Estimates of

Highway Capacity," Section 5, "Estimation of Trip Generation Time," and Section 6, "Demand Estimation for Evacuation Scenarios"; as well as in Appendix C, "Traffic Simulation Model: IDYNEV"; and Appendix D, "Detailed Description of Study Procedures."

Considerations include a total of 12 "Scenarios" representing different seasons, times of day, days of the week, and weather conditions. There are studies of two special event scenarios: (1) the construction period of a new nuclear plant, and (2) the assumed evacuation of an extra 5,000 people on Matagorda Beach during a holiday weekend. Additional assumptions reflected in the development of population estimates include pass-through populations and regional employees, which are discussed in Section 3 and Appendix E, "Special Facility Data." Section 8, "Transit-Dependent and Special Facility Evacuation Time Estimates," discusses the assumptions regarding transit-dependent and special populations. Section 5 of the ETE report described the development of trip-generation times taken from survey responses.

Technical Evaluation: [Section I of Appendix 4] The ETE report includes a map showing the proposed site, plume exposure pathway EPZ, transportation networks, topographical features, and political boundaries. The boundaries of the EPZ, in addition to the evacuation subareas within the EPZ, are based on factors such as current and projected demography, topography, land characteristics, access routes, and jurisdictional boundaries.

The ETE report described the method of analyzing the evacuation times and includes a general description of the IDYNEV modeling system with the assumptions used in the ETE analysis. The IDYNEV system consists of several submodels: a macroscopic traffic simulation model; an intersection capacity model; and a dynamic, node-centric routing model that adjusts the "base" routing in the event of an imbalance in the levels of congestion on the outbound links. Another model of the IDYNEV system is the traffic assignment and distribution model, which integrates an equilibrium assignment model with a trip distribution algorithm to compute origin-destination volumes and paths of travel designed to minimize travel time. The staff determined the clarifications acceptable in the applicant's responses to RAIs 13.03-2 and 13.03-3 regarding political boundaries and communities. The staff also confirmed that revised Figure 1-1, Location of "South Texas Project," is included in Revision 2 of the ETE report. Therefore, the staff determined that the description of the process used to estimate evacuation times conforms to the guidance in Section I, "Introduction," of Appendix 4 to NUREG–0654/FEMA-REP-1, and is thus acceptable. Therefore, the staff considers RAIs 13.03-2 and 13.03-3 to be resolved and closed.

13.3C.18.3 Demand Estimation

Technical Information in the ETE Report: [Section II of Appendix 4] Section 3 of the ETE report Revision 3 estimates the number of people who may need to be evacuated (the "demand estimation"). Population estimates in the ETE report are based on the 2000 Census. The ETE report stated that census data show a slightly decreased (0.3 percent) local population between the years 2000 and 2005. The report then conservatively assumes the earlier, larger population for the analyses. The staff issued RAI 13.03-1, requesting the applicant to provide additional information regarding differences in the assumptions between the FSAR and the ETE report. In its response to RAI 13.03-1, dated August 27, 2008 (ML082490086), the applicant noted that the estimates were prepared by separate contractors for areas with slightly different definitions that corresponded within approximately two percent, thus providing confidence in the results. Therefore, the staff determined that this response to RAI 13.03-1 is acceptable.

A separate analysis for people without personal vehicles is in Section 8 of the ETE report, which discusses permanent residents as well as transient populations, including the employees of two local chemical companies. The report assumes that employees who work within the plume exposure pathway EPZ but live outside of the EPZ and commute to jobs within the plume exposure pathway EPZ-will be evacuated with the permanent resident population. The staff issued RAI 13.03-4(1), requesting the applicant to clarify the inconsistent use of the percentages of households with commuters. In its response to RAI 13.03-4(1), dated August 27, 2008, the applicant included a revision to Subsection 2.3.3.b of Section 2.3, "Study Assumptions," of the ETE report that stated:

> 70 percent of those households in the EPZ with commuters will await the return of a commuter before beginning their evacuation trip, based upon the telephone survey results.

The staff confirmed that the clarification in the applicant's response to RAI 13.03-4(1) is included in the July 2009, revision of the ETE report.

Other transient groups include visitors to local recreational areas such as beaches and parks. There are only a limited number of "special populations" (i.e., there are only three schools and no hospitals or jails within the plume exposure pathway EPZ). Section 8 of the ETE includes descriptions of evacuation routes and time estimates for transit-dependent and special facilities. The analyses assume that vehicles traveling through the plume exposure pathway EPZ (external-external trips) at the time of an accident will continue to enter the plume exposure pathway EPZ during the first 60 minutes. Thereafter, the analysis assumes that no more vehicles will enter, and those that remain will also evacuate with the residents and other transients.

The ETE report includes the following six figures that summarize the various population groups. The figures are in the format suggested in Appendix 4 of NUREG–0654/FEMA-REP-1:

- Figure 3-2, "Permanent Residents by Sector"
- Figure 3-3, "Permanent Resident Vehicles by Sector"
- Figure 3-4, "Transient Population by Sector"
- Figure 3-5, "Transient Vehicles by Sector"
- Figure 3-6, "Non-resident Employee Population by Sector"
- Figure 3-7, "Non-resident Employee Vehicles by Sector"

The staff issued RAI 13.03-10, requesting the applicant to provide additional information on subarea descriptions, the allocation of evacuees by scenario, the use of school buses in the summer, the use of "shelter in place," and the application of shadow evacuations. In its response to RAI 13.03-10, dated August 27, 2008, the applicant removed the column labeled "Affected Downwind Sectors" in Table 6-1, "Definition of Evacuation Regions," which clarifies the discussion regarding the allocation of evacuees by scenario and the assumptions regarding the number of vehicles (including summer school buses). The applicant also revised the statement regarding "shelter in place" and "shadow populations" to state, "Both voluntary and shadow evacuations are assumed to take place over the same time frame from within the impacted area." The staff determined this response to RAI 13.03-10, to be acceptable.

Technical Evaluation: [Section II of Appendix 4] The ETE report estimates the number of people who may need to be evacuated. The three population segments considered are

permanent residents, transients, and persons in special facilities. The size of the permanent population is adjusted for growth. The population data are translated into two groups, those using automobiles and those without automobiles. The estimated number of vehicles used by permanent residents is based on an appropriate automobile occupancy factor. In addition, the report determined time estimates for the simultaneous evacuation of the entire plume exposure pathway EPZ.

Estimates of transient populations are based on local data, including peak tourist volumes and employment data. There are also estimates for special facility populations (three schools). The subareas in the ETEs encompass the entire area within the plume exposure EPZ. The maps are generally adequate for that purpose, and the level of detail is approximately the same as the United States Geological Survey (USGS) quadrant maps. The evacuation assumptions are based on the simultaneous evacuation of inner and outer sectors.

The staff determined that the clarifications and ETE report revisions in the applicant's responses to RAIs 13.03-1, 13.03-4(1), and 13.03-10, are acceptable. Therefore, the staff considers RAIs 13.03-1, 13.03-4(1) and 13.03-10 to be resolved and closed. The staff determined that the description of the estimated number of people who may need to be evacuated conforms to the guidance in Section II of Appendix 4 to NUREG–0654/FEMA-REP-1 and is thus acceptable.

13.3C.18.4 Traffic Capacity

Technical Information in the ETE Report: [Section III of Appendix 4] Section 4 described highway capacity estimates. The methods used are generally from the *Highway Capacity Manual*. Appendix K, "Evacuation Roadway Network Characteristics," of the ETE report identifies all evacuation route segments and their characteristics, including capacity. The staff issued RAIs 13.03-13 and 13.03-14, requesting the applicant to provide additional descriptions of the road network used for evacuation routes. Specifically, RAI 13.03-13 requested the applicant to clarify the routes shown in the State of Texas Emergency Management Plan (EMP) and to provide a complete link-node map. RAI 13.03-14, requested the application to provide information on highway lane widths. In its response to RAI 13.03-13, dated August 27, 2008 (ML082490086), the applicant included a scalable electronic link-node map that corrected information regarding the highway network. In its response to RAI 13.03-14, dated August 27, 2008 (ML082490086), the applicant clarified the locations of adverse highway geometries that could lead to reduced highway capacity and speed. The staff issued RAI 13.03-5, requesting the applicant to clarify the description of the evacuation process in Section 7.3, "Evacuation Rates." In its response to RAI 13.03-5, dated August 27, 2008 (ML082490086), the applicant replaced the first two sentences of Section 7.3 with:

> While all routes remain available for evacuees, only a few of these routes will be needed towards the end of the evacuation.

The staff considered this response acceptable, and verified that the changes proposed in response to RAI 13.03-5, were included in Revision 3 of the STP, Units 3 and 4, ETE report. Therefore, the staff considers RAI 13.03-5 to be resolved and closed.

The staff issued RAI 13.03-12, requesting the applicant to provide additional information regarding the efficiency of using traffic and access control points to determine evacuation times. In its response to RAI 13.03-12, dated August 27, 2008 (ML082490086), the applicant noted that although these concepts are discussed, they were not applied to the modeling; therefore,

any efforts at traffic control will shorten the estimated evacuation time. However, the applicant also stated in its response, that the following text will be added to the first paragraph of Section 7.3:

> Figure 7.5 indicates that evacuation is a continuous, dynamic process.

In its response to RAI 13.03-12, the applicant also stated that the annotations of delay times in congested areas shown in Figures 7-3, "Traffic Congestion at 45 Minutes after the Advisory to Evacuate," and 7-4, "Traffic Congestion at 1 Hour and 15 Minutes after the Advisory to Evacuate" will be added to the next revision of the ETE report. The staff confirmed that the proposed changes to the text and to Figures 7-3 and 7-4, in response to RAI 13.03-12, are in the July 2009, revision of the ETE report.

Section 9, "Traffic Management Strategy," of the ETE report presents a traffic control and management strategy that is designed to expedite the movement of evacuating traffic. The traffic management strategy is based on a field survey of critical locations and consultations with emergency management and enforcement personnel.

Section 10, "Evacuation Routes," of the ETE report illustrates the emergency evacuation routes. Details of the link-node map are in Appendix K, "Evacuation Roadway Network Characteristics." The staff issued RAI 13.03-13, requesting the applicant to provide additional information regarding the transport network. The request included the following:

- Clarification of differences in the evacuation routes between the ETE report and the State of Texas EMP.
- A map (or maps) including the nodes identified in Appendix K.
- A roadway map with the sector and quadrant boundaries.
- Verification of the map with the node network in Figure 1.2, "STP Link-Node Network," (that appeared to be missing a segment south and east of the plant and represented a node with inputs from two directions and no output segments).
- Investigation of whether the link-node map used for the routes included the connection at the southeast corner of the main cooling reservoir.
- Confirmation of selected routes.
- Clarification of the width used for a "Full Lane" and whether lane widths vary within the EPZ.

In its response to RAI 13.03-13, dated August 27, 2008, the applicant explained that the evacuation routes in the ETE report are somewhat enhanced compared with those in the current Texas EMP. The applicant provided a new scalable electronic map with annotations of sector boundaries, nodes, and links used in the ETE analyses and corrections of omissions and inappropriate directional indications that reflect the evacuation network as modeled.

Technical Evaluation: [Section III of Appendix 4] The ETE report provides a complete review of the evacuation road networks that are slightly enhanced compared with those in the older ETE report for STP, Units 1 and 2. The report includes analyses of travel times and

potential locations for congestion. The ETEs are not dependent on the establishment of traffic and access control points. Therefore, manpower and equipment shortages have no effect on the ETE calculations. The report also described all evacuation route segments and their characteristics, including capacity, and a traffic control and management strategy that is designed to expedite the evacuation. The traffic management strategy is based on a field survey of critical locations and consultations with emergency management and enforcement personnel.

The ETE report includes assumptions for determining the number of vehicles needed, as well as the methodology for determining the transport-dependent population. The applicant also analyzes travel times and potential locations for serious congestion along the evacuation routes. The staff determined the revisions to the ETE report in response to RAIs 13.03-12, 13.03-13, and 13.03-14 to be acceptable. Therefore, the staff considers RAIs 13.03-12, 13.03-13 and 13.03-14 to be resolved and closed. The staff determined that the description of the highway capacity estimates conforms to the guidance in Section III of Appendix 4 to NUREG-0654/FEMA-REP-1 and is thus acceptable.

13.3C.18.5 Analysis of Evacuation Times

Technical Information in the ETE Report: [Section IV to Appendix 4] Sections 4, 5, and 6 of the ETE report Revision 3, describe the methods used to estimate the evacuation times. Section 4 described estimates of highway capacity that are discussed in detail in Section 13.3C.18.4. Section 5 provided estimates of the distributions of elapsed times associated with mobilization activities undertaken by the public to prepare for the evacuation trip (the "trip generation time").

Section 6 defines the various evacuation cases used in the time estimates. A case is defined as a combination of a scenario and a region. A scenario is defined as a combination of circumstances that include the time of day, day of the week, season, and weather conditions. Scenarios define the number of people in each affected population group and the respective mobilization time distributions. A region is defined as a grouping of contiguous evacuation zones that forms either a "keyhole" sector-based area or a circular area within the plume exposure pathway EPZ that is evacuated in response to a radiological emergency. The STP plume exposure pathway EPZ is defined as containing 11 separate evacuation zones that may be combined into regions, with boundaries along major roads or rivers. The boundary definitions are in Appendix L, "Zone Boundaries," of the ETE report. These boundaries do not bisect any population centers. In addition, these regions approximate (by radius and area) 3.2 km (2 mi) and four 90-degree sectors, 8.0 km (5 mi) and four 90-degree sectors, 16.1 km (10 mi) and four 90-degree sectors, and 16.1 km (10 mi) with an entire plume exposure pathway EPZ.

Separate maps in Appendix E of the ETE report indicate recreational areas, schools, and major employers. Information also includes population information by permanent resident, transient, and employee and the respective estimated number of vehicles for each population. Reception centers are shown on maps in Section 10, "Evacuation Routes," of the ETE report. The staff issued RAI 13.03-11, requesting the applicant to provide additional information regarding relocation facilities. In its response to RAI 13.03-11, dated August 27, 2008 (ML082460086), the applicant provided a corrected version of Figure 10-2, "Evacuation Route Map (All Zones)," which eliminates the confusion regarding the reception centers and resolves this RAI. A summary of the ETEs is in Section 7, "General Population Evacuation Time Estimates," of the

ETE report. These results cover 22 regions within the STP EPZ and the 12 evacuation scenarios discussed in Section 6. There are evacuation times for 22 evacuation regions and 12 scenarios in Appendix J, "Evacuation Time Estimates for All Evacuation Regions and Evacuation Time Graphs for Region 3 (R3), for All Scenarios." Results are for 50 percent, 90 percent, 95 percent, and 100 percent of the vehicles and for good and adverse (rainy) weather conditions. There are maximal evacuation times as well as the times that achieve lower percentages. Evacuation times are reported separately for the general population (Section 7 and Appendix J), schools (Section 8), and the transit-dependent population (Section 8). The general population includes both permanent residents and transients. Figures J-1 through 12, "Evacuation Time Estimates—Scenario 1 [through 12] for Region 3 (the entire EPZ)," describe the time distributions for evacuating vehicles. The ETE report uses Figure 7-3, "Traffic Congestion at 45 Minutes after the Advisory to Evacuate," Figure 7-4, "Traffic Congestion at 1 Hour and 15 Minutes after the Advisory to Evacuate," and Figure 7-5, "Evacuation Time Estimates for STP Summer, Weekend, Midday, Good Weather Evacuation of Region R03 (Entire EPZ)," to illustrate the patterns of traffic congestion that arise for the case when the entire plume exposure pathway EPZ (Region R3) is advised to evacuate during the summer, weekend, and midday periods under good weather conditions (a case with the maximum number of evacuees because of assumed crowds on the Matagorda Island beaches). The staff issued RAIs 13.03-12 and 13.03-17(2), requesting the applicant to provide additional information regarding travel times and delay durations. In its responses to RAIs 13.03-12 and RAI 13.03-17(2), dated August 27, 2008 (ML082490086), the applicant explained that the scenario for evacuating the full EPZ during good weather leads to the most traffic congestion, which dissipates after approximately 1.5 hours. The applicant also revised the text in Section 7.3, "Evacuation Rates," to indicate that an evacuation is a continuous and dynamic process. The applicant has annotated Figure 7-3, "Traffic Congestion at 45 Minutes after the Advisory to Evacuate," and Figure 7-4, "Traffic Congestion at 1.5 Hours after the Advisory to Evacuate," with the delay times along congested areas.

Appendix I, "Evacuation Sensitivity Studies," contains a series of sensitivity tests of the results to trip generation time (directly related to time-dependent traffic loading) and the amount of shadow evacuations. The staff issued RAI 13.03-15, requesting the applicant to provide additional information concerning the possible impacts on evacuation time caused by alternative adverse weather conditions (e.g., fog, flooding, etc.). In its response to RAI 13.03-15, dated August 27, 2008, the applicant stated that speed reductions due to fog are approximately the same as those for heavy rain; and speed reductions due to rain were so small, they insignificantly impacted the ETEs rounded to the nearest five minutes. The applicant also explained that because highways have been reconstructed to minimize flood hazards, floods are no longer a limiting hazard. In addition, the applicant corrected the information regarding the reduction in evacuation time between normal conditions and adverse conditions for summer weekends at midday in Table 7-1 C, "Time to Clear the Indicated Area of 95 percent of the Affected Population." Thus, the staff determined that the response to RAI 13.03-15 is acceptable. Therefore, the staff considers RAI 13.03-15 to be resolved and closed.

The staff issued RAI 13.03-16, requesting the applicant to clarify the assumptions regarding "shadow evacuation," STP plant personnel evacuation, and behavior of commuters. In its response to RAI 13.03-16, dated August 27, 2008 (ML082490086), the applicant clarified these assumptions and also stated that Subsection 2.3.3.b of Section 2.3, "Study Assumptions," will be revised as described in the applicant's response to RAI 13.03-4(1), which is discussed in Section 13.3C.18.3 of this SER. Section 8, "Transit-Dependent and Special Facility Evacuation Time Estimates," of the ETE report includes separate calculations for special populations of

schoolchildren and transit-dependent individuals. Telephone survey results (reported in Appendix F, "Telephone Survey") were used to estimate the portion of the population requiring transit service, including persons in households who do and do not have a vehicle available at the time the evacuation is ordered. The ETE report assumes that half of these people will ride-share with others, but a residual 89 persons will require approximately 3 buses. Section 8 described the operations for these buses. The staff issued RAI 13.03-9, requesting the applicant to clarify bus boarding and unloading times. In its response to RAI 13.03-9, dated August 27, 2008 (ML082490086), the applicant described additional available data indicating that the times selected are conservative. Thus, the staff determined that the response to RAI 13.03-9, is acceptable. Therefore, the staff considers RAI 13.03-9 to be resolved and closed.

Section 8 also described proposed routes for transient-dependent and special facility populations. The staff issued RAIs 13.03-6, 13.03-7, and 13.03-8, requesting the applicant to describe assumptions regarding transients and persons in special facilities, including those confined to institutions such as hospitals, nursing homes, and prisons. Specifically, the RAIs requested the applicant to clarify the development of estimates for transient populations, employee and special facility populations, persons requiring public transit, and peak holiday populations. In its response to RAI 13.03-6, dated August 27, 2008 (ML082490086), the applicant stated the intent to delete the data for Zone 12 in Table 3-4, "Summary of Non-EPZ Employees by Zone," because there are only 11 zones. The staff verified that the correction described in RAI 13.03-6, is included in the July 2009, revision of the ETE report. Therefore, the staff considers RAI 13.03-6 to be resolved and closed. In its response to RAI 13.03-7, dated August 27, 2008 (ML082490086), the applicant explained the assumptions for ambulatory transit-dependent individuals who will walk to designated pickup points. There are separate ETE distributions for auto-owning households, school populations, and transit-dependent populations in Sections 7 and 8. Section 8 also includes the development of an estimated time required to evacuate a particular segment of the non-auto-owning population dependent on public transportation, in a manner similar to that used for the auto-owning population.

Also in RAI 13.03-7, the staff requested the applicant to describe the assumptions underlying the means to be utilized for accommodating special populations with no access to private transport. In its response to RAI 13.03-7, dated August 27, 2008, the applicant indicated that sufficient time is included in the ETEs for those populations to walk to transit bus stops. Accordingly, the staff determined that the response to RAI 13.03-7 is acceptable. Therefore, the staff considers RAI 13.03-7 to be resolved and closed.

In its response to RAI 13.03-8, dated August 27, 2008 (ML082490086), the applicant clarified the numbers of park and beach users assumed for various scenarios, justified the small numbers of users of minor recreational areas, clarified estimates of the number of seasonal residents, explained how resident and non-EPZ-resident employees are treated, and explained the assumptions related to "shadow" populations. Accordingly, the staff determined that the response to RAI 13.03-8 is acceptable. Therefore, the staff considers RAI 13.03-8 to be resolved and closed.

Technical Evaluation: [Section IV to Appendix 4] A total of 264 ETEs were computed for the evacuation of the general public. Each ETE quantifies the aggregate evacuation time estimated for the population within one of the 22 Evacuation Regions to completely evacuate from that region, under the circumstances defined for 1 of 12 Evacuation Scenarios (22 x 12 = 264). There are separate ETEs calculated for transit-dependent evacuees, including school children.

An acceptable variant of the NUREG–0654 format is used for the presentation of the evacuation times in Appendix J.

Distribution functions for notification of the various categories of evacuees were developed. The distribution functions for the action stages after notification predict what fraction of the population will complete a particular action within a given span of time. There are separate distributions for auto-owning households, school populations, and transit-dependent populations. These times are combined to form the trip-generation distributions. There are separate distributions for auto-owning households, school populations, and transit-dependent populations; there are also calculations for on-road travel and delay times. The process for developing an estimate of the time required to evacuate a particular segment of the non-auto-owning population dependent upon public transportation is similar to that used for the auto-owning population.

The applicant has added clarifying information in responses to the following RAIs: 13.03-6(1); 13.03-7; 13.03-8(1)(a, c, and d); 13.03-8(2); 13.03-9; 13.03-12(2); 13.03-12(4); 13.03-12(5); 13.03-15(2)(b); 13.03-16(a, b, and d); 13.03-17(2)(a); 13.03-17(3); 13.03-17(4); 13.03-17(5); 13.03-17(6); and 13.03-17(7). The staff determined these clarifications to be acceptable. The applicant also provided additional information in response to RAIs 13.03-8(1)(b), 13.03-11, 13.03-15(1), 13.03-17(2)(a), 13.03-17(3), 13.03-17(4), and 13.03-17(6)(e). The staff determined the additional data and information from the applicant in response to these RAIs to be acceptable. Therefore, the staff considers these RAIs to be resolved and closed. In addition, the applicant clarified and added textual revisions to the ETE report in response to RAIs 13.03-16(c), 13.03-17(4), and 13.03-17(5). The staff determined these clarifications and revisions to be acceptable. Therefore, the staff considers these RAIs to be resolved and closed. The applicant also corrected and revised the ETE report in response to RAIs 13.03-12(3), 13.03-15(2)(a), 13.03-12(1), 13.03 17(1), and 13.03-17(2)(b). The staff determined these revisions to be acceptable. Therefore, the staff considers these RAIs to be resolved and closed. The staff determined that the description of the methods used to estimate the evacuation times conforms to the guidance in Section IV, “Analysis of Evacuation Times,” of Appendix 4 to NUREG–0654/FEMA-REP-1 and is thus acceptable.

13.3C.18.6 Other Requirements

Technical Information in the ETE Report: [Section V of Appendix 4] Section 12, “Confirmation Times,” of the ETE report Revision 3 suggests a procedure to confirm that the evacuation process is effective, in the sense that the public is complying with the advisory to evacuate. The suggested procedure employs a stratified random sample and a telephone survey. Estimates indicate that this process could be completed within approximately three to four hours of the advisory to evacuate.

The development of the ETE report was coordinated with emergency planners from the State of Texas and Matagorda County who are involved in the emergency response for the site. The staff issued RAI 13.03-18(2), requesting the applicant to address the review of the ETE report by state and local organizations involved with the emergency response and to indicate whether their comments are included in the ETE report. In its response to RAI 13.03-18(2), dated August 27, 2008 (ML082490086), the applicant stated that local organizations involved with the EP effort in Matagorda County have reviewed and commented on the entire ETE report. Its comments that are incorporated into the ETE report were agreed to by the STP, the contractor responsible for preparing the ETE report, and the County Emergency Coordinator.

Technical Evaluation: [Section V of Appendix 4] The applicant estimated the time required to confirm the evacuation. In addition, the applicant coordinated the development of the ETE report with the emergency planners from the State of Texas and Matagorda County who are involved in responding to an emergency on the site. The applicant's response to RAI 13.03-18(2), clarified confirmation times and the involvement of State and local officials to implement the confirmation process. The staff determined that the applicant's clarifications in response to this RAI are acceptable. Therefore, the staff considers RAI 13.03-18(2) to be resolved and closed. The staff determined that the description of the time and procedure to confirm the evacuation is acceptable because it conforms to the guidance in Section V, "Other Requirements," of Appendix 4 to NUREG–0654/FEMA-REP-1.

In RAI 13.03-78, the staff requested the applicant to address the frequency or administrative method of updating the ETE analysis. In its response to this RAI dated February 13, 2013 (ML13050A056), the applicant proposed a revision to the Emergency Plan to review the ETE annually in accordance with emergency preparedness procedures. The staff confirmed that the STP COL application Revision 9 include the proposed changes. Therefore, the staff considers RAI 13.03-78 to be resolved and closed.

In RAI 13.03-79, the staff requested the applicant to address the requirement in 10 CFR 50 Appendix E Section IV.7, that a review of any change in the population of its EPZ be completed at least 365 days prior to a scheduled fuel load. In its response to this RAI dated February 13, 2013 (ML13050A056), the applicant proposed EP-ITAAC 11.1 be added to COL application Part 9, Section 4. The staff determined that this proposed ITAAC adequately addressed RAI 13.03-79. The staff determined the proposed ITAAC 11.1 identified as ITAAC 10.2 in Revision 9 of the COL application acceptable. Therefore, the staff considers RAI 13.03-79 to be resolved and closed.

13.3C.18.7 Conclusion

On the basis of the evaluation of the ETE Report, "South Texas Project Development of Evacuation Time Estimates," dated July 2009 and as described above, staff concluded that the ETE report is consistent with the guidance in Appendix 4 to NUREG-0654/FEMA-REP-1. Therefore, the ETE report is acceptable and meets the applicable requirements of 10 CFR Part 50, Appendix E, Section IV.

13.3C.19 Emergency Planning Inspections, Tests, Analyses, and Acceptance Criteria (EP-ITAAC)

The applicant is proposing EP-ITAAC to address those elements of the STP, Units 3 and 4, Emergency Plan Revision 6 that cannot be reasonably addressed before construction of the plant.

13.3C.19.1 Regulatory Basis

The staff considered the following regulatory requirement and guidance in the evaluation of the information in the COL application related to the EP-ITAAC:

- 10 CFR 52.80(a) requires a COL application to include those inspections, tests, and analyses applicable to EP that the licensee shall perform, and the acceptance criteria that are necessary and sufficient to provide reasonable assurance that if the inspections, tests, analyses are performed, and the acceptance criteria are met, the facility has been

constructed and will be operated in conformity with the COL, the provisions of the Atomic Emergency Act of 1954, as amended, and the Commission rules and regulations.

- NUREG–0800 Section 14.3, Table 14.3.10-1, "Emergency Planning - Generic Inspections, Tests, and Acceptance Criteria (EP-ITAAC)."

13.3C.19.2 EP-ITAAC

Technical Information in the Application

Section 2.17 of Part 2, Tier 1 of the COL application Revision 12 incorporates by reference all tables in Section 2.17 of the certified ABWR DCD Revision 4, referenced in 10 CFR Part 52, Appendix A, without departures or supplements. Table 2.17.1, "Emergency Response Facilities," of the DCD Tier 1, contains five EP-ITAAC related to the location and size of the TSC; the location of the OSC, TSC, and OSC voice communications; and plant parameter displays in the TSC.

Additional EP-ITAAC are proposed for STP, Units 3 and 4, are in Chapter 4 of Part 9, of the COL application. Table 4.0-1 in Part 9 contains the EP ITAAC for certain planning standards (Items 1 through 9 below) in 10 CFR 50.47(b) and requirements in 10 CFR Part 50, Appendix E, Section V (Item 10 below):

1. Assignment of Responsibility - Organizational Control
2. Onsite Emergency Response Organization
3. Emergency Classification System
4. Notification Methods and Procedures
5. Emergency Communications
6. Emergency Facilities and Equipment
7. Accident Assessment
8. Exercises and Drills
9. Radiological Emergency Response Training
10. Implementing Procedures

The staff issued RAIs 14.03.10-1 through 13, requesting the applicant to discuss deviations in Table 4.0-1 from the guidance in Table C.II.1-B1 of Appendix B to RG 1.206.

Also, in letter U7-C-NINA-NRC-120055, dated July 31, 2012 (ML12219A325), the applicant specified items to be incorporated into the EPIPs. The applicant committed in this letter that these items will be verified as complete as part of the ITAAC listed in Part 9, Table 4.0-1 Item 10.0 closure.

Technical Evaluation

The applicant has submitted the EP-ITAAC, as required by 10 CFR 52.80(a). In its responses to RAI 14.03.10-1 through RAI 14.03.10-13, dated October 13, 2008 (ML082900742), the applicant proposed revisions to Table 4.0-1 so that it is consistent with the guidance in Table 14.3.10-1, "Emergency Planning - Generic Inspections, Tests, and Acceptance Criteria (EP-ITAAC)," in Section 14.3 of NUREG–0800. Section 2.17 of Part 2, Tier 1of the COL application, incorporates by reference all tables in Section 2.17, of the ABWR DCD. Table 2.17.1, "Emergency Response Facilities," of the DCD Tier 1 contains five EP-ITAAC related to

the location and size of the TSC; the location of the OSC, TSC, and OSC voice communications; and plant parameter displays in the TSC.

The staff determined the responses to RAIs 14.03.10-1 through 14.03.10-13 acceptable because they are consistent with the guidance in Table 14.3.10-1. The staff verified that the applicant has updated Table 4.0-1 in Chapter 4 of Part 9 of the COL application, Revision 3 with the information in the responses to RAIs 14.03.10-1 through 14.03.10-13. Therefore, the staff considers RAIs 14.03.10-1 through 14.03.10-13 to be resolved and closed.

The applicant's commitment to incorporate into EPIPs the specific items in letter U7-C-NINA-NRC-120055, dated July 31, 2012, (ML12219A325) is addressed in FSAR Section 13.3.1.1 and documented in FSER Section 13.3.5.

13.3C.19.3 Conclusion

The staff's finding related to information incorporated by reference is in NUREG-1503. The staff reviewed the COL application and checked the referenced DCD. The staff's review confirmed that the applicant has addressed the required information related to the EP-ITAAC, and no outstanding information is expected to be addressed in the STP COL FSAR related to this section. Pursuant to 10 CFR 52.63(a)(5) and 10 CFR Part 52, Appendix A, Section VI.B.1, all nuclear safety issues relating to the EP-ITAAC that were incorporated by reference have been resolved.

In addition, the staff compared the additional information in the COL application to the relevant NRC regulations and the guidance in Section 14.3 of NUREG–0800. The staff's review concluded that the applicant has provided sufficient information, as required by 10 CFR 52.80(a). In Part 9 of the COL application, Table 4.0-1 included the proposed inspections, tests, and analyses that the licensee shall perform, and the acceptance criteria that are necessary and sufficient to provide reasonable assurance that if the inspections, tests, and analyses are performed and the acceptance criteria are met, the facility has been constructed and will be operated in conformity with the license, the provisions of the Atomic Energy Act as amended, and NRC's rules and regulations.

13.4 Review and Audit

13.4.1 Introduction

This section of the FSAR addresses the provisions for conducting an independent review of plant operations.

13.4.2 Summary of Application

Section 13.4 of the STP, Units 3 and 4, COL FSAR Revision 12 incorporates by reference Section 13.4 of the certified ABWR DCD Revision 4, referenced in 10 CFR Part 52, Appendix A. In addition, in FSAR Section 13.4, the applicant provided the following:

COL License Information Item

- COL License Information Item 13.2a Review and Audit

This COL license information item directs the applicant to provide a plan for conducting independent reviews of plant operations, and for the independent assessment of activities for safety enhancement in accordance with TMI Action Item I.B1.2, and 10 CFR 50.40(b) as it relates to technical qualification requirements. The applicant stated that Appendix B to NUREG–0933 indicates that TMI Action Item I.B.1.2, which relates to an independent safety engineering group, is not a residual generic safety issue that is applicable to operating and future reactor plants. The applicant added that it does not maintain an independent safety engineering group.

13.4.3 Regulatory Basis

The relevant requirements of the Commission regulations for an independent review and audit, and the associated acceptance criteria, are in accordance with 10 CFR 50.40(b) as it relates to the technical qualification requirements and TMI Action Item I.B.1.2.

13.4.4 Technical Evaluation

As documented in NUREG–1503, the staff determined that review and audit information are outside the scope of the ABWR standard plant design. No information is provided in Section 13.4 of the DCD other than a COL information item, and the staff concluded that the proposed COL information item is acceptable. The staff reviewed Section 13.4 of the STP, Units 3 and 4, COL FSAR and checked the referenced ABWR DCD to ensure that the combination of the information in the COL FSAR and the information in the ABWR DCD appropriately represents the complete scope of information relating to this review topic.[1] The staff's review confirmed that the information in the application addresses the required information relating to the review and audit.

The staff reviewed the following information in the COL FSAR:

COL License Information Item

- COL License Information Item 13.2a Review and Audit

The applicant stated that Appendix B to NUREG–0933 indicates that TMI Action Item I.B.1.2—regarding an independent safety engineering group—is not a residual generic safety issue that is applicable to operating and future reactor plants and the applicant does not maintain an independent safety engineering group.

Appendix B to NUREG–0933 does not list TMI Action Item I.B as a required generic safety issue item applicable to operating or future plants. In addition, as evaluated in Section 13.1 of this SER, the applicant has provided acceptable information regarding technical qualification requirements as specified in 10 CFR 50.40(b). Therefore, staff determined the applicant's submittal consistent with the guidance in NUREG–0933 and 10 CFR 50.40(b). COL License Information Item 13.2a is therefore resolved and closed.

13.4.5 Post Combined License Activities

There are no post COL activities related to this section.

[1] See *"Finality of Referenced NRC Approvals"* in SER Section 1.1.3, for a discussion on the staff's review related to verification of the scope of information to be included in a COL application that references a design certification.

13.4.6 Conclusion

The staff reviewed the application and checked the referenced DCD. The staff's review confirmed that the applicant has addressed the required information, and no outstanding information is expected to be addressed in the COL FSAR related to this section. The staff's review confirmed that the applicant has adequately addressed the COL license information in accordance with the guidance in NUREG–0933.

13.4S Operational Program Implementation

13.4S.1 Introduction

This section of the FSAR addresses the operational programs described in NRC guidance SECY-05-0197, "Review of Operational Programs in a Combined License Application and Generic Emergency Planning Inspections, Tests, Analyses, and Acceptance Criteria." The section includes a description of the programs and the proposed implementation milestones for each program.

13.4S.2 Summary of Application

Section 13.4S of the STP, Units 3 and 4, COL FSAR provides a description of and the proposed implementation milestones for each operational program, in compliance with the guidance of RG 1.206, Regulatory Position C.I.13.4. The applicant provided this information in FSAR Table 13.4S-1, which lists each operational program, the regulatory requirement for the program, the associated implementation milestone(s), and the section of the FSAR that described the operational program.

13.4S.3 Regulatory Basis

The relevant requirements of the Commission regulations for the operational program implementation, and the associated acceptance criteria, are in Section 13.4 of NUREG-0800.

The regulatory basis of the operational programs described in Section 13.4S of this application is identified in the individual chapters of this SER that address the evaluations of the specific operational programs, as clarified by the regulatory guidance in SECY-05-0197 and RG 1.206.

13.4S.4 Technical Evaluation

The staff reviewed Section 13.4S of the STP, Units 3 and 4, COL FSAR to ensure that the information in the COL FSAR appropriately represents the complete scope of information relating to this review topic.[1] The staff's review confirmed that the information in the application addresses the required information relating to the implementation of operational programs.

In RAI 13.03-81, the staff requested the applicant to explain the administrative process that will ensure consistency between the proposed Emergency Plan for STP, Units 3 and 4, and the existing Emergency Plan for STP, Units 1 and 2. In its response to this RAI dated February 13, 2013 (ML13050A056), the applicant added an additional implementation milestone to FSAR

[1] See *"Finality of Referenced NRC Approvals"* in SER Section 1.1.3, for a discussion on the staff's review related to verification of the scope of information to be included in a COL application that references a design certification.

Table 13.4S-1 to review the respective emergency plans and reconcile any differences, in accordance with approved processes, within 270 days before the initial fuel load.

The staff confirmed that the applicant's response to RAI 13.03-81 has been incorporated into FSAR Revision 9 Table 13.4S-1. Therefore, the staff considers RAI 13.03-81 to be resolved and closed.

The staff reviewed FSAR Table 13.4S-1 and determined that the applicant has identified the operational programs required by NRC regulations and has provided a description of the proposed implementation milestones for each program. The technical evaluation of the operational programs ensures that the applicant has fully described the programs and their associated implementation milestones. Each program is evaluated in the respective section of this SER.

In FSAR Table 13.4S-1, the applicant identified the implementation milestones for each operational program. These implementation milestones specify the activities to be completed following the issuance of the COL. The implementation of each operational program will be evaluated by staff according to the respective implementation milestone. Operational program implementation and the implementation schedule will be controlled by license conditions. The subject license conditions are in Section 13.4S.5 of this SER

13.4S.5 Post Combined License Activities

The staff proposes the following license conditions for the operational programs identified in FSAR Table 13.4S-1:

13.4S-1: Operational Program Implementation

The licensee shall implement the programs or portions of programs identified in FSAR Table 13.4S-1, and whose implementation requirements are specified as license conditions, on or before the associated milestones in FSAR Table 13.4S-1.

13.4S-2: Operational Program Implementation Schedule

No later than 12 months after issuance of the COL, the licensee shall submit to the Director of the Office of New Reactors, or the Director's designee, a schedule for completing the milestones set forth in FSAR Table 13.4S-1. The schedule shall be updated every 6 months until 12 months before scheduled fuel loading, and every month thereafter until all the milestones have been completed

13.4S.6 Conclusion

The staff reviewed Section 13.4S of the STP, Units 3 and 4, COL FSAR and checked the referenced DCD. The staff's review confirmed that the applicant has addressed the relevant information, and no outstanding information is expected to be addressed in the COL FSAR related to this section.

13.5 Plant Procedures

13.5.1 Introduction

This section of the FSAR addresses the administrative and operating procedures the applicant uses to ensure that routine operating, off-normal, and emergency activities are conducted in a safe manner. This section briefly described the nature and content of the plant procedures and includes a schedule for preparing administrative and operating procedures. This description of the procedures delineates the functional position for revising and approving procedures before their implementation. The procedures will be inspected as part of the construction inspection program.

13.5.2 Summary of Application

Section 13.5 of the STP, Units 3 and 4, COL FSAR Revision 12 incorporates by reference Section 13.5 of the certified ABWR DCD Revision 4, referenced in 10 CFR Part 52, Appendix A. Section 13.5 also incorporates by reference Section 13.5 of the STP Nuclear Operating Company application to amend the design certification rule for the U.S. ABWR, "ABWR STP Aircraft Impact Assessment (AIA) Amendment," Revision 3, dated September 2010, (the AIA Amendment). On December 16, 2011, the AIA Amendment was certified by a final rule amending 10 CFR Part 52, Appendix A (76 FR 78096). In addition, in FSAR Section 13.5, the applicant provided the following:

COL License Information Item

- COL License Information Item 13.3 Plant Operating Procedures Development Plan

The applicant provided supplemental information to address the plant operating procedures development plan.

- COL License Information Item 13.4 Emergency Procedures Development

The applicant provided supplemental information to address the emergency procedures development plan.

- COL License Information Item 13.5 Implementation of the Plan

The applicant provided supplemental information to address the implementation of the plan.

- COL License Information Item 13.6 Procedures Included in Scope Plan

The applicant provided supplemental information to address the procedures included in the scope plan.

13.5.3 Regulatory Basis

The relevant requirements of the Commission regulations for the plant procedures, and the associated acceptance criteria, are in Section 13.5.1 and Subsection 13.5.2.1 of NUREG–0800. The regulatory basis of the AIA Amendment information incorporated by reference is in NUREG–1948, "The STP Nuclear Operating Company Amendment to the Advanced Boiling Water Reactor (ABWR) Design Certification," dated October 2010, (the SER related to the AIA

Amendment). On December 16, 2011, the AIA Amendment was certified by a final rule amending 10 CFR Part 52, Appendix A (76 FR 78096).

The relevant requirements for reviewing COL License Information Item 13.3 regarding plant operating procedures are based on: (1) meeting the requirements of methods and criteria described in 10 CFR 52.79(a)(14), (26), (29)(i), (29)(ii), (33), and (34), and in TMI Action Plan Items I.C.1 and I.C.9; and (2) meeting the guidance of NUREG–0800, Subsection 13.5.2.1. The review of COL License Information Item 13.4 relating to the development of emergency procedures is based on meeting the requirements of 10 CFR 52.79(a)(14), (26), (29)(i), (29)(ii), (33), and (34),and the guidance of NUREG–0800, Subsection 13.5.2.1.

The relevant requirements for reviewing COL License Information Item 13.5 related to implementation of the plan are based on the following:

- Meeting the requirements of 10 CFR 52.79(a)(14), (26), (29)(i), (29)(ii), (33), and (34).
- Meeting the TMI Action Plan requirements described in NUREG–0737 and Supplement 1 to NUREG–0737.
- The elements described in ANSI 18.7/ANS-3.2 or a subsequent NRC-approved version of ANSI/ANS-3.2.
- The procedures specified in the Human Factors Verification and Validation (V&V) Implementation Plan described in Article VII of Table 18E-1.
- The plant procedures in accordance with the provisions of TMI Action Plan item I.C.5.
- The guidance of NUREG–0800, Subsections 13.5.1.1 and 13.5.2.1.

The relevant requirements for reviewing COL License Information Item 13.6 related to the procedures included in the scope of the plan are based on: (1) meeting the requirements of the procedures in Section A3, Section A5, and Section A10 of ANSI/ANS-3.2; and (2) meeting the guidance of NUREG–0800, Subsections 13.5.1.1 and 13.5.2.1.

13.5.4 Technical Evaluation

The staff reviewed Section 13.5 of the STP, Units 3 and 4, COL FSAR and checked the referenced ABWR DCD and the Amendment to the DCD. This section of the ABWR DCD contains detailed COL information items.

The staff performed the review in accordance with the requirements established in 10 CFR 52.79(a)(14), (26), (29)(i), (29)(ii), (33), and (34), and the guidance in Section 13.5 of NUREG–0800.

The staff reviewed the following information in the COL FSAR:

COL License Information Items

- COL License Information Item 13.3 Plant Operating Procedures Development Plan

As specified in COL License Information Item 13.3 and in FSAR Subsection 13.5.3.1, "Plant Operating Procedures Development Plan," the applicant described the content of and the process for the development of plant operating procedures, which are to be in accordance with TMI Items I.C.1 and I.C.9. In NUREG–0800, Subsection 13.5.2.1 states that the applicant is to provide descriptions of the content and the development process for operating procedures, which include meeting the requirements of TMI Action Plan Items I.C.1 and I.C.9 to control the implementation, maintenance, and revision of plant operating procedures.

The staff compared COL License Information Item 13.3 in the application to the applicable NRC regulations and acceptance criteria in Subsection 13.5.2.1 of NUREG–0800. The staff's review confirmed that the applicant has addressed the relevant information, and no outstanding information is expected to be addressed in the COL FSAR related to this section.

- COL License Information Item 13.4 Emergency Procedures Development Plan

As specified in COL License Information Item 13.4 and in FSAR Subsection 13.5.3.2, "Emergency Operating Procedures," the applicant described the content and the process of an emergency operating procedures (EOP) program, which will include a writer's guide, plant-specific technical guidelines (P-STGs), and the EOP training program description for the development of EOPs. The applicant stated that it would follow the NUREG–0800 criteria applicable to these items. In NUREG–0800, Subsection 13.5.2.1 states that the applicant is to provide descriptions of the content and the development process for EOPs including P-STGs, a writer's guide, and the EOP training program description.

The staff compared COL License Information Item 13.4 in the application to the applicable NRC regulations and acceptance criteria in Subsection 13.5.2.1 of NUREG–0800. The staff's review confirmed that the applicant has addressed the relevant information, and no outstanding information is expected to be addressed in the COL FSAR related to this section.

- COL License Information Item 13.5 Implementation of the Plan

As specified in COL License Information Item 13.5 and in FSAR Subsection 13.5.3.3, "Implementation of the Plan," the applicant identified and described the classifications of operating procedures. The applicant stated that it would follow the NUREG–0800 criteria applicable to the nature and content of these items. In NUREG–0800, Subsection 13.5.2.1 states that the applicant is to identify the classifications of operating procedures that may be used in the implementation of the operating procedures development plan.

Subsection 13.5.1.1.I of NUREG–0800 states, "the application should describe the nature and content of the procedures." STP, Units 3 and 4, FSAR Subsection 13.5.3.4.1 lists the required administrative procedures per NUREG–0800. However, FSAR Subsections 13.5.3.3.1(3) and (4) state that a review of existing STP procedures will be conducted and any necessary changes will be made to the existing procedures. The staff did not find these discussions clear as to what is needed and when; simply stating that the changes will be made in the FSAR does not meet the intent of NUREG–0800. Therefore, the staff issued RAI 13.05.01.01-1 requesting the applicant to clarify, revise, or explain how these FSAR subsections meet the intent in NUREG–0800, Subsection 13.5.1.1. In its response to this RAI dated July 21, 2009 (ML092050075), the applicant concurred with the staff and committed to revise FSAR Subsections 13.5.3.3.1(3), (4), and (5) to clarify the development of the administrative procedures by stating that administrative procedures will be developed based on experience,

and that these procedures will be consistent with NUREG–0800 guidelines. The staff determined that the response is acceptable. The staff confirmed that the applicant's proposed changes are in Revision 4 of the STP COL FSAR. Therefore, the staff considers RAI 13.05.01.01-1 to be resolved and closed.

The staff compared COL License Information Item 13.5 in the application to the applicable NRC regulations and acceptance criteria in Section 13.5.2.1 of NUREG–0800. The staff's review confirmed that the applicant has addressed the relevant information, and no outstanding information is expected to be addressed in the COL FSAR related to this section.

- COL License Information Item 13.6 Procedures Included in Scope Plan

As specified in COL License Information Item 13.6 and in FSAR Subsection 13.5.3.4, "Procedures Included in the Scope of Plan," the applicant described the scope of operating procedures that will extend to include the following: Administrative Procedures; Maintenance and Operating Procedures; Radiation Control Procedures; General Plant Procedures; System Operating Procedures; Alarm Response Procedures; Abnormal Operating Procedures; Calibration, Inspection, and Test Procedures; and Emergency Operating procedures. In NUREG–0800, Subsection 13.5.2.1 states that the applicant is to identify the scope of operating procedures that may be used in the implementation of the operating procedures development plan.

The staff compared COL License Information Item 13.6 in the application to the applicable NRC regulations and acceptance criteria in Subsection 13.5.2.1 of NUREG–0800. The staff's review confirmed that the applicant has addressed the relevant information, and no outstanding information is expected to be addressed in the COL FSAR related to this section.

13.5.5 Post Combined License Activities

There are no post COL activities related to this section.

13.5.6 Conclusion

The staff reviewed the application and checked the referenced DCD, and AIA Amendment. The staff's review confirmed that the applicant has addressed the required information, and no outstanding information is expected to be addressed in the COL FSAR related to this section. In addition, the staff compared STP, Units 3 and 4, FSAR Section 13.5 to the relevant NRC regulations and the guidance in Subsections 13.5.1.1 and 13.5.2.1 of NUREG–0800. The staff's review concluded that the applicant is in compliance with the NRC regulations. The staff also concluded that the applicant has adequately addressed COL License Information Items 13.3, 13.4, 13.5, and 13.6 in accordance with Subsection 13.5.1.1 and 13.5.2.1 of NUREG-0800; and the information is therefore acceptable.

The staff's review confirmed that the applicant has addressed the relevant information to satisfy the requirements of 10 CFR 52.79(a)(14), (26), (29)(i), (29)(ii), (33), and (34), as applicable, and no outstanding information is expected to be addressed in the COL FSAR related to this section.

13.6 Physical Security

13.6.1 Introduction

The combined license application for the STP, Units 3 and 4, described the COL applicant's Physical Protection Program, which is intended to meet the NRC regulations for the use of the design basis threat (DBT) to design safeguards systems to protect against acts of radiological sabotage, as stated in 10 CFR 73.1, "Purpose and Scope." The overall purpose of the applicant's physical protection program is to provide high assurance that activities involving special nuclear material are not inimical to common defense and security and do not constitute an unreasonable risk to public health and safety.

The Physical Protection Program ensures that the capabilities to detect, assess, interdict, and neutralize threats of radiological sabotage are maintained at all times. The applicant incorporates by reference the standard ABWR design. Part 8 of the COL application consists of the STP, Units 3 and 4, Physical Security Plan (PSP), Training and Qualification Plan (T&QP), Safeguards Contingency Plan (SCP) and an Interdiction Capability Evaluation (ICE). Section 13.6 of the STP, Units 3 and 4, COL FSAR described the Physical Protection Program and the physical protection systems that are not addressed within the scope of the standard ABWR design, for meeting the NRC performance and prescriptive requirements for physical protection stated in 10 CFR Part 73, "Physical Protection of Plants and Material." Due to security constraints, the staff's evaluation of the physical security protection program presented in this publicly-available SER does not include the same level of detail as the safeguards information version. Those persons with the correct access authorization and a need to know may view the safeguards information (SGI) version of the STP COL application, Section 13.6 of this SER, which is located in the NRC's Secure Local Area Network.

13.6.2 Summary of Application

Section 13.6 of the STP, Units 3 and 4, COL FSAR Revision 12 incorporates by reference Section 13.6 of the certified ABWR DCD Revision 4, Site Safety Analysis Report (SSAR) Chapter 13, Amendment 33; and SSAR Appendices 19C and 13.6.3. The staff's evaluation of the application in respect to FSAR Section 13.6.4, "Transportation Physical Security Plan," is in FSER Section 1.5S.5, "Receipt, Possession, and Use of Source, Byproduct, and Special Nuclear Material under 10 CFR Parts 30, 40 and 70."

Part 8, Safeguards/Security Plans

Part 8 of the COL application provided security plans, which consists of four parts—the PSP, T&QP, and SCP. The cyber security plan is also considered a part of the security plans, which is discussed in Section 13.8. The applicant provided ICE, Revision 3 to address COL License Information Item 13.6.3-3.

Proposed License Conditions

The STP, Units 3 and 4, application identifies three proposed license conditions that relate to physical security: (1) the license condition proposed for the implementation of the Operational Program milestones; (2) the license condition proposed for the maintenance of the PSP, T&QP, and SCP, while nuclear fuel remains onsite (in the protected area [PA]); and (3) the license condition proposed for the implementation of an Operational Program milestone for completing

the protective strategy procedure. These license conditions are listed in FSAR Table 13.4S-1 and are further discussed in SER Section 13.6.5.

13.6.3 Regulatory Basis

The regulatory basis of the information incorporated by reference is in NUREG-1503 and its supplements. In addition, the relevant requirements of the Commission regulations for the physical security, and the associated acceptance criteria, are summarized in Subsection 13.6.1 of NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition."

The applicable regulatory requirements for physical protection are as follows:

- 10 CFR 52.79(a)(35)(i) and (ii) require that information submitted for a COL describe how the applicant will meet the requirements of 10 CFR Part 73 and provide a description of the implementation of the PSP. In 10 CFR 52.79(a)(36)(i) through (iv), the application is required to include a SCP in accordance with the criteria set forth in Appendix C, "Nuclear Power Plant Safeguards Contingency Plans," to 10 CFR Part 73; the application is also required to include a T&QP in accordance with Appendix B, "General Criteria for Security Personnel," of 10 CFR Part 73. The provisions also require that the applicant provide a description of the implementation of the SCP and the T&QP; and the applicant is required to protect the PSP, T&QP and SCP in accordance with the requirements of 10 CFR 73.21, "Protection of Safeguards Information: Performance Requirements."

- 10 CFR Part 73 includes performance-based and prescriptive regulatory requirements that, when adequately met and implemented, provide a high level of assurance that activities involving special nuclear material are not inimical to common defense and security and do not constitute an unreasonable risk to public health and safety. A COL applicant must describe how the regulatory requirements of 10 CFR Part 73 that are applicable to nuclear power plants will be met.

- 10 CFR 52.79(a)(41) requires an evaluation of the facility against the SRP in effect six months before the docket date of the application. The evaluation required by this section shall include an identification and description of all differences in design features, analytical techniques, and procedural measures proposed for a facility and those corresponding features, techniques, and measures given in the SRP acceptance criteria. Where a difference exists, the evaluation shall discuss how the proposed alternative provides an acceptable method of complying with the Commission's regulations, or portions thereof, that underlie the corresponding SRP acceptance criteria. The SRP is not a substitute for the regulations, and compliance is not a requirement.

The staff used Revision 1 of Subsection 13.6.1 in NUREG–0800 to complete the physical security COL review.

Regulatory guidance documents, technical reports, and accepted industry codes and standards that an applicant may apply to meet regulatory requirements include, but are not limited to, the following:

- RG 5.7, Revision 1, "Entry/Exit Control for Protected Areas, Vital Areas, and Material Access Areas."

- RG 5.12, “General Use of Locks in the Protection and Control of Facilities and Special Nuclear Materials.”
- RG 5.44, Revision 3, “Perimeter Intrusion Alarm Systems.”
- RG 5.62, Revision 1, “Reporting of Safeguards Events.”
- RG 5.65, “Vital Area Access Controls, Protection of Physical Protection System Equipment and Key and Lock Controls.”
- RG 5.66, Revision 1, “Access Authorization Programs For Nuclear Power Plants.”
- RG 5.68, “Protection Against Malevolent Use of Vehicles at Nuclear Power Plants.”
- RG 5.74, “Managing the Safety/Security Interface.”
- RG 5.75, “Training and Qualification of Security Personnel at Nuclear Power Reactor Facilities.”
- RG 5.77, “Insider Mitigation Program,”
- NRC letter dated April 9, 2009, “NRC Staff Review of Nuclear Energy Institute 03–12, ‘Template for Security Plan’, Training and Qualification, Safeguards Contingency Plan, [and Independent Spent Fuel Storage Installation Security Program], (Revision 6)” (Agencywide Documents Access and Management System (ADAMS) Accession No. ML090920528).
- SECY-05-0197, “Review of Operational Programs in a Combined License Application and Generic Emergency Planning Inspections, Tests, Analyses, and Acceptance Criteria,” October 28, 2005 (ADAMS Accession No. ML052770257).

The following documents contain security-related or SGI and are not publicly available:

- RG 5.69, “Guidance for the Application of Radiological Sabotage Design Basis Threat in the Design, Development, and Implementation of a Physical Security Protection Program that Meets 10 CFR 73.55 Requirements.”
- RG 5.76, “Physical Protection Programs at Nuclear Power Reactors.”
- NEI 03–12, Revision 6, “Template for the Security Plan, Training and Qualification Plan, Safeguards Contingency Plan, [and Independent Spent Fuel Installation Security Program].”
- NUREG/CR–6190, “Update of NUREG/CR–6190 Material to Reflect Postulated Threat Requirements.”

13.6.4 Technical Evaluation

As documented in NUREG–1503, the staff reviewed and approved Section 13.6 of the certified ABWR DCD. The staff reviewed Section 13.6 of the STP COL FSAR and checked the referenced ABWR DCD to ensure that the combination of the COL FSAR and the information in

the ABWR DCD represents the complete scope of information relating to this review topic.[1] The staff's review confirmed that the information in the application and the information incorporated by reference address the required information relating to physical security.

The staff reviewed the following information in the COL application:

13.6.4.1 *Physical Security Plan*

The provisions of 10 CFR 52.79(a)(35) require:

(i) A PSP, describing how the applicant will meet the requirements of 10 CFR Part 73 (and 10 CFR Part 11, if applicable, including the identification and description of jobs as required by 10 CFR 11.11(a) of this chapter, at the proposed facility). The plan must list tests, inspections, audits, and other means to be used to demonstrate compliance with the requirements of 10 CFR Parts 11 and 73, if applicable; and

(ii) A description of the implementation of the PSP.

The provisions of 10 CFR 52.79(a)(36) require:

(i) An SCP in accordance with the criteria set forth in Appendix C to 10 CFR Part 73. The safeguards contingency plan shall include plans for dealing with threats, thefts, and radiological sabotage, as defined in 10 CFR Part 73 of this chapter, relating to the special nuclear material and nuclear facilities licensed under this chapter and in the applicant's possession and control. Each application for this type of license shall include the information in the applicant's SCP. (Implementing procedures required for this plan need not be submitted for approval);

(ii) A T&QP in accordance with the criteria set forth in Appendix B to 10 CFR Part 73;

(iii) A cyber security plan (CSP) in accordance with the criteria set forth in 10 CFR 73.54 of this chapter;

(iv) A description of the implementation of the SCP, T&QP, and CSP; and

(v) Each applicant who prepares a PSP, an SCP, a T&QP, or a CSP, shall protect the plans and other related Safeguards Information against unauthorized disclosure in accordance with the requirements of 10 CFR 73.21 of this chapter.

The provisions of 10 CFR 52.79(a)(44) require a description of the Fitness for Duty (FFD) program required by 10 CFR Part 26, "Fitness for Duty Program," and its implementation.

In Part 8 of the COL application for STP, Units 3 and 4, the applicant has submitted a PSP, a T&QP, and an SCP that meet the requirements of 10 CFR 52.79(a)(35), (36), and (44). Part 2 of FSAR Chapter 13, Section 13.6, references Part 8 of the COL application described the

[1] See *"Finality of Referenced NRC Approvals"* in SER Section 1.1.3, for a discussion on the staff's review related to verification of the scope of information to be included in a COL application that references a design certification.

licensing basis for establishing a Physical Protection Program; the design for a physical protection system; and a security organization that will have as its objective to provide a high assurance that activities involving special nuclear materials are not inimical to common defense and security and do not constitute an unreasonable risk to public health and safety. The STP submitted PSP references 10 CFR 50.34(c)(2) and (d)(2). The correct references should be 10 CFR 52.79(a)(35) and (36). It is noted that this is a template error and both references require that the same criteria be met.

Security plans must describe how the applicant will implement Commission requirements and those site-specific conditions that affect implementation, as required by 10 CFR 73.55(c)(1)(i) and (ii).

The provisions of 10 CFR 73.55(c) and (d) establish, maintain, and implement a PSP to meet the requirements of 10 CFR 73.55 and 10 CFR Part 73, Appendices B and C. The applicant must show the establishment and maintenance of a security organization, the use of security equipment and technology, the training and qualification of security personnel, the implementation of predetermined response plans and strategies, and the protection of digital computer and communication systems and networks. The applicant must have a management system for the development, implementation, revision, and oversight of procedures for implementing security. The approval process for implementing security procedures will be documented.

The staff reviewed the applicant's description in PSP Section 1 of the implementation of the site-specific Physical Protection Program, in accordance with Commission regulations and NUREG–0800 acceptance criteria. Because the applicant's description in the PSP is consistent with the acceptance criteria in Subsection 13.6.1 of NUREG–0800, the staff determined that the description in the PSP meets the requirements of 10 CFR 73.55(c) and (d) and is therefore acceptable.

13.6.4.1.1 Introduction and Physical Facility Layout

The provisions of 10 CFR 73.55(c)(2) establish the requirements for ensuring the protection of SGI against an unauthorized disclosure, in accordance with 10 CFR 73.21. The applicant's submittal acknowledges that the PSP, T&QP, and SCP discuss specific features of the physical security system or response procedures and are considered SGI.

Section 1 of the PSP described the licensee's commitment to satisfying 10 CFR 50.34(c) and (d) and 10 CFR Part 73 by submitting a PSP and by controlling the PSP and appendices as SGI, in accordance with 10 CFR 73.21.

The provisions of 10 CFR Part 73, Appendix C, Section II, Paragraph B.3.b, "Physical Layout," require a description of the physical layout of the site.

Section 1.1 of the PSP described the location, site layout, and facility configuration. The PSP described the physical structures and their locations on the site; the PA; and the site in relation to nearby towns, roads, and other environmental features important to the coordination of response operations. The plant layout includes the identification of main and alternate entry routes for law enforcement assistance forces and the location of control points for marshalling and coordinating response activities.

The staff issued RAI 13.06.01-3, requesting the applicant to describe how features such as railroad/spur, airports, hazardous material facilities, and environmental features (e.g., topography) were considered in developing the protective strategy.

In its response to RAI 13.06.01-3, dated June 16, 2010 (ML101690153), the applicant provided clarification of configuration considerations for the coordination of response activities if requested by the site.

The staff reviewed the technical information, and determined the applicant's response to RAI 13.06.01-3 to be acceptable, because it sufficiently clarified the staff's concern, and the description in the security plan meets the requirements of 10 CFR Part 73, Appendix C, Section II, Paragraph B.3.b. Therefore, the staff considers RAI 13.06.01-3 to be resolved and closed.

In RAI 13.06.01-6**,** in addition to a written site layout description, the staff requested the applicant to provide larger scale drawings with details of specific features and other nonsecurity features located in the vicinity of the site to address the requirements of 10 CFR Part 73, Appendix C, Section II, Paragraph B.3.b. In its response to RAI 13.06.01-6, dated July 8, 2010 (ML101930137), the applicant provided revised PSP drawings. The staff reviewed the applicant's response to RAI 13.06.01-6 which included the drawings and the additional details concerning features located on and adjacent to the site and determined that the provided information meets the requirements of 10 CFR Part 73, Appendix C, Section II, Paragraph B.3.b. The staff confirmed that the drawings were incorporated into the PSP and determined the applicant's PSP drawings to be acceptable. Therefore, the staff considers RAI 13.06.01-6 to be resolved and closed.

In addition, in FSAR Section 2.0S, "Site Characteristics," the applicant included a site area map and general plant and site descriptions, including details of the 16.1- to 80.5-km (10- to 50-mi) radius of the geographical area of the STP, Units 3 and 4, site. FSAR Chapter 1 references the ABWR design certification for the principal design and operating characteristics of the STP, Units 3 and 4, design and construction. Part 1, "General Information," of the COL application identifies the name of the applicant and principal business locations.

The staff reviewed the physical layout of the facility in Section 1.0 of the PSP and supplemented this information with the information in the COL FSAR. The staff determined that the applicant has described site-specific conditions that affect the applicant's capability to satisfy the requirements of a comprehensive PSP. The applicant has also adequately described the physical structures and their locations on the site and the relation of the site to nearby towns, roads, and other environmental features important to the effective coordination of response operations. The applicant described the main and alternate entry routes for law enforcement assistance and the location of control points for marshaling and coordinating response activities in the site-specific law enforcement response plan. The staff concluded that the applicant's security plan has met the requirements for the content of a PSP, as stated above. Therefore, the staff determined the physical layout described in the PSP and the STP COL FSAR to be acceptable.

13.6.4.1.2 Performance Objectives

The provisions of 10 CFR 73.55(b)(1) require, in part, that the licensee shall establish and maintain a Physical Protection Program with an objective to provide "high assurance that

activities involving special nuclear material are not inimical to the common defense and security and do not constitute an unreasonable risk to the public health and safety." 10 CFR 73.55(b)(2) establishes, in part, the requirement to protect a nuclear power reactor against the design-basis threat of radiological sabotage, as described in 10 CFR 73.1. The provisions of 10 CFR 73.55(b)(3)(i) and 10 CFR 73.55(b)(3)(ii) require the applicant to establish a Physical Protection Program. The program must be designed to ensure the capabilities are maintained at all times to detect, assess, interdict, and neutralize threats up to and including the design-basis threat of radiological sabotage (as stated in 10 CFR 73.1); and to provide defense-in-depth, supporting processes, and implementing procedures that ensure the effectiveness of the Physical Protection Program.

Section 2 of the PSP outlines the applicant's plans for the establishment and maintenance of an onsite physical protection system, security organization, and integrated response capability. As part of the objective, the security program design incorporates supporting processes such that no single event can disable the security response capability because of defense-in-depth principles, including diversity and redundancy. The physical protection systems and programs described herein are designed to protect against the design-basis threat of radiological sabotage, in accordance with the requirements of 10 CFR 73.55(a) through (r) or equivalent measures that meet the same high assurance objectives provided by paragraphs (a) through (r). The applicant uses the Corrective Action Program to track, trend, correct, and prevent the recurrence of failures and deficiencies in the Physical Protection Program.

The staff reviewed the applicant's description in PSP Section 2 of the implementation of the site-specific Physical Protection Program, in accordance with Commission regulations and NUREG-0800 acceptance criteria. Because the applicant's description in the PSP is consistent with the acceptance criteria in Subsection 13.6.1 of NUREG–0800, the staff determined that the description in the PSP meets the requirements of 10 CFR 73.55(b) and is therefore acceptable.

13.6.4.1.3 Performance Evaluation Program

Requirements in 10 CFR 73.55(b)(4) through (b)(11), state that the applicant shall analyze and identify site-specific conditions and establish programs, plans, and procedures that address performance evaluations, access authorization, cyber security, insider mitigation, FFD, corrective actions, and operating procedures. Requirements in 10 CFR 73.55(b)(6) specifically prescribe that the applicant establish, maintain, and implement a Performance Evaluation Program in accordance with 10 CFR Part 73, Appendix B, for implementation of the plant's protective strategy.

As discussed in the T&QP, Section 3 of the PSP described the drills and exercises that will be used to assess the effectiveness of the contingency response plan and the effectiveness of the applicant's response strategy. Other assessment methods include formal and informal exercises or drills, self-assessments, and internal and external audits and evaluations.

The performance evaluation processes and criteria that assess the effectiveness of the security program, including adequate protection against radiological sabotage, will be established in the facility procedures and the deficiencies identified will be managed through the Corrective Action Program.

Section 3 of the PSP references Section 4 of the T&QP, which provided additional details related to the performance evaluation of security personnel in accordance with 10 CFR Part 73,

Appendix B, Section VI. Section 4 of the T&QP includes the requirements to conduct security force tactical drills and force-on-force exercises to evaluate the effectiveness of the security systems and the response performances of security personnel. In addition, Section 17 of the PSP described additional details regarding the applicant's processes for reviews, evaluations, and audits that will complement the Performance Evaluation Program.

The staff reviewed the applicant's description in PSP Section 3 of the implementation of the site-specific Physical Protection Program, in accordance with Commission regulations and NUREG–0800 acceptance criteria. Because the applicant's description in the PSP is consistent with the acceptance criteria in Subsection 13.6.1 of NUREG–0800, the staff determined that the description in the PSP meets the requirements of 10 CFR 73.55(b)(4) through (b)(11) and is therefore acceptable.

13.6.4.1.4 Establishment of a Security Organization

The provisions of 10 CFR 73.55(d) establish requirements to describe a security organization, including the management system for oversight of the Physical Protection Program. The security organization must be designed, staffed, trained, qualified, periodically re-qualified, and equipped to implement the Physical Protection Program as required by 10 CFR 73.55(b) and 10 CFR Part 73, Appendices B and C.

As explained below, Section 4 of the PSP described how the applicant will meet the requirements of 10 CFR 73.55(d)(1).

Security Organization Management

Section 4.1 of the PSP described the organization's management structure. The PSP establishes that the security organization is a critical component of the Physical Protection Program and is responsible for the effective application of engineered systems, technologies, programs, equipment, procedures, and personnel necessary to detect, assess, interdict, and neutralize threats up to and including the design-basis threat of radiological sabotage. The security organization may be proprietary, contracted, or other qualified personnel.

The PSP stated that the security organization will be staffed with appropriately trained and equipped personnel, in a command structure with administrative controls and procedures to provide a comprehensive response. Section 4.1 of the PSP also described the roles and responsibilities of the security organization. The PSP stated that at least one full-time member of the security management has the authority for command and control of all security operations and is onsite at all times. In addition, the security force implementing the security functions described in this section of the plan will meet the training qualification requirements that are described in the T&QP.

The staff issued RAI 13.06.01-4, requesting the applicant to address the requirements of 10 CFR 73.55(q)(3) regarding a contracted security force. In its response to RAI 13.06.01-4, dated June 16, 2010 (ML101690153), the applicant stated that the PSP will be revised to indicate that a contracted security force will be used onsite, and a written record of this contract will be retained at the site.

The staff reviewed the applicant's response and determined that it meets the requirements of 10 CFR 73.55(q)(3). The staff confirmed that the PSP was revised to reflect the use of a

contracted security force and determined the description to be acceptable. Therefore, the staff considers RAI 13.06.01-4 to be resolved and closed.

The staff issued RAI 13.06.01-5, requesting the applicant to address the requirements of 10 CFR Part 73 Appendix B, Section VI, Paragraph B.1.(b), for the job duties and responsibilities of the security training supervisor to ensure that security personnel are trained and qualified in accordance with the T&QP. In its response to RAI 13.06.01-5, dated May 10, 2010 (ML101380348), the applicant provided specific information regarding the duties and responsibilities of a security training supervisor. The staff reviewed the applicant's response to RAI 13.06.01-5 and determined that the description of the qualifications for a security training supervisor ensured that the requirements of 10 CFR Part 73 Appendix B, Section VI, Paragraph B.1.(b) are met. The response is therefore acceptable. Therefore, the staff considers RAI 13.06.01-5 to be resolved and closed.

The staff reviewed the applicant's description in PSP Sections 4.0 and 4.1 of the implementation of the site-specific Physical Protection Program, in accordance with Commission regulations and NUREG–0800 acceptance criteria. Because the applicant's description in the PSP is consistent with the acceptance criteria in Subsection 13.6.1 of NUREG–0800, the staff determined that the description meets the requirements of 10 CFR 73.55(d), and is therefore acceptable.

13.6.4.1.5 Qualification for Employment in Security

The requirements of 10 CFR 73.55(d)(3) state, in part, that the licensee may not permit any individual to implement any part of the Physical Protection Program unless the individual has been trained, equipped, and qualified to perform assigned duties and responsibilities in accordance with Appendix B to 10 CFR Part 73 and the licensee's T&QP.

Section 5 of the PSP stated that employment qualifications for members of the security force are delineated in the T&QP.

The staff reviewed the applicant's description in PSP Section 5 of the implementation of the site-specific Physical Protection Program in accordance with Commission regulations and NUREG–0800 acceptance criteria. Because the applicant's description in the PSP is consistent with the acceptance criteria in Subsection 13.6.1 of NUREG–0800, the staff determined that the description in the PSP meets the requirements of 10 CFR 73.55(d)(3) and is therefore acceptable.

13.6.4.1.6 Training of Facility Personnel

Consistent with the requirements in 10 CFR 73.55(d)(3),10 CFR 73.56, and 10 CFR Part 73, Appendix B, Section VI, Paragraph C.1, all personnel who are authorized to have unescorted access to the licensee's PA receive training, in part, to ensure that they understand their role in security and their responsibilities in the event of a security incident. Individuals assigned to perform security-related duties or responsibilities such as, but not limited to, material searches and vehicle escorts are trained and qualified in accordance with the T&QP to perform these duties and responsibilities. The training ensures that each individual has the minimum knowledge, skills, and abilities required for the effective performance of assigned duties and responsibilities.

Section 6 of the PSP described the training provided for all personnel with unescorted access to the applicant's PA.

The staff reviewed the applicant's description in PSP Section 6 of the implementation of the site-specific Physical Protection Program in accordance with Commission regulations and NUREG–0800 acceptance criteria. Because the applicant's description in the PSP is consistent with the acceptance criteria in Subsection 13.6.1 of NUREG–0800, the staff determined that the description in the PSP meets the requirements of 10 CFR 73.56 and 10 CFR Part 73, Appendix B, and is therefore acceptable.

13.6.4.1.7 Security Personnel Training

The provisions of 10 CFR 73.55(d) require all security personnel to be trained and qualified in accordance with 10 CFR Part 73, Appendix B, Section VI, before performing their duties.

Section 7 of the PSP stated that all security personnel are trained and qualified to perform tasks at levels that are specific for their assignments, in accordance with the licensee's T&QP.

The staff reviewed the applicant's description in PSP Section 7 of the implementation of the site-specific Physical Protection Program, in accordance with Commission regulations and NUREG–0800 acceptance criteria. Because the applicant's description in the PSP is consistent with the acceptance criteria in Subsection 13.6.1 of NUREG–0800, the staff determined that the description in the PSP meets the requirements of 10 CFR 73.55(d) and is therefore acceptable. The staff's review of the licensee's T&QP is in Subsection 13.6.4.2 of this SER.

13.6.4.1.8 Local Law Enforcement Liaison

The following requirement is stated in 10 CFR 73.55(k)(9): "To the extent practicable, licensees shall document and maintain current agreements with applicable law enforcement agencies to include estimated response times and capabilities." In addition, 10 CFR 73.55(m)(2) requires, in part, that an evaluation of the effectiveness of the physical protection system include an audit of response commitments by local, State, and Federal law enforcement authorities.

Section 8 of the PSP provided a detailed discussion of the ongoing relationship with local law enforcement agencies (LLEAs). The plans addressing responses, communication methodologies and protocols, command and control structures and marshaling locations are in the operations procedures, the emergency plan procedures, and the site-specific law enforcement response plan. The law enforcement response plan is reviewed biennially, concurrent with the PSP effectiveness review.

The staff reviewed the applicant's description in PSP Section 8 of the implementation of the site-specific Physical Protection Program, in accordance with Commission regulations and NUREG–0800 acceptance criteria. Because the applicant's description in the PSP is consistent with the acceptance criteria in Subsection 13.6.1 of NUREG–0800, the staff determined that the description in the PSP meets the requirements of 10 CFR 73.55(k)(9) and 10 CFR 73.55(m)(2) and is therefore acceptable.

13.6.4.1.9 Security Personnel Equipment

The requirements of 10 CFR 73.55(d)(3) state, in part, that the licensee may not permit any individual to implement any part of the Physical Protection Program unless the individual has

been trained, equipped, and qualified in accordance with 10 CFR Part 73, Appendix B and the T&QP. The provisions in 10 CFR Part 73, Appendix B, Section VI, Paragraph G.2.(a) state, in part, that the applicant must ensure that each individual is equipped with or has ready access to all personal equipment or devices required for the effective implementation of the NRC-approved security plans, the applicant's protective strategy, and implementing procedures. Section VI, Paragraphs G.2.(b) and G.2.(c) of 10 CFR Part 73, Appendix B delineate the minimum equipment requirements for security personnel and armed response personnel.

Section 9 of the PSP described the equipment including armament, ammunition, and communication equipment provided to security personnel in order to ensure that security personnel are capable of performing the function stated in the Commission-approved security plans, in the applicant's protective strategy, and in the implementing procedures.

The staff has reviewed the applicant's description in PSP Section 9 for the implementation of the site-specific physical protection program in accordance with Commission regulations and NUREG-0800 acceptance criteria. Because the applicant's description in the PSP is consistent with the acceptance criteria in NUREG-0800, Subsection 13.6.1, the staff determined that the description provided in the PSP meets the requirements of 10 CFR 73.55(d)(3) and 10 CFR Part 73, Appendix B, Section VI, ParagraphG.2, and is therefore acceptable.

13.6.4.1.10 Work Hour Controls

The provisions of 10 CFR Part 26, "Fitness for Duty Programs," Subpart I, "Managing Fatigue," establish the requirements for managing fatigue. The provisions of 10 CFR 26.205 establish requirements for work hours. The provisions of 10 CFR 26.205(a) require that any individual who performs duties identified in 10 CFR 26.4(a)(1) through (a)(5) shall be subject to the requirements of Section 26.205(a) "Individuals subject to work hours controls."

Section 10 of the PSP described how the applicant will implement work hour controls consistent with 10 CFR Part 26, Subpart I, and the site procedures shall describe performance objectives and implementing procedures.

The staff's review of the FFD Program is in Section 13.7 of this SER.

13.6.4.1.11 Physical Barriers

The following requirements are established in 10 CFR 73.55(e):

> Each licensee shall identify and analyze site-specific conditions to determine the specific use, type, function, and placement of physical barriers needed to satisfy the physical protection program design requirements of 10 CFR 73.55(b).
>
> (1) The licensee shall:
>
> (i) "Design, construct, install and maintain physical barriers as necessary to control access into facility areas for which access must be controlled or denied to satisfy the physical protection program design requirements of paragraph (b) of this section."

10 CFR 73.55(b) states that the physical protection program must: "Provide defense-in-depth through the integrations of systems, technologies, programs, equipment, supporting processes,

and implementing procedures as needed to ensure the effectiveness of the physical protection program."

Section 11 of the PSP described how the applicant will implement the program for physical barriers, in accordance with the performance objectives and requirements of 10 CFR 73.55(b).

Vehicle Barriers

PSP Sections 11.2.1 and 11.2.2, establish and maintain vehicle control measures, as necessary, to protect against the design-basis threat of radiological sabotage. These measures are consistent with the Physical Protection Program design requirements of 10 CFR 73.55(b)(3)(ii) and 10 CFR 73.55(e)(10)(i), and are in accordance with the site-specific analysis. The PSP identifies measures to provide high assurance that such an event can be defended against. The applicant's PSP also stated that requirements for the inspection, monitoring, and maintenance of the vehicle barrier system (VBS) are in the facility procedures.

The staff issued RAI 13.06-01-7, requesting the applicant to provide further information with regard to the content and substance of the descriptions of natural terrain and the VBS and to validate proposed stand-off distances.

In its response to RAI 13.06.01-7, dated May 10, 2010 (ML101380348), the applicant provided additional information and a rationale concerning the descriptions of the use of natural terrain and the VBS to validate proposed stand-off distances.

The staff reviewed the applicant's additional technical information concerning the VBS at the facility. The staff determined that the applicant's response to RAI 13.06-01-7, meets the requirements of 10 CFR 73.55(e)(10)(A) and to be acceptable. Therefore, the staff considers RAI 13.06.01-7 to be resolved and closed.

The staff issued RAI 13.06.01-8, requesting the applicant to address the requirements of 10 CFR 73.55(e)(10)(A) concerning the VBS design and the accepted guidance that was used to protect the site against the use of an explosive-laden vehicle.

In its response to RAI 13.06.01-8, dated May 10, 2010 (ML101380348), the applicant indicated that this specific guidance does not apply to the design features used to protect the site. The staff reviewed the technical information in the applicant's response to RAI 13.06.01-8 and determined that the response meets the requirements of 10 CFR 73.55(e)(10)(A) and to be acceptable. Therefore, the staff considers RAI 13.06.01-8 to be resolved and closed.

The staff issued RAI 13.06.01-9, requesting the applicant to provide additional information concerning the operation capability of the active barrier.

In its response to RAI 13.06.01-9, dated August 24, 2010 (ML102380513), the applicant provided additional information concerning the operational capability of the active barrier and the PSP was revised to clearly describe the operation of the active vehicle barrier. The staff reviewed the technical information in the applicant's response to RAI 13.06.01-9 and determined that the response meets the requirements of 10 CFR 73.55(e)(10)(A). The staff confirmed that the PSP was revised to reflect the operation of the active vehicle barrier and determined the description to be acceptable. Therefore, the staff considers RAI 13.06.01-9 to be resolved and closed.

Waterborne Threat Measures

The provisions of 10 CFR 73.55(e)(10)(ii) require the licensee to "Identify areas from which a waterborne vehicle must be restricted, and where possible, in coordination with local, State, and Federal agencies having jurisdiction over waterway approaches, deploy buoys, markers, or other equipment. In accordance with the site-specific analysis, provide periodic surveillance and observation of waterway approaches and adjacent areas."

The staff issued RAI 13.06.01-10, requesting the applicant to address why the requirements in 10 CFR 73.55(e)(10) do not apply to the STP, Units 3 and 4, site.

In its response to RAI 13.06.01-10, dated June 16, 2010 (ML101690153), the applicant revised the PSP and provided clarification concerning the waterborne threat. The staff reviewed the applicant's response to RAI 13.06.01-10, which included justification of why the requirement of 10 CFR 73.55(e)(10) does not apply to STP, Units 3 and 4. The staff confirmed that the PSP description was revised to address why 10 CFR 73.55(e)(10) does not apply to STP, Units 3 and 4, and determined the description to be acceptable. Therefore, the staff considers RAI 13.06.01-10 to be resolved and closed. .

Protected Area Barriers

The provisions of 10 CFR 10 CFR 73.55(e)(8)(i) require that the PA perimeter must be protected by physical barriers that are designed and constructed to: (1) limit access to only those personnel, vehicles, and materials required to perform official duties; (2) channel personnel, vehicles, and materials to designated access control portals; and (3) be separated from any other barrier designated as a vital area physical barrier, unless otherwise identified in the PSP.

The descriptions of the PA barrier are in Section 11.3 of the PSP. These descriptions meet the definitions of physical barriers and a protected area in 10 CFR 73.2 and the requirements of 10 CFR 73.55(e)(8).

Section 11.3 of the PSP described the extent to which the protected area barrier at the perimeter is separated from a vital area/island barrier. The security plan identifies where the PA barrier is not separated from a vital area barrier, which is consistent with 10 CFR 73.55(e)(8)(i)(C).

Section 11.3 of the PSP described isolation zones. As required in 10 CFR 73.55(e)(7), the isolation zone is maintained in outdoor areas adjacent to the PA perimeter barrier and is designed to ensure the ability to observe and assess activities on either side of the PA perimeter.

The staff issued RAI 13.06.01-11, requesting the applicant to revise the PSP in accordance with the requirements in 10 CFR 73.55(e)(7)(B). In its response to RAI 13.06.01-11, dated June 6, 2010 (ML101690153), the applicant stated that the PSP will be revised to meet the regulatory criteria. The RAI response included a PSP description to address the requirements of 10 CFR 73.55(e)(7)(B). The staff confirmed that the PSP was revised to describe the implementation of 10 CFR 73.55(e)(7)(B) and determined the description to be acceptable. Therefore, the staff considers RAI 13.06.01-11 to be resolved and closed.

The staff issued RAI 13.06.01-12, requesting the applicant to address the requirement in 10 CFR 73.55(e)(10)(i)(D) for rail access to the site. In its response to RAI 13.06.01-12, dated May 10, 2010 (ML101380348), the applicant stated that this regulation does not impact the site. The staff reviewed the applicant's response to RAI 13.06.01-12 and determined that it meets the requirements of 10 CFR 73.55(e)(10)(i)(D) and is therefore acceptable. Therefore, the staff considers RAI 13.06.01-12 to be resolved and closed.

Vital Area Barriers

The provisions of 10 CFR 73.55(e)(9), require that "Vital equipment must be located only within vital areas, which must be located within a protected area so that access to vital equipment requires passage through at least two physical barriers, except as otherwise approved by the Commission and identified in the security plans." In addition, 10 CFR 73.55(e)(5) requires that the physical barriers to access of certain vital areas shall be bullet-resisting.

Section 11.4 of the PSP described vital areas as restricted access areas surrounded by physical barriers with the capability to restrict access to only authorized individuals. All vital areas are constructed in accordance with established regulatory requirements. Section 11.4 also stated that the reactor control room, the central alarm station (CAS), and the location within which the last access control function for access to the protected area is performed must be bullet-resisting.

The staff issued RAI 13.06.01-13, requesting the applicant to clarify the redundancy features between the CAS and the secondary alarm station (SAS).

In its response to RAI 13.06.01-13, dated May 10, 2010 (ML101380348), the applicant clarified the redundancy features of the SAS. The RAI response included a PSP description for the redundancy of the CAS and SAS. The staff confirmed that the PSP was revised to clarify the redundancy features of the SAS and determined that the description meets the requirements of 10 CFR 73.55(i)(4). Therefore, the staff considers RAI 13.06.01-13 to be resolved and closed.

Target Set Equipment

The provisions of 10 CFR 73.55(f) require the following:

> (1) The licensee shall document and maintain the process used to develop and identify target sets, to include the site-specific analyses and methodologies used to determine and group the target set equipment or elements. (2) The licensee shall consider cyber attacks in the development and identification of target sets. (3) Target set equipment or elements that are not contained within a protected or vital area must be identified and documented consistent with the requirements in § 73.55(f)(1) and be accounted for in the licensee's protective strategy. (4) The licensee shall implement a process for the oversight of target set equipment and systems to ensure that changes to the configuration of the identified equipment and systems are considered in the licensee's protective strategy. Where appropriate, changes must be made to documented target sets.

Section 11.5 of the PSP stated that target set equipment or elements that are not contained within a protected or vital area are identified and accounted for in the site protective strategy, as required by 10 CFR 73.55(f)(3).

The staff reviewed Revision 3, Amendment 33 to General Electric (GE) ABWR SSAR, and Attachment 10 of the ICE, Revision 3, of the STP, Units 3 and 4. The staff reviewed the applicant's description in Sections 11.5 and 14.5 of the PSP and in Section 8 of the SCP, including the STP ICE and information in the GE ABWR SSAR for the implementation of the site-specific Physical Protection Program, in accordance with Commission regulations and NUREG–0800 acceptance criteria. Because the applicant's descriptions in Sections 11.5 and 14.5 of the PSP and in Section 8 of the SCP are consistent with the acceptance criteria in SRP Section 13.6.1, the staff determined that these descriptions meet the requirements of 10 CFR 73.55(f)(1), (3), and (4) and are therefore acceptable. The site protective strategy is described in detail in the facility implementing procedures that were not subject to NRC review as part of this COL application. These procedures are subject to future NRC inspections, in accordance with 10 CFR 73.55(c)(7)(iv) and 10 CFR Part 73, Appendix C, Section II, Paragraph B.5(iii).

Delay Barriers

The provisions of 10 CFR 73.55(e)(3)(ii), require that physical barriers must "provide deterrence, delay, or support access control" to perform the required function of the licensee's Physical Protection Program. The PSP described the use of delay barriers at the STP site.

Section 11.6 of the PSP includes a description of the use of delay barriers to meet the requirements of 10 CFR 73.55(e).

The staff reviewed the applicant's descriptions in PSP Sections 11, 11.1, 11.2, 11.2.1, 11.2.2, and 11.2.3 and Sections 11.3 through 11.6 of the implementation of the site-specific Physical Protection Program, in accordance with Commission regulations and NUREG–0800 acceptance criteria. Because the applicant's descriptions in the PSP are consistent with the acceptance criteria in Subsection 13.6.1 of NUREG–0800, the staff determined that the descriptions in the PSP meet the requirements of 10 CFR 73.55(e) and are therefore acceptable.

13.6.4.1.12 Security Posts and Structures

The provisions of 10 CFR 73.55(e)(5) require that the reactor control room, the CAS, and the location within which the last access control function for access to the protected area is performed must be bullet-resisting.

Section 12 of the PSP stated that security posts and structures are qualified to a level commensurate with their application within the site-protective strategy, and they must be constructed with bullet-resistant materials.

The staff reviewed the applicant's description in PSP Section 12 for the implementation of the site-specific Physical Protection Program, in accordance with Commission regulations and NUREG–0800 acceptance criteria. Because the applicant's description in the PSP is consistent with the acceptance criteria in Subsection 13.6.1 of NUREG–0800, the staff determined that the description in the PSP meets the requirements of 10 CFR 73.55(e)(5) and is therefore acceptable.

13.6.4.1.13 Access Control Devices

Regulations in 10 CFR 73.55(g)(1), state that consistent with the function of each barrier or barrier system, the licensee shall control personnel, vehicle, and material access, as applicable,

at each access control point in accordance with the Physical Protection Program design requirements of 10 CFR 73.55(b).

The provisions of 10 CFR 73.55(g)(6), require control of access control devices and state, "The licensee shall control all keys, locks, combinations, passwords and related access control devices used to control access to protected areas, vital areas and security systems to reduce the probability of compromise."

Types of Security Related Access Control Devices

Section 13.1 of the PSP described the applicant's use of security-related access control devices to control access to protected and vital areas and security systems.

Control and Accountability

Section 13.2.1 of the PSP described the control of security-related locks. Section 13.2.2 of the PSP described the controls associated with the changes to and replacements of access control devices, the accountability and inventory control process, and the circumstances that require changes in security-related locks. The applicant used the facility procedures to produce, control, and recover keys, locks, and combinations for all areas and equipment that serve to reduce the probability of compromise. Issuance of access control devices is limited to individuals who have unescorted access authorization and who require access to perform official duties and responsibilities. Keys and locks are accounted for through a key inventory control process described in the facility procedures.

The staff reviewed the applicant's descriptions in PSP Sections 13, 13.1, 13.2, 13.2.1, and 13.2.2 of the implementation of the site-specific Physical Protection Program in accordance with Commission regulations and NUREG–0800 acceptance criteria. Because the applicant's descriptions in the PSP are consistent with the acceptance criteria in Subsection 13.6.1 of NUREG-0800, the staff determined that the descriptions in the PSP meet the requirements of 10 CFR 73.55(g)(1) and (6) and are therefore acceptable.

13.6.4.1.14 Access Requirements

Access Authorization and Fitness for Duty

The provisions of 10 CFR 73.55(b)(7), require that the licensee shall establish, maintain, and implement an Access Authorization Program in accordance with 10 CFR 73.56 and shall describe the program in the PSP. The provisions of 10 CFR Part 26, require the licensee to establish and maintain an FFD Program.

Section 14.1 of the PSP described how the Access Authorization Program implements regulatory requirements utilizing the provisions in RG 5.66, Revision 1. The staff determined that RG 5.66 is an acceptable method for meeting the requirements of 10 CFR 73.55(b)(7).

The staff issued RAI 13.06.01-15, requesting the applicant to address the requirements of 10 CFR 73.55(e)(10) and to justify the approach for meeting the acceptance criteria captured in Section 13.6.1 of NUREG–0800.

In its response to RAI 13.06.01-15, dated June 16, 2010 (ML101690153), the applicant stated that its approach captured in the security plan is site specific, and the applicant included a

justification for this change. The staff reviewed the applicant's response to RAI 13.06.01-15 and determined that the applicant's approach meets the requirements of 10 CFR 73.55(e)(10). The response is therefore acceptable. Therefore, the staff considers RAI 13.06.01-15 to be resolved and closed.

The staff reviewed the applicant's description in PSP Section 14.1 of the implementation of the site-specific Physical Protection Program in accordance with Commission regulations and NUREG–0800 acceptance criteria. Because the applicant's description in the PSP is consistent with the acceptance criteria in Subsection 13.6.1 of NUREG–0800, the staff determined that the description in the PSP meets the requirements of 10 CFR 73.55(b)(7), 10 CFR 73.56, and 10 CFR Part 26 and is therefore acceptable.

Insider Mitigation Program

The provisions of 10 CFR 73.55(b)(9), require that the licensee shall establish, maintain, and implement an Insider Mitigation Program and shall describe the program in the PSP. The Insider Mitigation Program must monitor the initial and continuing trustworthiness and reliability of individuals granted or retaining unescorted access authorization to a protected or vital area. This program must also implement defense-in-depth methodologies to minimize the potential for an insider to adversely affect, either directly or indirectly, the licensee's capability to prevent significant core damage and spent fuel sabotage. The Insider Mitigation Program must include elements from the Access Authorization Program, the FFD Program, the Cyber Security Program, and the Physical Protection Program.

Section 14.2 of the PSP described how the applicant will establish, maintain, and implement an Insider Mitigation Program utilizing the guidance in RG 5.77, "Insider Mitigation Program." The Insider Mitigation Program requires elements from the Access Authorization Program described in 10 CFR 73.56; the FFD Program described in 10 CFR Part 26; the Cyber Security Program described in 10 CFR 73.54; and the Physical Security Program described in 10 CFR 73.55. In addition, Section 14.2 described the integration of the programs mentioned above to form a cohesive and effective Insider Mitigation Program. In addition, the applicant addressed the observations for the detection of tampering. The staff determined that RG 5.77 is an acceptable method for meeting the requirements of 10 CFR 73.55(b)(9).

The staff issued RAI 13.06.01-14, requesting the applicant to revise the PSP concerning patrols, in accordance with 10 CFR 73.55(i)(5)(vi). In its response to RAI 13.06.01-14, dated May 10. 2010 (ML101380348), the applicant stated that the PSP will be revised in accordance with 10 CFR 73.55(i)(5)(vi). The RAI response included proposed changes to the PSP. The staff confirmed that the PSP was revised concerning patrols and determined the description to be acceptable. Therefore, the staff considers RAI 13.06.01-14 to be resolved and closed.

The staff reviewed the applicant's description in PSP Section 14.2 of the implementation of the site-specific Physical Protection Program, in accordance with Commission regulations and NUREG–0800 acceptance criteria. Because the applicant's description in the PSP is consistent with the acceptance criteria in Subsection 13.6.1 of NUREG–0800, the staff determined that the description in the PSP meets the requirements of 10 CFR 73.55(b)(9) and is therefore acceptable.

Picture Badge Systems

Requirements in 10 CFR 73.55(g)(6)(ii)for identification badges state, “The licensee shall implement a numbered photo identification badge system for all individuals authorized unescorted access to the protected area and vital areas. In addition, identification badges may be removed from the protected area under limited conditions and only by authorized personnel. Records of all badges shall be retained and shall include name and areas to which persons are granted unescorted access.”

The provisions of 10 CFR 73.55(g)(7)(ii), require individuals who are not employed by the licensee but who require frequent or extended unescorted access to the PA and/or vital areas to perform duties and responsibilities required by the licensee at irregular or intermittent intervals, to satisfy the access authorization requirements of 10 CFR 73.56 and 10 CFR Part 26. These individuals shall be issued a non-employee photo identification badge that is easily distinguished from other identification badges, before being allowed unescorted access to the protected and vital areas. Nonemployee photo identification badges must visually reflect that the individual is a nonemployee and no escort is required.

Section 14.3 of the PSP described the site picture badge system. Identification badges will be displayed while individuals are inside the protected or vital areas. When not in use, badges may be removed from the protected area by authorized holders, provided that a process exists to deactivate the badge upon exiting the PA and positively confirm the individual’s true identity and authorization for unescorted access before entry into the PA. Records must be maintained to include the name and areas to which unescorted access is granted of all individuals to whom photo identification badges are issued.

The staff reviewed the applicant’s description in PSP Section 14.3 of the implementation of the site-specific Physical Protection Program in accordance with Commission regulations and NUREG–0800 acceptance criteria. Because the applicant’s description in the PSP is consistent with the acceptance criteria in Subsection 13.6.1 of NUREG–0800, the staff determined that the description in the PSP meets the requirements of 10 CFR 73.55(g)(6) and (7) and is therefore acceptable.

Searches

The provisions of 10 CFR 73.55(h), in part, state the objective of search program is: “to detect, deter, and prevent the introduction of firearms, explosives, incendiary devices, or other items which could be used to commit radiological sabotage.” To accomplish this, “the licensee shall search individuals, vehicles, and materials consistent with the physical protection program design requirements in paragraph (b) of 10 CFR 73.55, and the function to be performed at each access control point or portal before granting access.”

Section 14.4 of the PSP provided an overview description of the search process for vehicles, personnel, and materials. The search process is conducted using security personnel, specifically trained nonsecurity personnel and technology. Detailed discussions of actions to be taken in the event that unauthorized materials are discovered are in the implementing procedures.

Vehicle Barrier System Access Control Point

The provisions of 10 CFR 73.55(h)(2)(ii) through (v), provide the requirements for licensees to search vehicles at the owner-controlled area (OCA). The provisions of 10 CFR 73.55(h)(3) provide requirements for searching personnel, vehicles, and materials before entering the PA.

Section 14.4.1 of the PSP described the process for searching personnel, vehicles, and materials at predetermined locations before granting access to designated facility areas identified by the applicant as necessary for satisfying the Physical Protection Program. The applicant has developed specific implementing procedures that address vehicle and material searches at these locations.

PA Packages and Materials Search

Section 14.4.2 of the PSP described the process for conducting searches of packages and materials for firearms, explosives, incendiary devices, or other items that could be used to commit radiological sabotage. The searches will use equipment capable of detecting these items or visual and physical searches, or both, to ensure that all items are clearly identified before they enter the STP PA. Detailed provisions for conducting these searches are in the applicant's implementing procedures and include searching and controlling bulk materials and products. The applicant's implementing procedures also discuss the control of packages and materials previously searched and tamper sealed by personnel trained in accordance with the T&QP.

PA Vehicle Search

Section 14.4.3 of the PSP described the process for searching vehicles for firearms, explosives, incendiary devices, or other items that could be used to commit radiological sabotage. The searches will use equipment capable of detecting these items or visual and physical searches, or both, to ensure that all items are clearly identified at the PA. Detailed provisions for conducting these searches are in the applicant's implementing procedures, which also address methodologies for searching vehicles that must enter the PA under emergency conditions.

PA Personnel Searches

Section 14.4.4 of the PSP described the process for searching all personnel requesting access to PAs. The PSP described searching for firearms, explosives, incendiary devices, or other items that could be used to commit radiological sabotage. The searches will use equipment capable of detecting these items or visual and physical searches, or both, to ensure that all items are clearly identified before granting access to the PA. All persons except official Federal, State, and Local Law Enforcement Agency personnel on official duty are subject to these searches upon entering the PA. Detailed discussions of observation and control measures are in the implementing procedures.

The staff issued RAI 13.06.01-16, requesting the applicant to clarify the requirements in 10 CFR 73.55(g)(5)(ii) concerning situations involving emergency response personnel. In its response to RAI 13.06.01-16, dated May 10, 2010 (ML101380348), the applicant stated that the PSP will be revised to indicate who will coordinate with the Security Force Supervisor during an onsite emergency situation.

The staff reviewed the applicant's response to RAI 13.06.01-16, dated May 10. 2010 (ML101380348), and determined that the response meets the requirements of 10 CFR 73.55(g)(5)(ii). The staff confirmed that the PSP was revised to identify the position that coordinates with the Security Force Supervisor during an onsite emergency situation and determined the description to be acceptable. Therefore, the staff considers RAI 13.06.01-16 to be resolved and closed.

Protected Area Access Controls

Section 14.4.5 of the PSP described the process for controlling access at all points where personnel or vehicles could gain access to the applicant's PA. The plan notes that all points of personnel access are through a lockable portal. The entry process is normally monitored by multiple security personnel. Personnel are normally allowed access through means that verify identity and authorization following the search process. Vehicles are controlled through positive control methods described in the facility procedures.

The staff issued RAI 13.06.01-17, requesting that the applicant address the requirement of 10 CFR 73.55(g)(1) for alternate ingress and egress locations for personnel access to the PA.

In its response to RAI 13.06.01-17, dated May 10, 2010 (ML101380348), the applicant stated that all personnel access points to the site will meet the same criteria for personnel access into the PA. The staff reviewed the applicant's response to RAI13.06.01-17 and determined that it meets the requirements of 10 CFR 73.55(g)(1) and is therefore acceptable. Therefore, the staff considers RAI 13.06.01-17 to be resolved and closed.

Escort and Visitor Requirements

The provisions of 10 CFR 73.55(g)(7), state in part that the licensee may permit escorted access to protected and vital areas to individuals who have not been granted unescorted access, in accordance with the requirements of 10 CFR 73.56 and 10 CFR Part 26. The provisions of 10 CFR 73.55(g)(8) also discuss escort requirements. Licensees are required to implement procedures for processing, escorting, and controlling visitors. Procedures shall address the confirmation of identity of visitors, maintenance of a visitor control register, and visitor badging and escort controls that include training, communication, and escort ratios.

Section 14.4.6 of the PSP described the process for controlling visitors. The PSP affirms that procedures address identifying, processing, and escorting visitors and maintaining a visitor control register. Training provisions for escorting visitors include responsibilities, communications, and escort ratios. All escorts are trained to perform escort duties in accordance with site requirements. All visitors wear a badge that clearly indicates an escort is required.

The staff reviewed the applicant's descriptions in PSP Sections 14.4 and 14.4.1 through 14.4.6 for the implementation of the site-specific Physical Protection Program, in accordance with Commission regulations and NUREG–0800 acceptance criteria. Because the applicant's description in the PSP is consistent with the acceptance criteria in Subsection 13.6.1 of NUREG-0800, the staff determined that the descriptions in the PSP meet the requirements of 10 CFR 73.55(h)(2), (h)(3), (g)(7), and (g)(8) and are therefore acceptable.

Vital Area Access Controls

The provisions of 10 CFR 73.55(g)(4), require that licensees control access into vital areas consistent with established access authorization lists. In response to a site-specific credible threat or other credible information, licensees shall implement a two-person (line-of-sight) rule for all personnel in vital areas, so that no one individual is permitted access to a vital area.

The provisions of 10 CFR 73.56(j), require the licensee to establish, implement, and maintain a list of individuals who are authorized to have unescorted access to specific nuclear power plant vital areas during non-emergency conditions. The list must include only those individuals who have a continued need for access to those specific vital areas in order to perform their duties and responsibilities. The list must be approved by a cognizant licensee manager or supervisor who is responsible for directing the work activities of the individual who is granted unescorted access to each vital area. The list must be updated and reapproved at least once every 31 days.

Section 14.5 of the PSP described vital areas and stated that the applicant is responsible for ensuring that vital areas are locked and protected by an active intrusion alarm system. An access authorization system is established to limit unescorted access that is controlled by an access authorization list that is reassessed and reapproved at least once every 31 days. The facility procedures describe additional access control measures.

The staff issued RAI 13.06.01-18, requesting the applicant to address the requirements of 10 CFR 73.55(e)(9)(ii) by identifying the individual(s) with the authority to grant access to a vital area during an emergency. In its response to RAI 13.06.01-18, dated May 10. 2010 (ML101380348), and revised response dated June 16, 2010 (ML101690153), the applicant stated that the PSP indicated the authorized person(s) responsible for allowing such an action. The staff reviewed the applicant's response to RAI 13.06.01-18 and determined that it meets the requirements of 10 CFR 73.55(e)(9)(ii) and is acceptable. Therefore the staff considers RAI 13.06.01-18 to be resolved and closed.

The staff issued RAI 13.06.01-19, requesting the applicant to clarify the requirements of 10 CFR 73.55(e)(9)(v) as to the minimum vital areas and equipment that are protected.

In its response to RAI 13.06.01-19, dated December 6, 2010 (ML103430271), the applicant included a final list of vital areas that is incorporated into the PSP. The rationale for identifying specific plant equipment and areas as vital is captured in Revision 3 of the ICE. The ICE also contains the final list of vital equipment and vital areas for STP, Units 3 and 4. The staff reviewed the applicant's response to RAI 13.06.01-19 and determined that the list of vital areas meets the requirements of 10 CFR 73.55(e)(9)(v) and is therefore acceptable. The staff confirmed that the PSP was revised to identify the list of vital areas and determined the description to be acceptable. Therefore, the staff considers RAI 13.06.01-19 to be resolved and closed.

The staff reviewed the applicant's description in PSP Section 14.5 of the implementation of the site-specific Physical Protection Program, in accordance with Commission regulations and NUREG–0800 acceptance criteria. Because the applicant's description in the PSP is consistent with the acceptance criteria in Subsection 13.6.1 of NUREG–0800, the staff determined that the description in the PSP meets the requirements of 10 CFR 73.55(g)(4) and is therefore acceptable.

13.6.4.1.15 Surveillance Observation and Monitoring

The provisions of 10 CFR 73.55(i)(1), require the licensee to establish and maintain intrusion detection systems that satisfy the design requirements of 10 CFR 73.55(b) and to provide, at all times, the capability to detect and assess unauthorized persons and to facilitate the effective implementation of a site protective strategy.

Illumination

The provisions of 10 CFR 73.55(i)(6), require, in part, that "all areas of the facility are provided with illumination necessary to satisfy the design requirements of 10 CFR 73.55(b) and implement the protective strategy." Specific requirements include providing "a minimum illumination level of 0.2 foot-candles (2.153 lux), measured horizontally at ground level, in the isolation zones and appropriate exterior areas within the protected area. Alternatively, the licensee may augment the facility illumination system by means of low-light technology to meet the requirements of this section or otherwise implement the protective strategy." The licensee shall describe in the security plans how the lighting requirements of this section are met and, if used, the type(s) and application of low-light technology.

Section 15.1 of the PSP stated that all affected areas of the site have lighting capabilities that provide illumination sufficient for the initiation of an adequate response to an attempted intrusion of the isolation zone, a PA, or a vital area. This section discusses the implementation of technology using fixed and non-fixed low-light level cameras or alternative technological means. This section also addresses the potential for a loss of lighting and the compensatory actions that would be taken if that event were to occur.

The staff issued RAI 13.06.01-20, requesting the applicant to address the requirements of 10 CFR 73.55(i)(6)(i) concerning onsite lighting requirements.

In its response to RAI 13.06.01-20, dated May 10, 2010 (ML101380348), the applicant provided clarification on how site lighting meets the requirements of 10 CFR 73.55(i)(6)(i). The staff reviewed the applicant's response to RAI 13.06.01-20 and determined that it meets the requirements of 10 CFR 73.55(i)(6)(i). The staff confirmed that the PSP was revised to identify how site lighting meets the requirements of 10 CFR 73.55(i)(6)(i) and determined the description to be acceptable. Therefore, the staff considers RAI 13.06.01-20 to be resolved and closed.

Surveillance Systems

The provisions of 10 CFR 73.55(i)(1) provide, in part, that the licensee implement, establish, and maintain intrusion detection and assessment surveillance, observation, and monitoring systems that satisfy the design requirements of 10 CFR 73.55(b) and the licensee's OCA.

Section 15.2 of the PSP described that surveillance is accomplished by using human observation and technology. Surveillance systems include a variety of cameras and video display and annunciation systems designed to assist the security organization in observing, detecting, and assessing alarms or unauthorized activities. Certain systems provide real-time video images and the capability of playing back recorded video images. The facility implementing procedures describe the specifics of surveillance systems.

The staff issued RAI 13.06.01-21, requesting the applicant to address the requirements of 10 CFR 73.55(i)(3)(vii) concerning surveillance equipment.

In its response to RAI 13.06.01-21, dated May 10, 2010 (ML101380348), the applicant stated that surveillance equipment will be maintained with back-up power. The staff reviewed the applicant's response to RAI 13.06.02-21 and determined that it meets the requirements of 10 CFR 73.55(i)(3)(vii). The staff confirmed that the PSP was revised to reflect that surveillance equipment is maintained with backup power and determined the description to be acceptable. Therefore, the staff considers RAI 13.06.01-21 to be resolved and closed.

Intrusion Detection Equipment

Section 15.3 of the PSP described the perimeter intrusion detection system and the PA and vital area intrusion detection systems. These systems are capable of detecting attempted penetration of the PA perimeter barrier and are monitored with assessment equipment designed to satisfy the requirements of 10 CFR 73.55(i). The equipment provides real-time and play-back/recorded video images of the detected activities before and after each alarm annunciation. The PSP described how the applicant will meet regulatory requirements for redundancy, tamper indication, and an uninterruptable power supply.

The staff issued RAI 13.06.01-22, requesting the applicant to address the requirements of 10 CFR 73.55(e)(9)(vi) concerning secondary power supply systems.

In its response to RAI 13.06.01-22, dated May 10, 2010 (ML101380348), the applicant identified the systems with secondary power supply systems. The staff reviewed the applicant's response to RAI 13.06.01-22 and determined that it meets the requirements of 10 CFR 73.55(e)(9)(vi). The staff confirmed that the PSP was revised to identify the systems with secondary power and determined the description to be acceptable. Therefore, the staff considers RAI 13.06.01-22 to be resolved and closed.

Central Alarm Station (CAS) and Secondary Alarm Station (SAS) Operation

The provisions of 10 CFR 73.55(i)(4), provide requirements for alarm stations. The provisions of 10 CFR 73.55(i)(4)(i) require that both alarm stations must be designed and equipped to ensure that a single act, in accordance with the design-basis threat of radiological sabotage defined in 10 CFR 73.1, cannot disable both alarm stations. The licensee shall ensure the survivability of at least one alarm station to maintain the ability to perform the following functions: (1) detect and assess alarms; (2) initiate and coordinate an adequate response to an alarm; (3) summon offsite assistance; and (4) provide command and control. The provisions of 10 CFR 73.55(i)(4)(iii), require that alarm stations must be equal and redundant.

Section 15.4 of the PSP described the functional operations of the CAS and the SAS. The PSP provides that the alarm stations are equipped such that no single act will disable both alarm stations. The applicant's PSP provided that each alarm station is properly manned and no activities are permitted that would interfere with the operator's ability to execute assigned duties and responsibilities.

The staff issued RAI 13.06.01-23, requesting the applicant to address the requirements of 10 CFR 73.55(i)(4)(i) concerning the locations of both alarm stations.

In its response to RAI 13.06.01-23, dated June 16, 2010 (ML101690153), the applicant stated how these requirements are being met. The staff reviewed the applicant's response to RAI 13.06.01-23 and determined that it meets the requirements of 10 CFR 73.55(i)(4)(i). The staff reviewed the location of the CAS and SAS as described in the PSP and determined the

description to be acceptable. Therefore, the staff considers RAI 13.06.01-23 to be resolved and closed.

Security Patrols

1. Owner-Controlled Area (OCA) Surveillance and Response

The provisions of 10 CFR 73.55(e)(6), require that the licensee shall establish and maintain physical barriers in the OCA as needed to satisfy the Physical Protection Program design requirements of 10 CFR 73.55(b). The provisions of 10 CFR 73.55(i)(5)(ii) require in part, the licensee to provide continuous surveillance, observation, and monitoring of the OCA. The provisions of 10 CFR 73.55(i)(5)(ii), state that these responsibilities may be performed by security personnel during continuous patrols, through the use of video technology or with a combination of both.

Section 15.5.1 of the PSP described the processes used to meet this requirement. The PSP discusses the process to be used and provided details regarding the implementation of OCA surveillance techniques that are found in the facility procedures. The PSP includes a discussion regarding the implementation of manned and video options for the patrol and surveillance of the OCA.

2. Protected and Vital Area Patrols

The provisions of 10 CFR 73.55(i)(5)(iii) through (viii) require, in part, that armed patrols check unattended openings that intersect a security boundary such as an underground pathway; check external areas of the PA and vital area portals; periodically inspect vital areas; conduct random patrols of accessible target set equipment; be trained to recognize obvious tampering; and if detected, initiate an appropriate response in accordance with established plans and procedures.

Section 15.5.2 of the PSP described the process the applicant employs to meet the above requirements. The PSP described the areas of the facility that will be patrolled and observed as well as the frequency of these patrols and observations. The applicant addressed observations for the detection of tampering in Section 14.2 of the PSP and in the facility procedures.

The staff reviewed the applicant's descriptions in PSP Sections 15, 15.1 through 15.4, 15.5.1, and 15.5.2 for the implementation of the site-specific Physical Protection Program, in accordance with Commission regulations and NUREG–0800 acceptance criteria. Because the applicant's descriptions in the PSP are consistent with the acceptance criteria in Subsection 13.6.1 of NUREG–0800, the staff determined that the descriptions in the PSP meet the requirements of 10 CFR 73.55(b) and (i) and are therefore acceptable.

13.6.4.1.16 Communications

The provisions of 10 CFR 73.55(j)(1) through (6), describe the requirements for the establishment and maintenance of a continuous communication capability with both onsite and offsite resources to ensure effective command and control, during both normal and emergency situations. Alarm stations must be capable of calling for assistance, on-duty security force personnel must be capable of maintaining continuous communication with each alarm station and vehicle escort, and personnel escorts must maintain timely communication with security personnel. Continuous communication capabilities must terminate in both alarm stations,

between the LLEA and each alarm station and between the control room and each alarm station. Nonportable communications must remain operable from independent power sources, and the licensee must identify areas where communications could be interrupted or not maintained.

Notifications (Security Contingency Event Notifications)

Section 16.1 of the PSP stated that the applicant has a process to ensure that continuous communications are established and maintained between the onsite security force staff and the offsite support agencies.

System Descriptions

Section 16.2 of the PSP described the establishment and maintenance of the communications system. Detailed descriptions of security systems are included in the facility procedures. The applicant has access to both hard-wired and alternate communication systems. Site security personnel are assigned communications devices with which to maintain continuous communications with the CAS and SAS. All personnel and vehicle are assigned communication resources with which to maintain continuous communications. Continuous communication protocols are available between the CAS, the SAS, and the control room.

The staff reviewed the applicant's descriptions in PSP Sections 16, 16.1 and 16.2 for the implementation of the site-specific Physical Protection Program in accordance with Commission regulations and NUREG–0800 acceptance criteria. Because the applicant's descriptions in the PSP are consistent with the acceptance criteria in Subsection 13.6.1 of NUREG–0800, the staff determined that the PSP descriptions meet the requirements of 10 CFR 73.55(j)(1) through (6) and are therefore acceptable.

13.6.4.1.17 Reviews, Evaluations, and Audits of the Physical Security Program

The provisions of 10 CFR 73.55(m) require, in part that each element of the Physical Protection Program will be reviewed at least every 24 months. A review is required within 12 months after initial physical protection program implementation, or a change in personnel, procedures, equipment or facilities, that could have a potentially adverse affect on security. A review is also required as necessary based on site-specific analysis assessments, or other performance indicators. Reviews must be conducted by individuals independent of those responsible security program and those directly responsible for implementation of the onsite physical protection program. Reviews must include an audit of security plans, implementing procedures and local law enforcement commitments. Results of reviews shall be presented to management at least one level above the level responsible for day-to-day plant operations, findings must be entered in the site's Corrective Action Program.

Section 17 of the PSP stated that, the Physical Security Program is reviewed 12 months following initial implementation and at least every 24 months by individuals independent of both security program management and personnel who have a direct responsibility for implementation of the security program. The Physical Security Program review includes, but is not limited to, an audit of the effectiveness of the Physical Security Program, cyber security plans, implementing procedures, safety/security interface activities, the testing, maintenance, and calibration program, and response commitments by local, State, and Federal law enforcement authorities.

A review shall be conducted as necessary based on site-specific analyses, assessments, or other performance indicators as soon as reasonably practical, but no longer than 12 months, after changes occur in personnel, procedures, equipment, or facilities that could potentially have an adverse effect on safety/security.

The results and recommendations of the Physical Security Program review document management's findings on whether the Physical Security Program is currently effective. A report will document any actions taken as a result of recommendations from prior program reviews. The report will be provided to plant management and to appropriate corporate management at least one level higher than managers with responsibility for the day-to-day plant operations. These reports are maintained in an auditable form and are available for inspection.

Findings from the onsite Physical Security Program reviews are entered into the facility's Corrective Action Program.

The staff issued RAIs 13.06-14 and 13.06-10, requesting the applicant to address the requirements of 10 CFR 73.58 concerning the safety/security interface.

In its response to RAI 13.06-14, dated June 2, 2010 (ML101580095), the applicant stated that administrative controls for the safety and security interfaces will be addressed in site implementing procedures, and a revision to the FSAR will address this item. The RAI response also included the FSAR description to address safety and security interface in site procedures.

The staff reviewed the applicant's proposed FSAR safety and security interface description and the response that stated the intent to revise the COL application, Part 2, FSAR Subsection 13.5.3.4.1, "Administrative Procedures," to incorporate requirements for the safety/security interface. The staff also reviewed the applicant's documented process for reviewing safety and security interface for the application process in its response to RAI 13.06-10. The staff determined that the applicant's responses to RAI 13.06-14 and RAI 13.06-10, dated July 7, 2010 (ML101930138), meet the requirements of 10 CFR 73.58. The staff confirmed that the description for the safety/security interface process was incorporated into the FSAR Revision 4, Section 13.5 and the ICE and determined the information to be acceptable. Therefore, the staff considers RAIs 13.06-10 and 13.06-14 to be resolved and closed.

In RAI 01.05-37, the staff requested clarification pertaining to how the applicant, once licensed, will analyze and identify changes in the site-specific conditions related to the SSCs (described in certain technical reports), resulting from changes made to the STP, Units 3 and 4, between issuance of the COL and the security program implementation milestones provided in the FSAR to ensure that the security plan continues to meet 10 CFR 73.55(b)(4). The staff also requested, clarification on how the applicant, once licensed, will ensure that the as-built plant continues to meet all Physical Protection Program design and performance criteria in 10 CFR 73.55 at the time the Physical Protection Program is implemented.

In its response to RAI 01.05-37, dated September 17, 2014 (ML14268A222), the applicant stated that a future revision of the COL application will reflect the changes discussed in the response. The applicant added that FSAR Chapter 13 will be revised to add text to Subsection 13.5.3.4.1 "Administrative Procedures," with the following text:

> A process is in effect between the time of issuance of the combined license and prior to Security Program implementation during the design and construction

period to implement the safety/security interface requirements of 10 CFR 73.58 and the guidance of RG 5.74. This process is used to manage safety/security interface while the security procedures and emergency plan implementing procedures are being developed and implemented.

The staff reviewed the applicant's RAI response and the revised FSAR Subsection 13.5.3.4.1, Revision 11 that incorporates the description for safety/security interface after the issuance of the license. The staff's review determined that the response to RAI 01.05-37, meets the requirements of 10 CFR 73.55(b)(4) and 10 CFR 73.55(m), and is acceptable, because it provided a description to implement administrative processes to manage the safety/security interface during the construction phase and throughout the operational phase. Therefore, the staff considers RAI 01.05-37 to be resolved and closed.

The staff reviewed the applicant's description in PSP Section 17 of the implementation of the site-specific Physical Protection Program, in accordance with Commission regulations and NUREG–0800 acceptance criteria. Because the applicant's description in the PSP is consistent with the acceptance criteria in Subsection 13.6.1 of NUREG-0800, the staff determined that the description in the PSP meets the requirements of 10 CFR 73.55(m) and is therefore acceptable.

13.6.4.1.18 Response Requirements

The provisions of 10 CFR 73.55(k) require, in part, that the licensee establish and maintain a properly trained, qualified, and equipped security force to interdict and neutralize threats up to and including the design-basis threat defined in 10 CFR 73.1 to prevent significant core damage and spent fuel sabotage. To meet this objective, the licensee must ensure that necessary equipment is in supply, and that the equipment is working and is readily available. The licensee must ensure that training is provided to all armed members of the security organization who will be available onsite to implement the applicant's protective strategy, as described in the facility procedures and in 10 CFR Part 73, Appendix C. The licensee must have facility procedures to reconstitute armed response personnel and to establish working agreement(s) with LLEAs. The applicant must implement a threat warning system to accommodate heightened security threats and coordination with NRC representatives.

Section 18 of the PSP described an armed response team, as well as its responsibilities, training, and equipment and the number of armed response force personnel required to be immediately available at all times to implement the site's protective strategy. The PSP provided for training in accordance with the requirements of 10 CFR Part 73, Appendix B, which will ensure implementation of the site protective strategy in accordance with 10 CFR Part 73, Appendix C. Procedures are in place to reconstitute the armed response personnel as are agreements with LLEA. The PSP also described procedures to manage the threat warning system.

In the Revision 3 of the ICE, the applicant provided additional details concerning the implementation of the site's physical protective strategy (i.e., the initial position of an armed response team and site-specific layout features).

The staff reviewed the applicant's description in PSP Section 18 of the implementation of the site-specific Physical Protection Program, in accordance with Commission regulations and NUREG-0800 acceptance criteria. Because the applicant's description in the PSP is consistent

with the acceptance criteria in Subsection 13.6.1 of NUREG–0800, the staff determined that the description in the PSP meets the requirements of 10 CFR 73.55(k) and is therefore acceptable.

13.6.4.1.19 Special Situations Affecting Security

The provisions of 10 CFR 73.58, require that each operating nuclear power reactor licensee with a license issued under 10 CFR Part 50 or 10 CFR Part 52 shall comply with the following requirements: The licensee shall assess and manage the potential for adverse effects on safety and security, including the site emergency plan, before implementing changes to plant configurations, facility conditions, or security; the scope of changes to be assessed and managed must include planned and emergent activities (such as, but not limited to, physical modifications, procedural changes, changes to operator actions or security assignments, maintenance activities, system reconfiguration, access modification or restrictions, and changes to the security plan and its implementation); where potential conflicts are identified, the licensee shall communicate them to appropriate licensee personnel and take compensatory and/or mitigative actions to maintain safety and security under applicable Commission regulations, requirements, and license conditions.

The provisions of 10 CFR 73.55(a)(2), require the applicant's security plans to identify, describe, and account for site-specific conditions that affect its capability to satisfy the requirements of that section.

The provisions of 10 CFR 73.55(n)(8) require, in part, operational and post-maintenance performance testing to ensure operational readiness for security equipment and systems.

Section 19 of the PSP includes requirements for assessments to manage the increased risk of special situations affecting security.

Refueling/Major Maintenance

Section 19.1 of the PSP stated that for refueling or major maintenance activities, the security procedures identify measures for implementation actions before refueling or major maintenance activities. These measures include controls to ensure that a search is conducted before revitalizing an area, protective barriers and alarms are fully operational, and, that post-maintenance performance testing to ensure the operational readiness of equipment per 10 CFR 73.55(n)(8).

Construction and Maintenance

Section 19.2 of the PSP stated that during periods of construction and maintenance when temporary modifications are necessary, the applicant will implement measures that provide for equivalency in the physical protective measures and features impacted by the activities such that physical protection measures are not degraded. The process for making such changes or modifications is in the facility procedures.

The staff reviewed the applicant's descriptions in PSP Sections 19, 19.1, and 19.2 for the implementation of the site-specific Physical Protection Program, in accordance with Commission regulations and NUREG–0800 acceptance criteria. Because the applicant's descriptions in the PSP are consistent with the acceptance criteria in Subsection 13.6.1 of

NUREG-0800, the staff determined that the descriptions in the PSP meets the requirements of 10 CFR 73.55(n)(8) and 10 CFR 73.58 and are therefore acceptable.

13.6.4.1.20 Maintenance, Testing, and Calibration

The provisions of 10 CFR 73.55(n), require the licensee to establish, maintain, and implement a Maintenance, Testing, and Calibration Program to ensure that security systems and equipment, including secondary and uninterruptible power supplies, are tested for operability and performance at predetermined intervals; are maintained in an operable condition; and are capable of performing their intended functions. The regulation requires licensees to describe their Maintenance, Testing, and Calibrations Program in the PSP. Implementing procedures are to describe the details of and intervals for conducting these activities. Licensee procedures must identify criteria for documenting deficiencies in the Corrective Action Program and ensure data protection, in accordance with 10 CFR 73.21. The licensee must conduct periodic operability testing of the intrusion alarm system and must conduct performance testing at the beginning and end of the period for which it is used for security, or if the period of continuous use exceeds seven days, at least once every seven days. Communication equipment must be tested at least daily, and search equipment must also be tested periodically. Procedures must be established for testing equipment located in hazardous areas, and procedures must be established for returning equipment to service after each repair.

Sections 20.1 through 20.6 of the PSP describe the Maintenance, Testing, and Calibration Program for security-related equipment. Section 20.1 states that the applicant shall conduct intrusion detection testing in accordance with RG 5.44, Revision 3. Each operational component required for the implementation of the security program is, at a minimum, tested in accordance with 10 CFR 73.55(n), the PSP, and implementing procedures.

The staff issued RAI 13.06.01-24, requesting the applicant to address the requirements of 10 CFR 73.55(n)(1)(ii), concerning testing options in RG 5.44. In its response to RAI 13.06.01-24, dated May 10, 2010 (ML101380348), the applicant provided a PSP description that addressed the testing options of RG 5.44. The staff reviewed the applicant's response to this RAI and determined that it meets the requirements of 10 CFR 73.55(n)(1)(ii). The staff confirmed that the PSP was revised to reflect the testing options of RG 5.44 and determined the description to be acceptable. Therefore, the staff considers RAI 13.06.01-24 to be resolved and closed.

The staff issued RAI 13.06.01-25, requesting the applicant to address the requirements of 10 CFR 73.55(e)(3) concerning an incorrect reference regarding "bullet resistance." In its response to RAI 13.06.01-25, dated June 10, 2010 (ML101690153), the applicant provided a PSP description for the error identified in the bullet resistance. The staff reviewed the applicant's response to this RAI and determined that the PSP description meets the requirements of 10 CFR 73.55(e)(3). The staff confirmed that the PSP was revised to reflect the correct bullet resistance and determined the description to be acceptable. Therefore, the staff considers RAI 13.06.01-25 to be resolved and closed.

The staff reviewed the applicant's descriptions in PSP Sections 20 and 20.1 through 20.6 for the implementation of the site-specific Physical Protection Program, in accordance with Commission regulations and NUREG–800 acceptance criteria. Because the applicant's descriptions in the PSP are consistent with the acceptance criteria in Subsection 13.6.1 of NUREG-0800, the staff determined that the descriptions in the PSP meet the requirements of 10 CFR 73.55(n) and are therefore acceptable.

13.6.4.1.21 Compensatory Measures

The provisions of 10 CFR 73.55(o) require, in part, that the licensee shall identify criteria and measures to compensate for degraded or inoperable equipment, systems, and components to meet the requirements of Section 73.55, "Requirements for physical protection of licensed activities in nuclear power reactors against radiological sabotage." Compensatory measures must provide a level of protection that is equivalent to the protection provided by the degraded or inoperable, equipment, system, or components. Compensatory measures must be implemented within specific time frames that are necessary to meet the appropriate portions of 10 CFR 73.55(b) and are described in the security plans.

Section 21 of the PSP identifies measures and criteria required to compensate for degraded or inoperable equipment, systems, and components, in accordance with 10 CFR 73.55(o), to assure that the effectiveness of the physical protection system is not reduced by failure or other contingencies affecting the operation of the security-related equipment or structures. PSP Sections 21.1 through 21.12 address PA and vital area barriers, intrusion detection and alarm systems, lighting, alarm systems, fixed and nonfixed closed circuit television, play-back and recorded video systems, computer systems, access control devices, vehicle barrier systems, channeling barrier systems, and other security-related equipment.

The staff reviewed the applicant's descriptions in PSP Sections 21 and 21.1 through 21.12 of the implementation of the site-specific Physical Protection Program, in accordance with Commission regulations and NUREG–0800 acceptance criteria. Because the applicant's descriptions in the PSP are consistent with the acceptance criteria in Subsection 13.6.1 of NUREG-0800, the staff determined that the descriptions in the PSP meet the requirements of 10 CFR 73.55(o) and are therefore acceptable.

13.6.4.1.22 Records

The provisions of 10 CFR Part 26; 10 CFR 73.55(q); 10 CFR 73.56(k) and (o); 10 CFR Part 73, Appendix B, Section VI,Paragraph H; 10 CFR Part 73, Appendix C, Section II, Paragraph C; and 10 CFR 73.70 require, in part, that the licensee must retain and maintain all records required to be kept by the Commission regulations, orders, or license conditions until the Commission terminates the license for which the records were developed. The applicant shall also maintain superseded portions of these records for at least three years after the record is superseded, unless otherwise specified by the Commission. The licensee is required to keep records of contracts with any contracted security force that implements any portion of the onsite Physical Protection Program for the durations of the contracts. The licensee must make all records available to the Commission that the Commission requires the applicants to keep, and the Commission may inspect, copy, retain, and remove all such records, reports, and documents, whether kept by the licensee or by a contractor. Review and audit reports must be maintained and be available for inspection for a period of three years.

Section 22 of the PSP addresses the requirements for maintaining records. Sections 22.1 through 22.13 address each kind of record that the applicant will maintain and the duration of retention for each record. The following types of records are maintained in accordance with the above mentioned regulations: Access Authorization Records; Suitability, Physical, and Psychological Qualification Records for Security Personnel; PA and VA Access Control Records; PA Visitor Access Records; PA Vehicle Access; VA Access Transaction Records; Vitalization and Devitalization Records; VA Access List Reviews; Security Plans and

Procedures; Security Patrols, Inspections and Tests; Maintenance; CAS and SAS Alarm Annunciation and Security Response Records; Local Law Enforcement Agency Records; Records of Audits and Reviews; Access Control Devices; Security Training and Qualification Records; Firearms Testing and Maintenance Records; and an Engineering Analysis for the VBS.

The staff reviewed the applicant's descriptions in PSP Sections 22 and 22.1 through 22.13 of the implementation of the site-specific Physical Protection Program, in accordance with Commission regulations and NUREG–0800 acceptance criteria. Because the applicant's descriptions in the PSP are consistent with the acceptance criteria in Subsection 13.6.1 of NUREG-0800, the staff determined that the descriptions in the PSP meet the requirements of 10 CFR 73.55(q), 10 CFR 73.55(o), and 10 CFR 73.70 and are therefore acceptable.

13.6.4.1.23 Digital Systems Security

Section 23 of the PSP addresses digital systems security. The applicant stated in the PSP that the requirements of 10 CFR 73.54 are implemented. The applicant maintains a cyber security plan that described how it provides a high assurance that safety, security, and emergency preparedness (SSEP) functions are protected against the design-basis threat.

The staff's review of the cyber security plan is in Section 13.8 of this SER.

13.6.4.1.24 Temporary Suspension of Security Measures

The provisions of 10 CFR 73.55(p), allows the licensee to suspend implementation of affected requirements of this section under the following conditions:

(i) In accordance with 10 CFR 50.54(x) and 50.54(y) of this chapter, the licensee may suspend any security measures under this section in an emergency when this action is immediately needed to protect the public health and safety and no action consistent with license conditions and technical specifications that can provide adequate or equivalent protection is immediately apparent. This suspension of security measures must be approved as a minimum by a licensed senior operator before taking this action.

(ii) During severe weather when the suspension of affected security measures is immediately needed to protect the personal health and safety of security force personnel and no other immediately apparent action consistent with the license conditions and technical specifications can provide adequate or equivalent protection. This suspension of security measures must be approved, as a minimum, by a licensed senior operator, with input from the security supervisor or manager, before taking this action.

Suspension of Security Measures In Accordance with 10 CFR 50.54(x) and (y)

Section 24.1 of the PSP addresses the suspension of security measures in accordance with 10 CFR 50.54(x) and 10 CFR 50.54(y). Specifically, the plan described the conditions under which a suspension is permissible, the level of authority necessary to suspend security measures, and the provisions for reporting such a suspension.

Suspension of Security Measures During Severe Weather or Other Hazardous Conditions

As required in 10 CFR 73.55(p), State in part, suspension of security measures is reported and documented in accordance with the provision of 10 CFR 73.71. This suspension of security measures must be approved, at a minimum, by a licensed senior operator with input from the security supervisor or manager before taking this action. Suspended security measures must be reinstated as soon as conditions permit.

Section 24.2 of the PSP provided that certain security measures may be temporarily suspended during circumstances such as imminent, severe, or hazardous weather conditions, but only when such action is immediately needed to protect the personal health and safety of security force personnel and no other immediately apparent action consistent with the security measures can provide adequate or equivalent protection. Under the PSP, suspended security measures shall be restored as soon as practical.

The staff reviewed the applicant's descriptions in PSP Sections 24, 24.1, and 24.2 for the implementation of the site-specific Physical Protection Program, in accordance with Commission regulations and NUREG–0800 acceptance criteria. Because the applicant's descriptions in the PSP are consistent with the acceptance criteria in Subsection 13.6.1 of NUREG-0800, the staff determined that the descriptions in the PSP meet the requirements of 10 CFR 73.55(p) and are therefore acceptable.

13.6.4.1.25 Appendix A Glossary of Terms and Acronyms

The staff reviewed Appendix A and determined the glossary to be consistent with the endorsed NEI 03–12, Revision 6.

The staff issued RAI 13.06.01-25, requesting the applicant to address the bullet resisting standard typographical error. In its response to RAI 13.06.01-25, dated May 10, 2010 (ML101380348), the applicant provided a PSP description for the error identified in the bullet resistance. The staff reviewed the applicant's response to this RAI and determined that the PSP description meets the requirements of 10 CFR 73.55(e)(3). The staff confirmed that the PSP was revised to correct the bullet resistance error and determined the description to be acceptable. Therefore, the staff considers RAI 13.06.01-25 to be resolved and closed.

The staff issued RAI 13.06.01-26, requesting the applicant to address the requirements of 10 CFR 73.55(h) concerning the definition of "Contraband." In its response to RAI 13.06.01-26, dated May 10, 2010 (ML101380348), the applicant provided a PSP description that revises the definition of "Contraband." The staff reviewed the applicant's response to this RAI and determined that the revised PSP description for the definition of "Contraband" meets the requirements of 10 CFR 73.55(h). The staff confirmed that the PSP was revised to correct the definition of contraband and determined the description to be acceptable. Therefore, the staff considers RAI 13.06.01-26 to be resolved and closed.

The staff issued RAI 13.06.01-27, requesting the applicant to address the requirements of 10 CFR 73.55(b)(9) concerning the definition of "Insider." In its response to RAI 13.06.01-27, dated May 10, 2010 (ML101380348), the applicant provided a PSP description that revises the definition of "Insider." The staff reviewed the applicant's response to this RAI and determined that the revised PSP description for the definition of "Insider" meets the requirements of 10 CFR 73.55(b)(9). The staff confirmed that the PSP was revised to correct the definition of "Insider"

and determined the description to be acceptable. Therefore, the staff considers RAI 13.06.01-27 to be resolved and closed.

13.6.4.1.26 Conclusions on the Physical Security Plan

On the basis of the staff's review described in Subsections 13.6.4.1.1 through 13.6.4.1.25 of this SER, the staff determined that the PSP meets the requirements of 10 CFR 73.55(a) through (r). The target sets, Target Set Analysis, and Site Protective Strategy are in the facility implementing procedures, which were not subject to NRC review as part of this COL application and are therefore subject to future NRC inspections, in accordance with 10 CFR 73.55(c)(7)(iv) and 10 CFR Part 73, Appendix C, Section II, Paragraph B.5.(iii). The staff concluded that complete and procedurally correct implementation of the PSP will provide a high assurance that activities involving special nuclear materials are not inimical to common defense and security and do not constitute an unreasonable risk to public health and safety.

13.6.4.2 *Appendix B Training and Qualification Plan*

13.6.4.2.1 Introduction

The provisions of 10 CFR 73.55(c)(4), state that the licensee shall establish, maintain, implement, and follow a T&QP that described how the criteria set forth in 10 CFR Part 73, Appendix B will be implemented.

The provisions of 10 CFR 73.55(d)(3), state that the licensee may not permit any individual to implement any part of the Physical Protection Program unless the individual has been trained, equipped, and qualified to perform the assigned duties and responsibilities in accordance with 10 CFR Part 73, Appendix B and the T&QP. Nonsecurity personnel may be assigned duties and responsibilities required to implement the Physical Protection Program and shall:

(i) Be trained through established licensee training programs to ensure that each individual is trained, qualified, and periodically requalified to perform assigned duties.

(ii) Be properly equipped to perform assigned duties.

(iii) Possess the knowledge, skills, and abilities, to include physical attributes such as sight and hearing, required to perform their assigned duties and responsibilities.

In addition, 10 CFR Part 73, Appendix B, Section VI, Paragraph D.2.(a) states that armed and unarmed individuals shall be requalified at least annually, in accordance with the requirements of the Commission-approved T&QP.

The T&QP described that its purpose is to address the requirements found in 10 CFR Part 73, Appendix B, Section VI. The applicant indicated that the objective of the plan is to provide a mechanism to ensure that members of the security organization—and all others who have duties and responsibilities implementing the security requirements and protective strategy—are properly trained, equipped, and qualified. Deficiencies identified during the administration of the T&QP requirements are documented in the site's Corrective Action Program.

The staff reviewed the introductory section in the T&QP and determined that it includes all of the programmatic elements necessary to satisfy the requirements of 10 CFR 73.55 and 10 CFR

Part 73, Appendix B, Section VI that are applicable to the T&QP. Additional section-by-section evaluations and discussions are found in the following paragraphs.

13.6.4.2.2 Employment Suitability and Qualification

The following T&QP sections describe the requirements for mental qualifications, documentation, and physical requalification for security personnel (applicant employee and contractor).

Suitability

The provisions of 10 CFR Part 73, Appendix B, Section VI, Paragraph B.1.(a) requires, in part, that before employment or assignment to the security organization, an individual shall: (1) possess a high school diploma or pass an equivalent performance examination designed to measure basic mathematical, language, and reasoning skills, abilities, and knowledge required to perform security duties and responsibilities; (2) have attained the age of 21 for an armed capacity or the age of 18 for an unarmed capacity; and (3) not have any felony convictions that reflect on the individual's reliability. In addition, the regulation states that individuals in an armed capacity will not be disqualified from possessing or using firearms or ammunition, in accordance with applicable State or Federal laws including 18 U.S.C. 922. Licensees shall use information obtained during the completion of the individual's background investigation for unescorted access to determine suitability. The provisions of 10 CFR Part 73, Appendix B, Section VI, Paragraph B.1.(b) requires that the qualification of each individual to perform assigned duties and responsibilities must be documented by a qualified training instructor and attested to by a security supervisor.

Section 2.1 of the T&QP details the qualification requirements for employment in the security organization that follows the regulation in 10 CFR Part 73, Appendix B, Section VI, Paragraph B.1.(a).

Physical Qualifications

The provisions of 10 CFR Part 73, Appendix B, Section VI Paragraph B.2 require, in part, that individuals whose duties and responsibilities are directly associated with the effective implementation of the Commission-approved security plans, licensee protective strategy, and implementing procedures may not have any physical conditions that would adversely affect the performance of their assigned security duties and responsibilities.

Section 2.2 of the T&QP details individuals directly associated with implementation of the security plans. The protective strategy and procedures may not have any physical conditions that would adversely affect their performance of assigned security duties and responsibilities. All individuals on the Critical Task Matrix shall demonstrate the necessary physical qualifications before assuming their duties.

Physical Examination

The provisions in 10 CFR Part 73, Appendix B, Section VI, Paragraph B.2.(a)(2), state that armed and unarmed individuals assigned to security duties and responsibilities shall be subject to a physical examination designed to measure the individual's physical ability to perform the assigned duties and responsibilities as identified in the Commission-approved security plans, licensee protective strategy, and implementing procedures.

The provisions of 10 CFR Part 73, Appendix B, Section VI, Paragraph B.2.(a)(3) state, in part, that the physical examination must be administered by a licensed health professional, with the final determination made by a licensed physician to verify the individual's physical capability to perform assigned duties and responsibilities.

The provisions of 10 CFR Part 73, Appendix B, Sections VI, Paragraphs B.2.(a)(4)(b) through (e), provide the minimum requirements that individuals must meet and include requirements for vision, hearing, a review of existing medical conditions, and an examination for potential addictions.

The provisions of 10 CFR Part 73, Appendix B, Section VI, Paragraph B.2.(f), address a medical examination before returning to assigned duties following any incapacitation.

Section 2.3 of the T&QP described the physical examinations for armed and unarmed individuals assigned to security duties, as well as other individuals who implement parts of the Physical Protection Program. Minimum requirements exist for physical examinations of vision, hearing, existing medical conditions, and addiction or other physical requirements.

The staff reviewed the applicant's descriptions in T&QP Sections 2.1, 2.2, and 2.3 of the implementation of the site-specific Physical Protection Program, in accordance with Commission regulations and NUREG–0800 acceptance criteria. Because the applicant's descriptions in the T&QP are consistent with the acceptance criteria in Subsection 13.6.1 of NUREG–0800, the staff determined that these description meet the requirements of 10 CFR Part 73, Appendix B, Sections VI.B.1 and B.2 and are therefore acceptable.

Medical Examinations and Physical Fitness Qualifications

The provisions of 10 CFR Part 73, Appendix B, Section VI, Paragraph B.4.(a) require, in part, that armed members of the security organization shall be subject to a medical examination by a licensed physician to determine the individual's fitness to participate in physical fitness tests, and the licensee shall obtain and retain a written certification from the licensed physician that no medical conditions were disclosed by the medical examination that would preclude the individual's ability to participate in the physical fitness tests or meet the physical fitness attributes or objectives associated with assigned duties.

The provisions of 10 CFR Part 73, Appendix B, Section VI, Paragraph B.4.(b) require, in part, that before an assignment, armed members of the security organization shall demonstrate physical fitness for assigned duties and responsibilities by performing a practical physical fitness test. The physical fitness test must consider physical demands such as strenuous activity, physical exertion, levels of stress, and exposure to the elements as they pertain to each individual's assigned security duties. The physical fitness qualification of each armed member of the security organization must be documented by a qualified training instructor and attested to by a security supervisor.

Section 2.4 of the T&QP is explicit in its requirements for medical examinations and physical qualifications.

The staff issued RAI 13.06.01-28, requesting the applicant to address the incorrect reference in Section 2.4 of the T&QP.

In its response to RAI 13.06.01-28, dated May 10, 2010 (ML101380348), the applicant provided a T&QP description that corrects the reference. The staff reviewed the applicant's response to RAI 13.06.01-28, dated May 10, 2010 (ML101380348) and determined that the revised T&QP description with the corrected reference meets the requirements of 10 CFR Part 73, Appendix B, Section VI, Paragraph B.4.(b). and is therefore acceptable. The staff confirmed that the T&QP was revised to correct the reference and determined the revision to be acceptable. Therefore, the staff considers RAI 13.06.01-28 to be resolved and closed.

The staff issued RAI 13.06.01-29, requesting the applicant to address the physical fitness test described in Section 2.4 of the T&QP.

In its response to RAI 13.06.01-29, dated July 7, 2010 (ML101930137), the applicant provided a T&QP description that addresses the requirements for a physical fitness test. The staff reviewed the applicant's response to RAI 13.06.01-29, and determined that the revised T&QP description for physical fitness meets the requirements of 10 CFR Part 73, Appendix B, Section VI, Paragraph B.4.b(2) and is therefore acceptable. The staff confirmed that the T&QP was revised to describe the applicant's physical fitness test and determined the revision to be acceptable. Therefore, the staff considers RAI 13.06.01-29 to be resolved and closed.

The staff reviewed the applicant's description in T&QP Section 2.4 for the implementation of the site-specific Physical Protection Program, in accordance with Commission regulations and NUREG-0800 acceptance criteria. Because the applicant's description in the T&QP is consistent with the acceptance criteria in Subsection 13.6.1 of NUREG–0800, the staff determined that the description in the T&QP meets the requirements of 10 CFR Part 73, Appendix B, Section VI, Paragraph B.4(a) and 10 CFR Part 73, Appendix B, Section VI, Paragraph B.4.(b) and is therefore acceptable.

Psychological Qualifications

1. General Psychological Qualifications

The provisions of 10 CFR Part 73, Appendix B, Section VI, Paragraph B.3.(a) require, in part, that armed and unarmed individuals shall demonstrate the ability to apply good judgment, mental alertness, the capability to implement instructions and assigned tasks, and to possess the acuity of senses and ability of expression sufficient to permit accurate written, spoken, audible, and visible communication or communicating by using other signals required by assigned duties and responsibilities.

Section 2.5.1 of the T&QP stated that individuals whose security tasks and jobs are directly associated with the effective implementation of the security plan and protective strategy shall demonstrate the qualities in 10 CFR Part 73, Appendix B, Section VI, Paragraph B.3.(a).

2. Professional Psychological Examination

The provisions of 10 CFR Part 73, Appendix B, Section VI, Paragraph B.3.(b) require, in part, that a licensed psychologist, psychiatrist, or physician trained in part to identify emotional instability shall determine whether armed members of the security organization and alarm station operators, in addition to meeting the requirements stated Appendix B, Section VI, Paragraph B.3(a), have no emotional instabilities that would interfere with the effective performance of assigned duties and responsibilities.

The provisions of 10 CFR Part 73, Appendix B, Section VI, Paragraph B.3.(c), require that a person professionally trained to identify emotional instability shall determine whether unarmed individuals, in addition to meeting the requirements stated Appendix B, Section VI, Paragraph B.3(a), have no emotional instability that would interfere with the effective performance of assigned duties and responsibilities.

Section 2.5.2 of the T&QP provided for the administration of psychological and emotional determinations that will be conducted by appropriately licensed and trained individuals.

The staff reviewed the applicant's descriptions in T&QP Sections 2.5.1 and 2.5.2 for the implementation of the site-specific Physical Protection Program, in accordance with Commission regulations and NUREG–0800 acceptance criteria. Because the applicant's descriptions in the T&QP are consistent with the acceptance criteria in Section 13.6.1 of NUREG–0800, the staff determined that the descriptions in the T&QP meet the requirements of 10 CFR Part 73, Appendix B, Section VI, Paragraphs B.3.(a), (b), and (c) and are therefore acceptable.

Documentation

The provisions of 10 CFR Part 73, Appendix B, Section VI, Paragraph H.1 require, in part, the retention of all reports, records, or other documentation required by Appendix B in accordance with 10 CFR 75.55(q).

Section 2.6 of the T&QP stated that qualified training instructors create the documentation for training activities and security supervisors attest to these records, as required. Records are retained in accordance with Section 22 of the PSP as described in Subsection 13.6.4.1.22 of this SER.

The staff reviewed the applicant's description in T&QP Section 2.6 for the implementation of the site-specific Physical Protection Program, in accordance with Commission regulations and NUREG–0800 acceptance criteria. Because the applicant's description in the T&QP is consistent with the acceptance criteria in Subsection 13.6.1 of NUREG–0800, the staff determined that the description in the T&QP meets the requirements of 10 CFR Part 73, Appendix B, Section VI, Paragraph H.1 and is therefore acceptable.

Physical Requalification

The provisions of 10 CFR Part 73, Appendix B, Section VI, Paragraph B.5 require that: (a) at least annually, armed and unarmed individuals shall be required to demonstrate the capability to meet the physical requirements of this appendix and the licensee's T&QP; and (b) the physical requalification of each armed and unarmed individual must be documented by a qualified training instructor and attested to by a security supervisor.

Section 2.7 of the T&QP stated that physical requalification is conducted at least annually and documented as described in the PSP.

The staff reviewed the applicant's description in T&QP Section 2.7 for the implementation of the site-specific Physical Protection Program, in accordance with Commission regulations and NUREG–0800 acceptance criteria. Because the applicant's description in the T&QP is consistent with the acceptance criteria in Subsection 13.6.1 of NUREG–0800, the staff

determined that the description in the T&QP meets the requirements of 10 CFR Part 73, Appendix B, Section VI, Paragraph B.5 and is therefore acceptable.

13.6.4.2.3 Individual Training and Qualification

Duty Training

The provisions of 10 CFR Part 73, Appendix B, Section VI, Paragraph C.1, provided for duty training and qualification requirements. The regulation states, in part, that all personnel who are assigned to perform any security-related duty or responsibility shall be trained and qualified to perform assigned duties and responsibilities to ensure that each individual possesses the minimum knowledge, skills, and abilities required to effectively carry out those assigned duties and responsibilities. Each individual who is assigned duties and responsibilities identified in the commission-approved security plans shall be trained before assignment in accordance with the requirements of the Part 73, Appendix B, and T&QP and the PSP. Such personnel must be trained and qualified in the use of all equipment or devices required to effectively perform all assigned duties and responsibilities.

Section 3.1 of the T&QP details the requirements that individuals must be trained in their assigned duties, meet minimum qualifications, and be trained and qualified in all equipment or devices required prior to performing their duties.

The staff reviewed the applicant's descriptions in T&QP Sections 3.0 and 3.1 for the implementation of the site-specific Physical Protection Program, in accordance with Commission regulations and NUREG–0800 acceptance criteria. Because the applicant's descriptions in the T&QP are consistent with the acceptance criteria in Subsection 13.6.1 of NUREG–0800, the staff determined that the descriptions in the T&QP meet the requirements of 10 CFR Part 73, Appendix B, Section VI, Paragraph C.1 and are therefore acceptable.

On-the-Job Training

The provisions of 10 CFR Part 73, Appendix B, Section VI, Paragraphs C.2.(a) through (c) provide requirements for on-the-job training. On-the-job training performance standards and criteria must ensure that each individual demonstrates the requisite knowledge, skills and abilities needed to effectively carry out assigned security duties and responsibilities. Individuals assigned contingency duties must complete a minimum of 40 hours of on-the-job training.

On-the-job training for contingency activities and drills must include, but is not limited to, hands-on application of knowledge, skills, and abilities related to: (1) response team duties; (2) use of force; (3) tactical movement; (4) cover and concealment; (5) defensive positions; (6) fields of fire; (7) redeployment; (8) communications (primary and alternate); (9) use of assigned equipment; (10) target sets; (11) table top drills; (12) command and control duties; and (13) the licensee protective strategy.

The T&QP provided a comprehensive discussion of the applicant's approach to meeting the requirements for on-the-job training.

The staff reviewed the applicant's description in T&QP Section 3.2 for the implementation of the site-specific Physical Protection Program, in accordance with Commission regulations NUREG–0800 acceptance criteria. Because the applicant's description in the T&QP is consistent with the acceptance criteria in Subsection 13.6.1 of NUREG–0800, the staff determined that the

description in the T&QP meets the requirements of 10 CFR Part 73, Appendix B, Section VI, Paragraphs C.2(a) through (c) and is therefore acceptable.

Critical Task Matrix

The provisions of 10 CFR Part 73, Appendix B, Section VI, Paragraph C.2.(b) require, in part, that each individual who is assigned duties and responsibilities identified in the Commission-approved security plans, the licensee protective strategy, and the implementing procedures shall, before assignment, demonstrate proficiencies in implementing the knowledge, skills, and abilities to perform the assigned duties.

The T&QP contains a critical task matrix as Table 1 of the T&QP. This matrix addresses the means through which each individual will demonstrate the required proficiencies. Tasks that individuals must perform are listed in RG 5.75, Revision 1.

The staff reviewed the applicant's description in T&QP Section 3.3 for the implementation of the site-specific Physical Protection Program, in accordance with Commission regulations and NUREG–0800 acceptance criteria. Because the applicant's description in the T&QP is consistent with the acceptance criteria in Subsection 13.6.1 of NUREG–0800, the staff determined that the description in the T&QP meets the requirements of 10 CFR Part 73, Appendix B, Section VI, Paragraph C.2.(b) and is therefore acceptable.

Initial Training and Qualification Requirements

The provisions of 10 CFR Part 73, Appendix B, Section VI, Paragraphs C.1.(a) through (b), provide the requirements for duty training.

The provisions of 10 CFR Part 73, Appendix B, Section VI, Paragraph D.1.(a), provide requirements for demonstrating qualifications.

Section 3.4 of the T&QP adds that individuals are trained and qualified before performing security-related duties in the security organization and must meet the minimum qualifying standards in Sections 3.4.1 and 3.4.2.

Written Examination

The provisions of 10 CFR Part 73, Appendix B, Section VI, Paragraph D.1.(b)(1), state that written exams must include those elements listed in the Commission-approved T&QP to demonstrate an acceptable understanding of assigned duties and responsibilities and to include the recognition of potential tampering involving both safety and security equipment and systems.

Hands-On Performance Demonstration

The provisions of 10 CFR Part 73, Appendix B, Section VI, Paragraph D.1.(b)(2), require that armed and unarmed individuals shall demonstrate hands-on performance of assigned duties and responsibilities by performing a practical hands-on demonstration for required tasks. The hands-on demonstration must ensure that the theory and associated learning objectives for each required task are considered and each individual demonstrates the knowledge, skills, and abilities required to effectively perform the task.

Sections 3.4.1 and 3.4.2 of the T&QP describe the measures the applicant will implement to meet the requirements and as has otherwise been described in 10 CFR Part 73, Appendix B, Section VI, Paragraph D.1(b)(2)..

The staff reviewed the applicant's descriptions in T&QP Sections 3.4, 3.4.1, and 3.4.2 of the implementation of the site-specific Physical Protection Program, in accordance with Commission regulations and NUREG–0800 acceptance criteria. Because the applicant's descriptions in the T&QP are consistent with the acceptance criteria in Subsection 13.6.1 of NUREG–0800, the staff determined that the descriptions in the T&QP meet the requirements of 10 CFR Part 73, Appendix B, Sections VI , Paragraph C.1 and D.1 and are therefore acceptable.

Continuing Training and Qualification

The provisions of 10 CFR Part 73, Appendix B, Section VI, Paragraph D.2 state, in part, that armed and unarmed individuals shall be requalified at least annually, in accordance with the requirements of this appendix and the Commission-approved T&QP. The results of requalification must be documented by a qualified training instructor and attested to by a security supervisor.

Section 3.5 of the T&QP discusses the management of the Requalification Program to ensure that each individual is trained and qualified. In part, the applicant's plan provided that annual requalification may be completed up to three months before or three months after the scheduled date. However, the next annual training must be scheduled 12 months from the previously scheduled date rather than the date the training was actually completed.

The staff reviewed the applicant's description in T&QP Section 3.5 of the implementation of the site-specific Physical Protection Program, in accordance with Commission regulations and NUREG–0800 acceptance criteria. Because the applicant's description in the T&QP is consistent with the acceptance criteria in Subsection 13.6.1 of NUREG–0800, the staff determined that the description in the T&QP meets the requirements of 10 CFR Part 73, Appendix B, Section VI , Paragraph D.2 and is therefore acceptable.

Annual Written Examination

The provisions of 10 CFR Part 73, Appendix B, Section VI, Paragraph D.1.(3), state that armed individuals shall be administered an annual written exam that demonstrates the required knowledge, skills, and abilities to carry out assigned duties and responsibilities as an armed member of the security organization. The annual written exam must include those elements listed in the Commission-approved T&QP to demonstrate an acceptable understanding of assigned duties and responsibilities.

Section 3.5.1 of the T&QP provided that each individual will be tested, in part, with an annual written exam that, at a minimum, covers the role of security personnel; the use of deadly force; the requirements in 10 CFR 73.21; authority of private security personnel; the power of arrest; search and seizure; offsite law enforcement responses; and tactics, tactical deployment, and engagement.

The staff reviewed the applicant's description in T&QP Section 3.5.1 of the implementation of the site-specific Physical Protection Program, in accordance with Commission regulations and NUREG–0800 acceptance criteria. Because the applicant's description in the T&QP is

consistent with the acceptance criteria in Subsection 13.6.1 of NUREG–0800, the staff determined that the description in the T&QP meets the requirements of 10 CFR Part 73, Appendix B, Section VI, Paragraph D.1.(3) and is therefore acceptable.

Demonstration of Knowledge Skills, and Abilities

The provisions of 10 CFR Part 73, Appendix B, Section VI, Paragraphs A., B., C., D., (A.4, C.3(d), D.1(a), D.1(b)(2), state, in part, that an individual must demonstrate required knowledge, skills, and abilities to carry out assigned duties and responsibilities.

Section 3.5.2 of the T&QP stated that all knowledge, skills and abilities will be demonstrated in accordance with a Systematic Approach to Training Program, similar to what is described in RG 5.75.

The staff reviewed the applicant's description in T&QP Section 3.5.2 of the implementation of the site-specific Physical Protection Program, in accordance with Commission regulations and NUREG–0800 acceptance criteria. Because the applicant's description in the T&QP is consistent with the acceptance criteria in subsection 13.6.1 of NUREG–0800, the staff determined that the description in the T&QP meets the requirements of 10 CFR Part 73, Appendix B, Sections VI.A, VI.B, VI.C, and VI.D; and is therefore acceptable.

Weapons Training and Qualification

1. General Firearms Training

The provisions of 10 CFR Part 73, Appendix B, Section VI , Paragraph E, state that armed members of the security organization shall be trained and qualified in accordance with the requirements of this appendix and the Commission-approved T&QP. Training must be conducted by certified firearms instructors who shall be recertified at least every three years. Licensees shall conduct annual firearms familiarization and armed members of the security organization must participate in weapons range activities on a nominal four-month periodicity.

Section 3.6.1 of the T&QP addresses the requirements in 10 CFR Part 73, Appendix B, Section VI, Paragraphs E.1.(d)(1) through (11), and includes the requirements for training in the use of deadly force and participation in weapons range activities on a nominal four-month periodicity. Each armed member of the security organization is trained and qualified by a certified firearms instructor for the use and maintenance of each assigned weapon to include but not limited to, marksmanship, assembly, disassembly, cleaning, storage, handling, clearing, loading, unloading, and reloading, for each assigned weapon.

The staff reviewed the applicant's description in T&QP Section 3.6.1 of the implementation of the site-specific Physical Protection Program, in accordance with Commission regulations and NUREG–0800 acceptance criteria. Because the applicant's description in the T&QP is consistent with the acceptance criteria in Subsection 13.6.1 of NUREG–0800, the staff determined that the description in the T&QP meets the requirements of 10 CFR Part 73, Appendix B, Section VI, Paragraph E.1 and is therefore acceptable.

2. General Weapons Qualification

The provisions of 10 CFR Part 73, Appendix B, Section VI, Paragraph F.1, require that qualification firing must be accomplished in accordance with Commission requirements and the

Commission-approved T&QP for assigned weapons. The results of weapons qualification and requalification must be documented and retained as a record.

Section 3.6.2 of the T&QP stated that all armed personnel are qualified and requalified in assigned weapons. All weapons qualifications and requalification will be documented and retained as a record.

The staff reviewed the applicant's description in T&QP Section 3.6.2 of the implementation of the site-specific Physical Protection Program, in accordance with Commission regulations and NUREG–0800 acceptance criteria. Because the applicant's description in the T&QP is consistent with the acceptance criteria in Subsection 13.6.1 of NUREG–0800, the staff determined that the description in the T&QP meets the requirements of 10 CFR Part 73, Appendix B, Section VI , Paragraph F.1 and is therefore acceptable.

3. Tactical Weapons Qualification

The provisions of 10 CFR Part 73, Appendix B, Section VI, Paragraph F.2, require that the licensee conduct tactical weapons qualifications. The licensee's T&QP must describe the firearms used, the Firearms Qualification Program, other tactical training required to implement the Commission-approved security plans and the licensee's protective strategy, and implementing procedures. The licensee will develop tactical qualification and requalification courses that must describe the performance criteria needed to include the site-specific conditions (such as lighting, elevation, and fields-of-fire) under which assigned personnel shall be required to carry out their assigned duties.

Section 3.6.3 of the T&QP stated that a tactical qualification course of fire is to be used to assess armed security force personnel in tactical situations to ensure that they are able to demonstrate the required tactical knowledge, skills, and abilities to remain proficient.

The staff reviewed the applicant's description in T&QP Section 3.6.3 of the implementation of the site-specific Physical Protection Program, in accordance with Commission regulations and NUREG–0800 acceptance criteria. Because the applicant's description in the T&QP is consistent with the acceptance criteria in Subsection 13.6.1 of NUREG–0800, the staff determined that the description in the T&QP meets the requirements of 10 CFR Part 73, Appendix B, Section VI, Paragraph F.2 and is therefore acceptable.

Firearms Qualification Courses

The provisions of 10 CFR Part 73, Appendix B, Section VI, Paragraph F.3, state, in part, that the licensee shall conduct the following qualification courses for each weapon used: (a) an annual daylight fire qualification course; and (b) an annual night fire qualification course.

Courses of Fire

The provisions of 10 CFR Part 73, Appendix B, Section VI, Paragraph F.4, describe required courses of fire.

Section 3.6.4 of the T&QP described the firearms qualification scores for each courses of fire used to ensure that armed members of the security organization are properly trained and qualified. Firearm courses are conducted individually for handguns, shotguns, semiautomatic rifles, and enhanced weapons.

The staff reviewed the applicant's description in T&QP Section 3.6.4 of the implementation of the site-specific Physical Protection Program, in accordance with Commission regulations and NUREG–0800 acceptance criteria. Because the applicant's description in the T&QP is consistent with the acceptance criteria in Subsection 13.6.1 of NUREG–0800, the staff determined that the description in the T&QP meets the requirements of 10 CFR Part 73, Appendix B, Sections VI, Paragraph F.3 and F.4, and is therefore acceptable.

Firearms Requalification

The provisions of 10 CFR Part 73, Appendix B, Section VI, Paragraph F.5, state that armed members of the security organization shall be requalified for each assigned weapon at least annually, in accordance with Commission requirements and the Commission-approved T&QP, and the results documented and retained as a record. Firearms requalification must be conducted using the courses of fire outlined 10 CFR Part 73, Appendix B, Sections VI.F.2, VI.F.3, and VI.F.4.

Section 3.6.5 of the T&QP stated that armed members of the security organization will re-qualify at least annually with each weapon assigned using the courses of fire in the T&QP.

The staff reviewed the applicant's description in T&QP Section 3.6.5 of the implementation of the site-specific Physical Protection Program, in accordance with Commission regulations NUREG–0800 acceptance criteria. Because the applicant's description in the T&QP is consistent with the acceptance criteria in Subsection 13.6.1 of NUREG–0800, the staff determined that the description in the T&QP meets the requirements of 10 CFR Part 73, Appendix B, Section VI, Paragraph F.5 and is therefore acceptable.

Weapons, Personal Equipment, and Maintenance

The provisions of 10 CFR Part 73, Appendix B, Section VI, Paragraph G, provide the requirements for weapons, personal equipment and maintenance. These requirements state that the licensee shall provide armed personnel with weapons that are capable of performing the function stated in the Commission-approved security plans, the licensee's protective strategy, and implementing procedures. In addition, the licensee shall ensure that each individual is equipped with or has ready access to all personal equipment or devices required for the effective implementation of the Commission-approved security plans, the licensee's protective strategy, and implementing procedures.

Section 3.7 of the T&QP stated that personnel are provided with weapons and personal equipment necessary to meet the plans and the protective strategy. The equipment is described in Section 9.0 of the PSP, and maintenance is performed as described in Section 20.0 of the PSP. The staff's review of Section 9, "Security Personnel Training" and Section 20, "Maintenance, Testing, and Calibration," of the PSP is in Subsections 13.6.4.1.9 and 13.6.4.1.20 of this SER.

The staff reviewed the applicant's description in T&QP Section 3.7 of the implementation of the site-specific Physical Protection Program, in accordance with Commission regulations and NUREG–0800 acceptance criteria. Because the applicant's description in the T&QP is consistent with the acceptance criteria in Section 13.6.1 of NUREG–0800, the staff determined that the description in the T&QP meets the requirements of 10 CFR Part 73, Appendix B, Section VI.G and is therefore acceptable.

Documentation

The provisions of 10 CFR Part 73, Appendix B, Section VI.H require that the licensee shall retain all reports, records, or other documentation required by this appendix in accordance with the requirements of 10 CFR 73.55(r). The licensee shall retain each individual's initial qualification record for three years after termination of the individual's employment and shall retain each requalification record for three years after it is superseded. The licensee shall document data and test results from each individual's suitability, physical, and psychological qualification and shall retain this documentation as a record for three years from the date of obtaining and recording these results.

Section 3.8 of the T&QP stated that records are retained in accordance with Section 22 "Records" of the PSP. The T&QP also described how the applicant will retain each individual's initial qualification record for three years after termination of the individual's employment and shall retain each re-qualification record for three years after it is superseded.

The staff reviewed the applicant's description in T&QP Section 3.8 of the implementation of the site-specific Physical Protection Program, in accordance with Commission regulations and NUREG–0800 acceptance criteria. Because the applicant's description in the T&QP is consistent with the acceptance criteria in Subsection 13.6.1 of NUREG–0800, the staff determined that the description in the T&QP meets the requirements of 10 CFR Part 73, Appendix B, Section VI, Paragraph H and is therefore acceptable.

13.6.4.2.4 Performance Evaluation Program

The provisions in10 CFR Part 73, Appendix B, Section VI, Paragraph C.3 states the following in part:

(a). Licensees shall develop, implement, and maintain a Performance Evaluation Program that is documented in procedures which describes how the licensee will demonstrate and assess the effectiveness of their onsite physical protection program and protective strategy, including the capability of the armed response team to carry out their assigned duties and responsibilities during safeguards contingency events. The Performance Evaluation Program and procedures shall be referenced in the licensee's Training and Qualifications Plan.

(b). The Performance Evaluation Program shall include procedures for the conduct of tactical response drills and force-on-force exercises designed to demonstrate and assess the effectiveness of the licensee's physical protection program, protective strategy and contingency event response by all individuals with responsibilities for implementing the safeguards contingency plan.

The Performance Evaluation Program must be designed to ensure, in part, that each member of each shift who is assigned duties and responsibilities required to implement the SCP and the licensee's protective strategy participates in at least one tactical response drill on a quarterly basis and one force-on-force exercise on an annual basis.

Section 4 of the T&QP described how the Performance Evaluation Program is consistent with the requirements of 10 CFR Part 73, Appendix B, Section VI, Paragraphs C.3.(a) through (m). The facility procedures include additional details of the Performance Evaluation Program.

The staff reviewed the applicant's description in T&QP Section 4 of the implementation of the site-specific Physical Protection Program, in accordance with Commission regulations and NUREG–0800 acceptance criteria. Because the applicant's description in the T&QP is consistent with the acceptance criteria in Subsection 13.6.1 of NUREG–0800, the staff determined that the description in the T&QP meets the requirements of 10 CFR Part 73, Appendix B, Section VI, Paragraph C.3 and is therefore acceptable.

13.6.4.2.5 Definitions

The provisions of 10 CFR Part 73 Appendix B, Section VI , Paragraph J state, in part, that terms defined in 10 CFR Part 50, 10 CFR Part 70, and 10 CFR Part 73 have the same meaning when used in this appendix. Definitions are in PSP Appendix A, "Glossary of Terms and Acronyms." On the basis of its review, the staff determined that the definitions sections of the PSP meet the requirements of 10 CFR 73.2, and are, therefore, acceptable.

The staff reviewed the definitions sections of the PSP, which meet the requirements of 10 CFR 73.2 and are therefore acceptable.

Included in this section of the T&QP is the Critical Task Matrix, which is considered SGI and is not evaluated in this SER.

The staff issued RAI 13.06.01-30, requesting the applicant to address the absence of specific wording in T&QP Table 1, Task 18. In its response to RAI 13.06.01-30, dated May 10, 2010 (ML101380348), the applicant provided a T&QP description that addressed the absent wording in Table 1, Task 18. The staff reviewed the applicant's response to this RAI and determined that revised T&QP Table 1, Task 18 meets the requirements of 10 CFR 52.79(a)(35)(i) and (ii). The staff confirmed that Table 1, Task 18 was revised to insert the absent wording and determined the revision to be acceptable. Therefore, the staff considers RAI 13.06.01-30 to be resolved and closed.

The staff issued RAI 13.06.01-31, requesting the applicant to address the performance criteria stated in T&QP Table 1, Task 20, as well as in the performance methods. In its response to RAI 13.06.01-31, dated June 16, 2010 (ML101690153), the applicant provided a T&QP description that addresses the performance criteria captured in Table 1, Task 20. The staff reviewed the applicant's response to this RAI and determined that the revised T&QP Table 1, Task 20 meets the requirements of 10 CFR Part 73 Appendix B Section VI, Paragraph C.1. The staff confirmed that Table 1, Task 20 was revised to address the required performance criteria and determined the revision to be acceptable. Therefore, the staff considers RAI 13.06.01-31 to be resolved and closed.

The staff reviewed the applicant's description in the T&QP of the Critical Task Matrix tasks for the implementation of the site-specific Physical Protection Program, in accordance with Commission regulations and NUREG–0800 acceptance criteria. Because the applicant's description in the T&QP is consistent with the acceptance criteria in Section 13.6.1 of NUREG-0800, the staff determined that the description in the T&QP meets the requirements of 10 CFR Part 73, Appendix B, and is therefore acceptable.

13.6.4.2.6 Conclusion on the Training and Qualification Plan

On the basis of the staff's review described in Sections 13.6.4.2.1 through 13.6.4.2.5 of this SER, the T&QP meets the requirements of 10 CFR Part 73, Appendix B. The staff concluded that complete and procedurally correct implementation of the plant T&QP will provide a high assurance that activities involving special nuclear materials are not inimical to common defense and security and do not constitute an unreasonable risk to public health and safety.

13.6.4.3 *Appendix C Safeguards Contingency Plan*

13.6.4.3.1 Background Information

This category of information identifies the perceived dangers and incidents that the plan addresses and a general description of how the response is organized.

Purpose of the Safeguards Contingency Plan

The provisions of 10 CFR Part 73, Appendix C, Section II, Paragraph B.1.b, state that the licensee describe the general goals, objectives and operational concepts underlying the implementation of the SCP.

Section 1.1 of the SCP details the purpose and goals of the SCP, including the guidance to security and management for contingency events.

Scope of the Safeguards Contingency Plan

The provisions of 10 CFR Part 73, Appendix C, Section II, Paragraph B.1.c, delineate the types of incidents that are covered by the applicant in the SCP, how the onsite response effort is organized and coordinated to effectively respond to a safeguards contingency event, and how the onsite response for safeguards contingency events has been integrated into other site emergency response procedures.

Section 1.2 of the SCP details the scope of the SCP to analyze and define decisions and actions of security force personnel, as well as facility operations personnel, to achieve and maintain a safe shutdown.

Perceived Danger

The provisions of 10 CFR Part 73, Appendix C, Section II, Paragraph B.1.a require that, consistent with the design-basis threat specified in 10 CFR 73.1(a)(1), the licensee shall identify and describe the perceived dangers, threats, and incidents against which the SCP is designed to protect. Section 1.3 of the SCP outlines the threats used to design the physical protection systems.

The applicant adequately addresses perceived danger, provided a purpose of the plan, and described the scope of the plan.

Definitions

Section 1.4 of the SCP stated that a list of terms and their definitions used in describing operational and technical aspects of the approved SCP, as required by 10 CFR Part 73, Appendix C, Section II, Paragraph B.1.d is in PSP Appendix A.

The staff reviewed the applicant's description in SCP Sections 1, 1.1, 1.2, 1.3, and 1.4 for the implementation of the site-specific Physical Protection Program, in accordance with Commission regulations and NUREG–0800 acceptance criteria. Because the applicant's description in the SCP is consistent with the acceptance criteria in Subsection 13.6.1 of NUREG-0800, the staff determined that the description in the SCP meets the requirements of 10 CFR Part 73, Appendix C, Section II, Paragraph B and is therefore acceptable.

13.6.4.3.2 Generic Planning Base

As required in 10 CFR Part 73, Appendix C, Section II.B.2, this section of the plan defines the criteria for the initiation and termination of responses to security events to include the specific decisions, actions, and supporting information needed to respond to each type of incident covered by the approved SCP.

Situations Not Covered by the Contingency Plan

Section 2.1 of the SCP described the general types of conditions that are not covered in the plan.

Situations Covered by the Contingency Plan

The provisions of 10 CFR Part 73, Appendix C, Section II.B.2.a require, in part, that the plan identify those events that will be used for signaling the beginning or aggravation of a safeguards contingency, according to how they are perceived initially by a licensee's personnel. Licensees shall ensure the detection of unauthorized activities and shall respond to all alarms or other indications signaling a security event, such as the penetration of a PA or vital area or an unauthorized barrier penetration (vehicle or personnel); tampering; bomb threats; or other threat warnings either verbal (such as telephoned threats) or implied (such as an escalation of civil disturbances).

The provisions of 10 CFR Part 73, Appendix C, Section II, Paragraph B.2.b require, in part, that the plan defines the specific objective to be accomplished relative to each identified safeguards contingency event. The objective may be to obtain a level of awareness about the nature and severity of the safeguards contingency, so as to prepare for further responses; to establish a level of response preparedness; or to successfully nullify or reduce any adverse safeguards consequences arising from the contingency.

The provisions of 10 CFR Part 73, Appendix C, Section II, Paragraph B.2.c require, in part, that the licensee identify the data, criteria, procedures, mechanisms, and logistical support necessary to achieve the objectives identified.

Section 2.2 of the SCP described in detail the specific situations covered by and provides a list of objectives for each event and also provides objectives and data required for each event.

The staff reviewed the applicant's descriptions in SCP Sections 2, 2.1, and 2.2 of the implementation of the site-specific Physical Protection Program, in accordance with Commission regulations and NUREG–0800 acceptance criteria. Because the applicant's descriptions in the SCP are consistent with the acceptance criteria in Subsection 13.6.1 of NUREG–0800, the staff determined that the descriptions in the SCP meet the requirements of 10 CFR Part 73, Appendix C, Section II.B.2 and are therefore acceptable.

13.6.4.3.3 Responsibility Matrix

The provisions of 10 CFR Part 73, Appendix C, Section II.B.4, state that this category of information consists of the detailed identification of responsibilities and specific actions to be taken by licensee organizations and/or personnel in response to safeguards contingency events. To achieve this result, the applicant must fulfill the following requirements.

The provisions of 10 CFR Part 73, Appendix C, Section II, Paragraph B.4.a require, in part, that the licensee develop site procedures that consist of matrixes detailing the organization and/or personnel responsible for decisions and actions associated with specific responses to safeguards contingency events. The responsibility matrix and procedures must be referenced in the licensee's SCP.

The provisions of 10 CFR Part 73, Appendix C, Section II, Paragraph B.4.b require, in part, that the responsibility matrix procedures shall be based on the events outlined in the licensee's generic planning base and shall include specific objectives to be accomplished, descriptions of responsibilities for decisions and actions for each event, and an overall description of response actions for each responding entity.

The provisions of 10 CFR Part 73, Appendix C, Section II, Paragraph B.4.c require, in part, that responsibilities are to be assigned in a manner that precludes a conflict of duties and responsibilities that would prevent the execution of the SCP and emergency response plans.

The provisions of 10 CFR Part 73, Appendix C, Section II, Paragraph B.4.d require, in part, that the licensee ensure that predetermined actions can be completed under the postulated conditions.

Section 3 of the SCP includes the Responsibility Matrix, as required by 10 CFR Part 73, Appendix C, Section II.B.4.a. The Responsibility Matrix integrates the response capabilities of the security organization (described in Section 4 of the SCP) as required by Appendix C, Section II, Paragraph B.4.a. with the background information relating to decision/actions and organizational structure (described in Section 1 of the SCP). The Responsibility Matrix provided an overall description of the response actions and their interrelationships, as required by Appendix C, Section II, Paragraph B.4.a. Responsibilities and actions have been predetermined to the maximum extent possible and assigned to specific entities to preclude conflicts that would interfere with or prevent the implementation of the SCP or the ability to protect against the design-basis threat of radiological sabotage as required by Appendix C, Section II, Paragraph B.4.a. In part, the applicant shall ensure that predetermined actions can be completed under the postulated conditions as required by Appendix C, Section II.B.4.d.

The staff reviewed the applicant's description in SCP Section 3 of the implementation of the site-specific Physical Protection Program, in accordance with Commission regulations and NUREG–0800 acceptance criteria. Because the applicant's description in the SCP is consistent with the acceptance criteria in Subsection 13.6.1 of NUREG–0800, the staff determined that the description in the SCP meets the requirements of 10 CFR Part 73, Appendix C, Section II.B.4 and is therefore acceptable.

13.6.4.3.4 Licensee Planning Base

The provisions of 10 CFR Part 73, Appendix C, Section II.B.3, "Licensee Planning Base," require, in part, that the licensee planning base include factors affecting the SCP that are specific for each facility.

Licensee Organization

The provisions of 10 CFR Part 73, Appendix C, Section II.B.3.a require, in part, that the SCP describe the organization's chain of command and delegation of authority during safeguards contingency events to include a general description of how command and control functions will be coordinated and maintained.

Duties/Communication Protocols

Section 4.1.1 of the SCP details the duties and communication protocols of each member of the security organization responsible for implementing any portion of the applicant's protective strategy, which will allow for coordination and maintenance of command and control functions as required by Appendix C, Section II, Paragraph B.3.a.

Security Chain of Command/Delegation of Authority

Section 4.1.2 of the SCP described in details the chain of command and the delegation of authority during normal operations is discussed in Section 4.1 of the PSP. The chain of command and the delegation of authority during contingency events are described in the Responsibility Matrix portions of the SCP. Accordingly, the staff concludes that the applicant has described the chain of command and delegation of authority during contingency events as required by Appendix C, Section II, Paragraph B.3.a.

Physical Layout

The provisions of 10 CFR Part 73, Appendix C, Section II, Paragraph B.3.b require, in part, that the SCP include a site map depicting the physical structures located on the site, including onsite independent spent fuel storage installations and a description of the structures depicted on the map. Plans must also include a description and map of the site in relation to nearby towns; transportation routes (e.g., rail, water, and roads); pipelines; airports; hazardous material facilities; and pertinent environmental features that may have an effect on the coordination of response activities. Descriptions and maps must indicate main and alternate entry routes for law enforcement or other offsite response and support agencies and the location for marshaling and coordinating response activities.

Section 4.2 of the SCP references Section 1.1 of the PSP for layouts of the OCAs, PAs, site maps; and descriptions of site features. The staff confirmed that these layouts, maps, and descriptions include the detailed information required by Appendix C, Section II, Paragraph B.3.b and described above.

Safeguards Systems

The provisions of 10 CFR Part 73, Appendix C, Section II, Paragraph B.3.c require, in part, that the SCP include a description of the physical security systems that support and influence how the licensee will respond to an event, in accordance with the design-basis threat described in

10 CFR 73.1(a). The description must begin with onsite physical protection measures implemented at the outermost perimeter and must move inward, through those measures implemented to protect target set equipment.

Section 4.3 of the SCP stated that safeguards systems are described in PSP Sections 9, 11, 12, 13, 15, and 16, and in facility implementing procedures/documents. Section 8 of the SCP described how physical security systems will be used to respond to a threat at the site, as required by Appendix C, Section II, Paragraph B.3.c. As further required by Appendix C, Section II.B.3.c, the SCP description begins with physical protection measures proposed at the outermost facility perimeter, and moves inward through those measures proposed protect target set equipment.

Law Enforcement Assistance

The provisions of 10 CFR Part 73, Appendix C, Section II, Paragraph B.3.d require, in part, that the licensee provide a listing of available law enforcement agencies and a general description of their response capabilities, their criteria for responding, and a discussion of working agreements or arrangements for communicating with these agencies.

Section 4.4 of the SCP stated in detail the role of LLEAs in the site's protective strategy. In accordance with Appendix C, Section II, Paragraph B.3.d, these details include LLEA response capabilities, LLEA criteria for response, and the working agreements or arrangements for communicating with these LLEAs. Additional details regarding LLEA are included in Section 8 of the PSP and Section 5.6 of the SCP.

Policy Constraints and Assumptions

The provisions of 10 CFR Part 73, Appendix C, Section II, Paragraph B.3.e require, in part, that the SCP contain a discussion of State laws, local ordinances, and company policies and practices that govern licensee responses to incidents. The SCP must also include (but is not limited to) the: (1) use of deadly force; (2) recall of off-duty employees; (3) site jurisdictional boundaries; and (4) use of enhanced weapons, if applicable.

Section 4.5 of the SCP described the site security policies, including the use of deadly force provisions for the recall of off-duty employees, site jurisdictional boundaries, and the authority to request offsite assistance as required by Appendix C, Section II, Paragraph B.3.e.

Administrative and Logistical Considerations

The provisions of 10 CFR Part 73, Appendix C, Section II, Paragraph B.3.f require, in part, that the licensee provide descriptions of licensee practices that influence how the security organization responds to a safeguards contingency event to include (but is not limited to) a description of the procedures that will be used for ensuring that equipment needed to facilitate a response will be readily accessible, in good working order, and in sufficient supply.

Section 4.6 of the SCP outlines administrative duties of the security manager, nuclear security captain, facility procedures, and administrative forms.

The staff issued RAI 13.06.01-32, requesting the applicant to address the requirements of Appendix C Section II B.3.c.(iii), concerning an inconsistency with a position title in the SCP. In its response to RAI 13.06.01-32, dated May 10, 2010 (ML101380348), the applicant stated that

the inconsistency will be revised in the SCP. The staff reviewed the applicant's response to this RAI and determined that it meets the requirements of Appendix C Section II B.3.c.(iii). The staff confirmed that the SCP was revised to correct the inconsistency concerning a position title and determined the revision to be acceptable. Therefore, the staff considers RAI 13.06.01-32 to be resolved and closed.

The staff reviewed the applicant's descriptions in SCP Sections 4, 4.1, 4.1.1, 4.1.2, and 4.2 through 4.6 of the implementation of the site-specific Physical Protection Program, in accordance with Commission regulations and NUREG–0800 acceptance criteria. Because the applicant's descriptions in the SCP are consistent with the acceptance criteria in Subsection 13.6.1 of NUREG–0800, the staff determined that the descriptions in the SCP meet the requirements of 10 CFR Part 73, Appendix C, Section II.B.3 and are therefore acceptable.

13.6.4.3.5 Response Capabilities

This section outlines the applicant's responses to threats to the facility. As set forth below the applicant described in details how they protect against the design-basis threat with onsite and offsite organizations, consistent with the regulations in 10 CFR 50.54(p)(1); 10 CFR 73.55(k); 10 CFR Part 73, Appendix B, Section VI; and 10 CFR Part 73, Appendix C, Section II, Paragraph B.3. In addition, 10 CFR Part 73, Appendix C, "Introduction," states, in part, that it is important to note that a licensee's SCP is intended to complement any emergency plans developed pursuant to Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities," to 10 CFR Part 50 and 10 CFR 52.17, "Content of Application; Technical Information and Final Safety Analysis Report."

Response to Threats

Section 5.1 of the SCP stated that the protective strategy is designed to defend the facility against all aspects of the design-basis threat. Each organization has defined roles and responsibilities.

Armed Response Team

Section 5.2 of the SCP identifies individuals from the Responsibility Matrix and their role in the site's protective strategy. This section also notes the minimum number of individuals and their contingency equipment to implement the protective strategy. The applicant described the armed response team, which is consistent with 10 CFR 73.55(k)(4), (5), (6) and (7); 10 CFR Part 73, Appendix B, Section VI; and 10 CFR Part 73, Appendix C, Section II.B.3.

The staff issued RAI 13.06.01-33, requesting the applicant to address the requirements of 10 CFR 73.55(k)(6)(i) concerning a clarification of the support provided to responders. In its response to RAI 13.06.01-33, dated May 10, 2010 (ML101380348), the applicant provided a SCP description that revises Section 5.2 to provide clarity. The staff reviewed the applicant's response to this RAI and determined that the revised SCP description meets the requirements of 10 CFR 73.55(k)(6)(i). The staff confirmed that the SCP was revised to provide clarity to Section 5.2 and determined the change to be acceptable. Therefore, the staff considers RAI 13.06.01-33 to be resolved and closed.

Supplemental Security Officer

Section 5.3 of the SCP described in details the role of supplemental security officers in the site's protective strategy. The applicant described the use of supplemental security officers, which is consistent with the requirements in 10 CFR 73.55(k)(4).

Facility Operations Response

Section 5.4 of the SCP details the role of operations personnel in the applicant's protective strategy including responsibilities, strategies, and conditions for operator actions.

Emergency Plan Response

Section 5.5 of the SCP notes the integration of the Emergency Plan (EP) with the site's protective strategy and includes some examples of how the EP can influence the protective strategy, as discussed in 10 CFR 73.55(b)(11).

Local Law Enforcement Agencies (LLEAs)

Section 5.6 of the SCP documents the current agreements with applicable LLEA, and therefore meets the requirements of 10 CFR 73.55(k)(9) and 10 CFR Part 73, Appendix C, Section II.B.3.d and lists the LLEAs that will respond to the site, as a part of the protective strategy. Details on the response of the LLEA are located in Section 8 of the PSP.

State Response Agencies

Section 5.7 of the SCP meets the requirements of 10 CFR 73.55(k)(9) and 10 CFR Part 73, Appendix C, Section II.B.3.d and lists the State response agencies that will respond to the site, as a part of the protective strategy.

Federal Response Agencies

Section 5.8 of the SCP documents the current agreements with applicable LLEA, and therefore meets the requirements of 10 CFR 73.55(k)(9) and 10 CFR Part 73, Appendix C, Section II.B.3.d and lists the Federal response agencies that will respond to the site, as a part of the protective strategy. Furthermore, Section 5.7 provided a general description of the LLEA response capability and meets the corresponding portions of 10 CFR 73.55(k)(9).

Response to ISFSI Events

STP does not have an independent spent fuel storage installation (ISFSI), so this section does not apply.

The staff reviewed the applicant's descriptions in SCP Sections 5.0 through 5.9 of the implementation of the site-specific Physical Protection Program, in accordance with Commission regulations and NUREG–0800 acceptance criteria. Because the applicant's descriptions in the SCP are consistent with the acceptance criteria in Subsection 13.6.1 of NUREG–0800, the staff determined that these descriptions meet the requirements of 10 CFR 50.54(p)(1); 10 CFR 73.55(k); 10 CFR Part 73, Appendix B, Section VI; and 10 CFR Part 73, Appendix C, Section II.B.3 and are therefore acceptable. In addition, Appendix C, Section II.A, "Introduction," states, in part, that it is important to note that an

applicant's SCP is intended to complement any EPs developed pursuant to Appendix E to 10 CFR Part 50 and 10 CFR 52.17.

13.6.4.3.6 Defense-In-Depth

Section 6 of the SCP lists the site's physical security characteristics and programs and the strategy elements that illustrate the defense-in-depth nature of the site's protective strategy, as required in 10 CFR 73.55(b)(3).

The staff reviewed the applicant's description in SCP Section 6 of the implementation of the site-specific Physical Protection Program, in accordance with Commission regulations and NUREG–0800 acceptance criteria. Because the applicant's description in the SCP is consistent with the acceptance criteria in Subsection 13.6.1 of NUREG–0800, the staff determined that the description in the SCP meets the requirements of 10 CFR 73.55(b)(3) and is therefore acceptable.

13.6.4.3.7 Primary Security Functions

Section 7 of the SCP described the primary security functions of the site and their roles in the site's protective strategy. This section also notes the development of target sets and their functions in the development of the site's protective strategy.

The staff issued RAI 13.06.01-34, requesting the applicant to provide the title of the source document used to develop information in Section 7 of the SCP.

In its response to RAI 13.06.01-34, dated December 6, 2010 (ML103430271), the applicant provided the source document used to develop information in Section 7 of the SCP. The staff reviewed the applicant's response to this RAI and the revised SCP and concluded that the description meets the requirements of 10 CFR Part 73, Appendix C, Section II B.3.c (v). The staff confirmed that the SCP was revised to identify the source document to develop the information in Section 7 and determined the change to be acceptable. Therefore, the staff considers RAI 13.06.01-34 to be resolved and closed.

The staff reviewed the applicant's description in SCP Section 7 of the implementation of the site-specific Physical Protection Program, in accordance with Commission regulations and NUREG–0800 acceptance criteria. Because the applicant's description in the SCP is consistent with the acceptance criteria in Subsection 13.6.1 of NUREG-0800, the staff determined that the description in the SCP meets the requirements of 10 CFR 73.55(b) and is therefore acceptable.

13.6.4.3.8 Protective Strategy

Provisions of 10 CFR Part 73, Appendix C, Section II, Paragraph B.3.c.(v), require that licensees develop, implement, and maintain a written protective strategy that shall: (1) be designed to meet the performance objectives of 10 CFR 73.55(a) through (k); (2) identify predetermined actions, areas of responsibilities, and timelines for the deployment of armed personnel; (3) contain measures that limit the exposure of security personnel to possible attack; (4) contain a description of the physical security systems and measures that provide defense-in-depth; (5) describe the specific structure and responsibilities of the armed response organization; and (6) provide a command and control structure.

Section 8 of the SCP described the site's protective strategy.

The staff issued RAI 13.06.01-35, requesting the applicant to correct a reference in Section 8 of the SCP. In its response to RAI 13.06.01-35, dated May 10, 2010 (ML101380348), the applicant provided a SCP description that corrects the reference identified in Section 8 of the SCP. The staff reviewed the applicant's response to this RAI and determined that the revised SCP description meets the requirements of 10 CFR 50.54. The staff confirmed that the SCP was revised to correct the reference in Section 8 of the SCP and determined the revision to be acceptable. Therefore, the staff considers RAI 13.06.01-35 to be resolved and closed.

The applicant provided additional details concerning the protective strategy and physical structures and systems in Revision 3 of the ICE.

The staff reviewed the applicant's description in SCP Section 8 of the implementation of the site-specific Physical Protection Program, in accordance with Commission regulations and NUREG–0800 acceptance criteria. Because the applicant's description in the SCP is consistent with the acceptance criteria in Subsection 13.6.1 of NUREG–0800, the staff determined that the description in the SCP meets the requirements of 10 CFR Part 73, Appendix C, Section II, Paragraph B.3.c(v) and is therefore acceptable.

13.6.4.3.9 Conclusions on the Safeguards Contingency Plan

On the basis of the staff's review described in Sections 13.6.4.3.1 through 13.6.4.3.8 of this SER, the SCP meets the requirements of 10 CFR Part 73, Appendix C, in accordance with the design-basis threat of radiological sabotage as stated in 10 CFR 73.1. The target sets, i.e., Target Set Analysis and Site Protective Strategy, are in facility-implementing procedures that were not subject to NRC review as part of this COL application and are therefore subject to future NRC inspections, in accordance with 10 CFR 73.55(c)(7)(iv) and 10 CFR Part 73, Appendix C, Section II, Paragraph B.5(iii). The staff concluded that the complete and procedurally correct implementation of the SCP will provide a high assurance that activities involving special nuclear materials are not inimical to common defense and security and do not constitute an unreasonable risk to public health and safety.

13.6.4.3.10 COL Information Items

The staff issued RAI 13.06-15, requesting the applicant to address the resolution of all security combined license information items that are identified in Section13.6, "Physical Security," of the FSAR.

In its response to RAI 13.06-15, dated December 6, 2010 (ML103430271), the applicant stated that a review was completed of the ABWR DCD NUREG 1503, Section 13.6, and of the SGI SSAR Section 13.6.3 for security combined license information items. The applicant has addressed the following items in the RAI response:

COL License Information Item 13.6.2-1 [draft final safety evaluation report (DFSER) COL action item 13.6.2-1] requires a COL applicant to provide a site-specific physical security, safeguards contingency and training (security plans), in accordance with 10 CFR 50.34 and 10 CFR 73.55.

The applicant provided the site-specific security plans as Part 8 of the COL application.

COL License Information Item 13.6.2-2, identifies the COL applicant's determination that operational status must be based on tests conducted under realistic operating conditions of a sufficient duration to demonstrate that: (1) the equipment is properly operating and capable of

long-term, reliable operation; (2) procedures have been developed, approved, and implemented; and (3) personnel responsible for security operations and maintenance have been properly trained and have demonstrated their capability of performing their assigned duties and responsibilities.

The applicant identified security equipment operability and reliability by completing physical security ITAAC, which are in the STP COL application. Equipment operability and reliability by completing physical security ITAAC submits it in Part 9 of the COL application. The applicant described security procedures throughout the PSP, and submits it in Part 8 of the COL application. The T&QP submitted as Part 8 of the COL application specifically requires personnel to be properly trained to perform maintenance activities, and the PSP described maintenance personnel as individuals trained to perform maintenance, testing, and calibration on security equipment.

COL License Information Item 13.6.3-10 (DFSER COL Action Item 13.6.3.3-1), requires the COL applicant to provide a classification of the CAS and SAS.

The applicant provided the site-specific PSP as Part 8 of the COL application. The designation of the CAS and SAS are defined in Section 14.5 of the PSP.

COL License Information Item 13.6.3.11 (DFSER COL Action Item 13.6.3.3-2), requires the COL applicant to confirm that the locations of vital systems and operations are in vital areas.

The applicant provided the final list for vital areas and vital equipment in the SGI ICE. Also, physical security ITAAC number 1 in Part 9 of the STP COL application specifies that vital equipment will be located only within vital areas.

COL License Information Item 13.6.3.3-3 (DFSER COL Action Item 13.6.3.3-3), requires the COL applicant to include an evaluation of the capability of the security response force to interdict the violent external assault postulated in 10 CFR 73.1(a)(1)(i), which properly accounts for the minimum delay provided by the vital area barriers and doors.

The applicant has submitted the ICE, which described the site layout; provided a total number of armed responders for the armed response team; provided the rationale for plant equipment that was protected as vital equipment; and described the security of physical structures and equipment. The applicant has requested to complete certain site and security design details after the issuance of the license for STP, Units 3 and 4. The completion of these security design details are addressed in License Condition 13.6-1, which is captured in Subsection 13.6.5.1 of this SER.

COL License Information Item 13.6.3.5-1 (DFSER COL Action Item 13.6.3.5-1), requires the COL applicant to demonstrate that door controls are compatible with RG 5.12 for the positive control of vital areas.

The applicant provided the site-specific PSP as Part 8 of the COL application. Sections 13 and 22.3.3 of the PSP describe the positive controls for vital areas.

COL License Information Item 13.6.3.5-2 (DFSER COL Action Item 13.6.3.5-2), requires the COL applicant to evaluate compliance with prompt access to vital equipment.

The applicant provided the site-specific PSP as Part 8 of the COL application. Sections 13 and 14 of the PSP describe prompt access to vital equipment.

The staff reviewed the applicant's technical information and determined that the applicant's response to RAI 13.06-15, dated December 6, 2010 (ML103430271) is acceptable and meets the requirements for adequately addressing COL license information items regarding implementation of the PSP. Therefore, the staff considers RAI 13.06-15 to be resolved and closed.

13.6.5 Post-Combined License Activities

13.6.5.1 *License Conditions*

The license for a nuclear facility contains terms and conditions for operation. 10 CFR 50.54, "Conditions of licenses," identifies the standard conditions, with some exceptions, which are applicable to every COL issued. In addition to those standard conditions, the COL applicant proposes additional license conditions to address the completion of post-licensing information commitments or COL license information items that cannot be completed until after the license has been issued.

In Part 2 of the STP, Units 3 and 4, COL application, the applicant lists several license conditions relating to physical security.

The STP COL FSAR, Table 13.4S-1 describes license conditions for implementation of Security Programs (Physical Security Plan, Safeguards Contingency Plan, Training and Qualification Plan, Cyber Security Program). However, the staff has not proposed any license condition implementation requirements for the STP COL application since the implementation milestones for these security programs are specified by 10 CFR 73.55(a)(4). Because the implementation milestones for these security programs are controlled by 10 CFR 73.55(a)(4) rather than by license condition, the applicant will need to update Table 13.4S-1 to reflect this. Such updating would occur in the next FSAR update pursuant to 10 CFR 50.71(e), which requires applicants/licensees to update the FSAR to reflect the latest information developed.

License Condition

For the reasons discussed in the technical evaluation section above, the staff determined the following license condition proposed by the applicant to be acceptable.

> No later than 12 months after issuance of the COL, the licensee shall submit to the Director of NRO, a schedule, that supports planning for and conduct of NRC inspection of the physical security programs. The schedule shall be updated every 6 months until 12 months before scheduled fuel load, and every month thereafter until the physical security program has been fully implemented.

The implementation milestone schedule license condition for operational programs is captured in License Condition 13.4S-2 in Section 13.4S.5 of this SER.

License Condition

For the reasons discussed in the technical evaluation section above, the applicant proposed to include the following license condition for physical security:

License Condition 13.6-1

8 months before fuel is allowed onsite (protected area), STP shall develop a written protective strategy that describes in detail the physical protection measures, security systems, and deployment of the armed response team relative to site-specific conditions, to include but not limited to, the final facility layout, and the location of target set equipment and elements in accordance with 10 CFR Part 73, Appendix C.II.B.3.c.(v).

13.6.6 Conclusion

The staff's finding related to information incorporated by reference is in NUREG–1503. The staff reviewed the application and checked the referenced DCD. The staff's review confirmed that the applicant has addressed the required information relating to physical security, and no outstanding information is expected to be addressed in the STP COL FSAR related to this section. Pursuant to 10 CFR 52.63(a)(5) and 10 CFR Part 52, Appendix A, Section VI.B.1, all nuclear safety issues relating to physical security that were incorporated by reference have been resolved.

The staff's reviews of the STP, Units 3 and 4, PSP, T&QP, and SCP focused on ensuring that these plans describe the necessary programmatic elements to provide a high assurance that activities involving special nuclear materials are not inimical to common defense and security and do not constitute an unreasonable risk to public health and safety. The staff determined that these plans describe the necessary programmatic elements that, when effectively implemented, will provide the required high assurance. The burden to effectively implement these plans remains with the applicant. Effective implementation depends on the procedures and practices the applicant develops to satisfy the programmatic elements of the PSP, T&QP, and SCP. The target sets, the site-specific target set analysis, and the site's protective strategy are in the facility implementing procedures, which were not subject to staff's review, as part of this COL application, and are therefore subject to future NRC inspections in accordance with 10 CFR 73.55(c)(7)(iv) and 10 CFR Part 73, Appendix C, Section II.B.5(iii). As provided by Section 3 of the applicant's PSP, a Performance Evaluation Program will be implemented that periodically tests and evaluates the effectiveness of the overall protective strategy. This program provided that deficiencies be corrected. In addition, NRC inspectors will conduct periodic force-on-force exercises that will test the effectiveness of the applicant's protective strategy. Based on the results of the applicant's own tests and evaluations, the NRC's baseline inspections, and force-on-force exercises, enhancements to the applicant's PSP, T&QP, and SCP may be necessary to ensure that the overall protective strategy can be effectively implemented. As such, the staff's approval of the applicant's PSP, T&QP, and SCP is limited to the programmatic elements necessary to provide the required high assurance, as stated above. Should deficiencies be identified with the programmatic elements of these plans, as a result of the periodic applicant- or NRC-conducted drills or exercises that test the effectiveness of the overall protective strategy, the plans shall be corrected to address these deficiencies in a timely manner. The applicant will notify the NRC of these changes in a plan, in accordance with the requirements of 10 CFR 50.54(p) or 50.90.

The COL applicant's security plan information is being withheld from public disclosure, in accordance with the provisions of 10 CFR 73.21.

13.7 Fitness for Duty

13.7.1 Introduction

Pursuant to 10 CFR 52.79(a)(44), COL applications must include a description of the FFD Program required by 10 CFR Part 26 and its implementation. The FFD Program is designed to provide reasonable assurance that: (1) individuals are trustworthy and reliable demonstrated by the avoidance of substance abuse; (2) individuals are not under the influence of any substance, legal or illegal, or are mentally or physically impaired from any cause that in any way adversely affects their ability to safely and competently perform their duties; (3) measures are established and implemented for the early detection of individuals who are not fit to perform their duties; (4) the construction site is free from the presence and effects of illegal drugs and alcohol; (5) the work places are free from the presence and effects of illegal drugs and alcohol; and (6) the effects of fatigue and degraded alertness on an individual's ability to safely and competently perform their duties are managed commensurate with maintaining public health and safety.

13.7.2 Summary of Application

In the STP COL FSAR Revision 6, the applicant replaced Section 13.7, "Fitness for Duty," in its entirety. The staff received the draft text of revised Section 13.7 in a revised response to RAIs 13.06.01-1 and 13.06.01-2, dated October 27, 2010 (ML103070082). In these documents, the applicant described conditions of the operations and construction FFD Program for STP, Units 3 and 4.

Supplemental Information

The applicant revised its response to RAIs 13.06.01-1 and 13.06.01-2, in its letter dated August 25, 2009 (ML092390067). This letter described the FFD Program for both the construction phase and the operating phase of STP, Units 3 and 4. The staff requested further clarification from STP on FSAR Revision 4 Section 13.7. As a result of this request, the applicant provided revised FSAR Section 13.7 in its response to RAIs 13.06.01-1 and 13.06.01-2 dated June 14, 2010 (ML101660700). In FSAR Revision 4 Section 13.7, the applicant stated:

> The Fitness for Duty (FFD) Program is implemented and maintained in two phases: the construction phase program and the operating phase program. The construction and operations phase programs are implemented as identified in Table 13.4S. The construction phase program is consistent with NEI 06–06 Revision 5, ["Fitness for Duty Program Guidance for New Nuclear Power Plant Construction Sites."].

The staff requested further clarification from the STP on FSAR Revision 4, Section 13.7. As a result of this request, the applicant provided a final revised Section 13.7 in its response to RAIs 13.06.01-1 and 13.06.01-2 dated October 27, 2010 (ML103070082).

COL License Information Items

There are no COL license information items applicable to this section of the STP COL application.

13.7.3 Regulatory Basis

The applicable regulatory requirements for Section 13.7 are as follows:

- 10 CFR Part 26
- 10 CFR 52.79(a)(44)

Regulatory guidance for the FFD Program is included in RG 1.206.

Pending the issuance of a NRC RG for NEI 06–06, applicants may cite NEI 06-06, Revision 5, as a reference in the development of site-specific applications.

13.7.4 Technical Evaluation

The staff reviewed Section 13.7 of the STP COL FSAR to ensure that the information in the COL FSAR represents the complete scope of information relating to this review topic. The staff's review confirmed that the information in the application and the information incorporated by reference addressed the required information relating to the FFD Program.

The staff reviewed the following information in the STP COL FSAR:

Supplemental Information

The applicant provided a final revised Section 13.7 in the STP COL FSAR, as part of the response to the RAIs 13.06.01-1 and 13.06.01-2 dated October 27, 2010 (ML103070082). The new section was included in Revision 4 of the COL application describing the FFD Programs.

The staff's review of revised Section13.7 included: (1) the adequacy of the FFD Program for the construction phase; (2) the adequacy of the FFD Program for the operations phase; and (3) the implementation schedule proposed by the applicant for both the construction phase and the operations phase FFD Program.

The staff issued RAI 13.06.01-1, on the review of the FSAR Revision 3, Section 13.7.1 "Introduction." In this RAI the staff stated:

> The introduction reads: "A Fitness for Duty program is implemented and maintained to meet the requirements contained in the 10 CFR Part 26. The FFD program complies with the FFD requirements contained in 10 CFR Part 26 at STP, Units 3 and 4, site." This statement doesn't specify if compliance will be met with requirements for operating reactors or with requirements for 10 CFR Part 26, Subpart K - FFD Program for Construction. The staff requested clarification of the intent of the FSAR.

The applicant's response to this RAI stated the intent to revise Section 13.7 by completely deleting the information submitted for the STP COL application in FSAR Section 13.7 of Revision 4. The applicant adopted the staff's guidance in the SER on NEI 06–06 describing the implementation of FFD Program at the STP, Units 3 and 4, site. In addition, the applicant added that Table 13.4S-1, "Operational Programs Required by NRC Regulation and Program Implementation," of the COL FSAR will be revised to include the construction and operation phase FFD Program descriptions, as specified in the staff's SER on NEI 06–06. The applicant stated that the program applies to all covered individuals, which includes South Texas Project

Nuclear Operating Company (STPNOC) employees, co-owner employees, STPNOC applicants, contractors, vendors, or supplier employees performing work at STP. STP visitors or short-term consultants/contractors exhibiting behavior suggesting a lack of FFD may also be subject to for cause drug and alcohol screening under this policy.

The FSAR emphasizes that management and oversight personnel, as further described in NEI 06–06, and security personnel prior to the receipt of special nuclear material in the form of fuel assemblies (with certain exceptions) will be subject to the operations FFD Program that meets the requirements of 10 CFR Part 26, Subparts A through H, N, and O. At the establishment of a protected area, all persons who are granted unescorted access will meet the requirements of an operation FFD Program. In addition, the applicant provided the following site-specific information:

- The construction site is defined in the Physical Security Plan, Appendix E and is under the control of the Constructor. The 10 CFR Part 26 requirements are implemented for the construction site area based on the descriptions provided in Table 13.4S-1.

- Construction workers & first line supervisors (Constructor employees and subcontractors) are covered by the STPNOC approved Constructor FFD Program (elements Subpart K).

- STPNOC employees and STPNOC subcontractor's construction management and oversight personnel are covered by the STPNOC Operations FFD Program and Constructor's employees and Constructor's subcontractors construction management and oversight personnel are covered by the STPNOC approved Constructor FFD Program (elements Subpart A – H, N and O).

- STPNOC security personnel are covered by the STPNOC Operations FFD Program and Constructor's security personnel are covered by the STPNOC approved Constructor FFD Program (elements Subpart A – H, N and O). This coverage is applicable from the start of construction activities to the earlier of (1) the receipt of Special Nuclear Material in the form of fuel assemblies, (2) the establishment of a protected area, or (3) the 10 CFR 52.103(g) finding.

- STPNOC FFD Program personnel are covered by the STPNOC Operations FFD Program and Constructor's FFD Program personnel are covered by the STPNOC approved Constructor FFD Program (elements 10 CFR Part 26 Subpart A, B, D – H, N, O, and C per licensee's discretion).

- STPNOC security personnel protecting fuel assemblies, or the established protected area, or the facility following the 10 CFR 52.103(g) finding are covered by the STPNOC Operations FFD Program (elements 10 CFR Part 26 Subpart A – I, N and O).

The operations phase program is consistent with 10 CFR Part 26. (Elements Subpart A –N, and O, except for individuals listed in §26.4(b), who are not subject to §§ 26.205 – 209, as described in Section 13.7.2 below.

The staff reviewed the applicant's revised Section 13.7 in the response to RAI 13.06.01-1 dated October 27, 2010 (ML103070082), and determined that it provided a sufficient level of detail and addresses all of the milestones established by 10 CFR 26.3 and 26.4. The staff verified that the proposed revision to Section 13.7 COL FSAR was appropriately revised in FSAR Revision 6. Therefore, the staff considers RAI 13.06.01-1 to be resolved and closed.

In RAI 13.06.01-2, the staff stated:

> The introduction reads "A Fitness for Duty program is implemented and maintained to meet the requirements contained in the 10 CFR Part 26. The FFD program complies with the FFD requirements contained in 10 CFR Part 26 at STP 3 & 4 site." The FSAR does not state whether the information provided is a supplement and clarification to the requirements in 10 CFR Part 26, or whether it is meant to be the applicant's stand-alone FFD program. Moreover, the FSAR contains supplemental information to 10 CFR Part 26, but is also repeats other sections of the rule. Please clarify the intent of the FSAR.

The applicant's response to RAI 13.06.01-2 dated October 27, 2010 (ML103070082), is identical to the response submitted for RAI 13.06.01-1, with the same replacement of the content requested in the RAI.

The revised section in the response to RAI 13.06.01-2, provided a sufficient level of detail and addresses the milestones established by 10 CFR 26.3 and 26.4 as indicated below:

Program Title	Program Source (required by)	FSAR Section	Implementation Milestone	Implementation Requirements
Fitness for Duty (FFD) Program for Construction (workers and first-line supervisors)	10 CFR 26.4(f)	13.7	Prior to initiating 10 CFR Part 26 construction activities	10 CFR Part 26, Subpart K
FFD Program for Construction (management and oversight personnel)	10 CFR 26.4(e)	13.7	Prior to initiating 10 CFR Part 26 construction activities	10 CFR Part 26, Subparts A - H, N, and O
FFD Program for Security Personnel	10 CFR 26.4(e)(1)	13.7	Prior to initiating 10 CFR Part 26 construction activities	10 CFR Part 26, Subparts A - H, N, and O
	10 CFR 26.4(a)(5) or 26.4(e)(1)		Prior to the earlier of: A. Licensee's receipt of SNM in the form of fuel assemblies, or B. Establishment of a protected area, or C. The 10 CFR 52.103(g) finding	10 CFR Part 26, Subparts A - I, N, and O

FFD Program for FFD Program personnel	10 CFR 26.4(g)	13.7	Prior to initiating 10 CFR Part 26 construction activities	10 CFR Part 26, Subparts A, B, D - H, N, O, and C per licensee's discretion
FFD Program for persons required to physically report to the Technical Support Center (TSC) or Emergency Operations Facility (EOF)	10 CFR 26.4(c)	13.7	Prior to the conduct of the first full-participation emergency preparedness exercise under 10 CFR Part 50, App. E, Section F.2.a	10 CFR Part 26, Subparts A - I, N, and O, except for §§ 26.205 – 209
FFD Program for Operation	10 CFR 26.4(a) and (b)	13.7	Prior to the earlier of: A. Establishment of a protected area, or B. The 10 CFR 52.103(g) finding	10 CFR Part 26, Subparts A - I, N, and O, except for individuals listed in § 26.4(b), who are not subject to §§ 26.205 – 209

The staff verified that the applicant appropriately revised COL FSAR Section 13.7 and Table 13.4S-1 in FSAR Revision 6 regarding the FFD Program for the construction phase and the operating phase of the units. Therefore, the staff considers RAIs 13.06.01-1 and 13.06.01-2 to be resolved and closed.

License Conditions

The STP COL FSAR, Table 13.4S-1 describes a license condition for implementing Fitness for Duty. However, the staff has not proposed any license condition implementation requirements for the STP COL application since all program elements milestone requirements are codified in Federal Regulations (10 CFR Part 26), as specifically reflected in Table 13.4S-1. Because the implementation milestones for Fitness for Duty are controlled by NRC regulations rather than by license condition and because these specific regulatory milestones are reflected in Table 13.4S-1, the entry stating that Fitness for Duty will be implemented by license condition should be deleted. This should occur in the next FSAR update pursuant to 10 CFR 50.71(e), which requires applicants/licensees to update the FSAR to reflect the latest information developed.

Section 13.7.5 of this SER discusses a license condition requiring the applicant to inform the NRC of the schedule for implementation of the Fitness for Duty Program.

13.7.5 Post Combined License Activities

License Condition

As discussed in Section 13.4S of this SER, the staff is imposing the following license condition:

> No later than 12 months after issuance of the COL, the licensee shall submit to the Director of NRO a schedule that supports planning for and conduct of NRC inspection of the FFD operational program. The schedule shall be updated every 6 months until 12

months before scheduled fuel load, and every month thereafter until the FFD operational program has been fully implemented.

13.7.6 Conclusion

The staff reviewed revised FSAR Section 13.7 along with the applicant's revision to this section. The staff's review confirmed that the applicant has adequately addressed the required information related to the FFD, and therefore determined the revised FSAR Section 13.7 to be acceptable. The FFD portion of the FSAR, Section 13.7, Revision 12, is consistent with the requirements of 10 CFR Part 26 and 10 CFR 52.79(a)(44).

13.8 Cyber Security

13.8.1 Introduction

This section of the FSAR provided information relating to the preparations and plans for the Cyber Security Program for STP, Units 3 and 4. The purpose of this section is to demonstrate that the COL applicant will establish and maintain a cyber security program to provide a high assurance that digital systems, networks, and communication systems are protected from cyber attacks.

13.8.2 Summary of Application

In Part 8 of the COL application, the applicant submitted a Cyber Security Plan (CSP) as part of the PSP. In addition, in FSAR Section 13.6, the applicant provided the following:

COL License Information Item

- COL License Information Item 13.7 Physical Security Interface

In Section 13.6.3, "COL License Information," the applicant provided the following site-specific supplemental information to address COL License Information Item 13.7:

> A Cyber Security Program is implemented and maintained to meet the requirements contained in 10 CFR 73.54 during the operating phase of the nuclear units. This program will be implemented on site prior to Unit 3 Fuel receipt (protected area).

13.8.3 Regulatory Basis

The following NRC regulations include the relevant requirements for the Cyber Security Plan (CSP):

- 10 CFR 73.54, "Protection of digital computer and communication systems and networks."
- 10 CFR 73.55(a)(1), 10 CFR 73.55(b)(8), and 10 CFR 73.55(m).
- 10 CFR 73.58, "Safety/security interface requirements for nuclear power reactors."
- Appendix G, "Reportable Safeguards Events," to 10 CFR Part 73.

13.8.4 Technical Evaluation

The staff reviewed Section 13.6.3, Revision 6, of the STP, Units 3 and 4, COL FSAR and the applicant's CSP against the detailed guidance in RG 5.71, "Cyber Security Programs for Nuclear Facilities." The applicant's CSP substantially conforms to the NRC provided template in RG 5.71, which provided an acceptable method for complying with the NRC's regulations. The following subsections describe the key aspects of the CSP that conform to NRC guidance, and where the applicant's CSP deviates from the template, the deviation is evaluated for compliance with regulatory requirements.

13.8.4.1 *Cyber Security Plan Scope and Purpose*

The CSP described how STP will establish a cyber security program to achieve a high assurance that STP, Units 3 and 4, digital computer and communication systems and networks associated with safety, security, and emergency preparedness are adequately protected against cyber attacks up to and including the design-basis threat. These systems and networks include offsite communications and support systems and equipment that—if compromised—would adversely impact safety, security, and/or emergency preparedness (SSEP) functions and their digital assets, hereafter referred to as critical digital assets (CDAs).

The CSP described the following:

- Implementation and documentation of the "baseline" security controls, as described in Regulatory Position C.3.3 of RG 5.71.

- Implementation and documentation of the cyber security program that employs a life-cycle approach to maintain security controls, as described in Regulatory Position C.4 of RG 5.71.

CSP compliance with 10 CFR 73.54 includes the following:

- Establishes and implements the defensive model described in Section 3.1.5 of the STP CSP, with the security controls described in Regulatory Positions C.3.1, C.3.2, and C.3.3 of RG 5.71.

- Maintains the program described in Regulatory Position C.4 of RG 5.71.

- Ensures that the documentation of security controls for each CDA is available for inspection.

- Ensures that the NRC will review any changes that would decrease the effectiveness of the plan, in accordance with 10 CFR 50.54(p).

- Ensures that any cyber attacks or incidents at the site are reported to the NRC, as required by 10 CFR 73.71, "Reporting of Safeguards Events," and Appendix G to 10 CFR Part 73.

The STP CSP includes the following:

> In addition, within the scope of the NRC's cyber security rule at 10 CFR 73.54, systems or equipment that perform important to safety functions include

structures, systems, and components (SSCs) in the balance of plant (BOP) that could directly or indirectly affect reactivity at STP Units 3 & 4 and could result in an unplanned reactor shutdown or transient. Additionally, these SSCs are under STPNOC control and include electrical distribution equipment out to the first inter tie with the offsite distribution system.

The STP CSP includes a deviation from the guidance to clarify that: systems or equipment that perform important to safety functions include SSCs in the balance of plant (BOP) that could directly or indirectly affect reactivity and could result in an unplanned reactor shutdown or transient. This deviation is consistent with Commission policy.

The staff reviewed the STP CSP against the template in RG 5.71 and the staff requirements memorandum (SRM), CMWCO-10-0001, "Regulation of Cyber Security at Nuclear Power Plants," dated October 21, 2010.

Based on the above review, the staff determined that establishment of the cyber security program described in Section 1 of the STP CSP to be acceptable.

13.8.4.2 *Security Assessment and Authorization*

The STP CSP stated that the following will be reviewed annually:

- A formal documented security planning, assessment, and authorization policy that describes the purpose, scope, roles, responsibilities, management commitments, and coordination among departments, and the implementation of the security program and the controls listed in Appendices B and C to RG 5.71.

- A formal documented procedure to facilitate the implementation of the cyber security program and the security assessment.

Based on the above review, the staff determined that the security assessment and authorization described in Section 3.1.1 of the STP CSP to be acceptable.

13.8.4.3 *Cyber Security Team*

The CSP stated that the cyber security team will conduct objective assessments, make determinations that are not constrained by operational goals, and resolve issues using the process described in Section 3.1.6 of the STP CSP.

The submitted CSP stated that the cyber security team has broad knowledge in the following areas:

- information and digital system technology,
  - cyber security;
  - software development;
  - communications;
  - systems administration;
  - computer engineering;
  - networking—site and corporate networks;
  - programmable logic controllers;

  - control systems;
  - distributed control systems;
  - computer systems and databases used in design, operation, and maintenance of CDAs;

- nuclear facility operations, engineering, and technical specifications, and

- physical security and emergency preparedness systems and programs.

The submitted CSP lists the roles of and responsibilities for the cyber security team, which include the following:

- Perform or oversee each stage of the cyber security management processes.

- Document all key observations, analyses, and findings during the assessment process so that information can be used in the application of security controls.

- Evaluate or reevaluate assumptions or conclusions about current cyber security threats.

- Evaluate or reevaluate assumptions or conclusions about potential vulnerabilities to and consequences from an attack.

- Evaluate or reevaluate assumptions or conclusions about the effectiveness of existing cyber security controls, defensive strategies, and attack mitigation methods, as well as cyber security awareness and training of those working with or responsible for CDAs and cyber security controls throughout their system life cycles.

- Confirm information from reviews of CDAs—and connected digital devices and associated security controls—with physical and electronic validation activities.

- Identify and implement new cyber security controls as needed.

- Document the implementation of alternate or compensating measures in lieu of any security controls (Appendices B and C of RG 5.71).

- Document the basis for not implementing certain controls (Appendix B of RG 5.71).

- Prepare documentation and oversee implementation of security controls (Appendices B and C of RG 5.71).

- Retain all documentation in accordance with 10 CFR 73.55(q) and Regulatory Position C.5 of RG 5.71.

The cyber security team roles and responsibilities described in this section of the STP CSP conform to, and encompass all of the same specifications, outlined in the comparable section of RG 5.71. Based on the above review, the staff determined the cyber security team described in Section 3.1.2 of the STP CSP to be acceptable.

13.8.4.4 *Identification of Critical Digital Assets*

The submitted CSP described methods that establish the following:

- Identify and document systems, equipment, communication systems, and networks that are associated with the SSEP functions described in 10 CFR 73.54(a)(1), as well as the support systems associated with these SSEP functions. Systems, equipment, and network systems associated with SSEP functions are referred to as critical systems. The cyber security team identifies critical systems by conducting an initial consequence analysis of systems, equipment, communication systems, and networks to determine whether those that fail or are compromised or exploited could impact the SSEP functions of the nuclear facility, without taking into account existing mitigating measures.

- Perform a consequence analysis of systems, equipment, communication systems, and networks to determine whether they are critical systems.

- Identify and document CDAs that have a direct, supporting, or indirect role in the proper functioning of the critical systems.

- The submitted CSP discusses the means to document the following:

    - Description of CDAs.

    - Identification of each CDA within each critical system.

    - Description of each CDA function.

- Identification of consequences to the critical system and SSEP functions if a compromise were to occur.

- Identification of the digital devices with direct or indirect roles in critical system functions.

- Description of security functional requirements or specifications that includes the following:

    – security requirements for vendors or developers to maintain system integrity;
    – secure configuration, installation, and operation of the CDA;
    – effective use and maintenance of security features or functions;
    – known vulnerabilities regarding the configuration and use of administrative functions;
    – effective use of user-accessible security features or functions;
    – methods for user interaction with the CDA; and
    – user responsibilities in maintaining the security of the CDA.

On the basis of this review, staff determined that the applicant's CSP appropriately follows the guidance on the identification of critical digital assets in RG 5.71.

13.8.4.5 *Reviews and Validation Testing*

The submitted CSP identifies and documents the method for assessing the following for each CDA:

- direct/indirect connection pathway;

- infrastructure interdependencies;

- application of defensive strategies that include defensive models, security controls, and other defensive measures.

The submitted CSP discusses the CDA walkdown, which includes the following:

- Performing physical inspections of the connections and configuration of each CDA.
- Tracing all communication connections into and out of each termination point along the pathway for each CDA.
- Examining the physical security of the CDA, including the communication pathways.
- Examining the configuration and assessing the effectiveness of existing security controls along the communication pathways.
- Examining interdependencies for each CDA and trust relationships between CDAs.
- Examining interdependencies with infrastructure support systems that emphasize compromises of electrical power, environmental controls, and fire equipment.
- Examining systems, communication systems, and networks that are potential pathways for attacks.
- Resolving discrepancies found in the review.
- Documenting the walkdown inspection.

The submitted CSP notes that an electronic validation will be performed when a walkdown inspection is impractical. This electronic validation consists of tracing a communication pathway from start to finish. The use of electronic equipment may prove to be a better method than a physical walkdown in certain circumstances.

On the basis of this review, staff determined that the applicant's CSP appropriately followed the guidance on reviews and validation testing in RG 5.71.

13.8.4.6 *Defense-in-Depth Protective Strategies*

The submitted CSP provided for the implementation of defensive strategies that ensure the capability to detect, respond to, and recover from cyber attacks. The defensive strategies consist of the following:

- Security controls implemented in accordance with Section 3.1.6 of the CSP and the defensive model outlined in Regulatory Position C.3.2 of RG 5.71.
- Defense-in-depth measures described in Section 6 of Appendix C to RG 5.71, "Defensive Strategy."
- Detailed defensive architecture described in Section 7 of Appendix C to RG 5.71, "Defense-in-Depth."

- Maintenance of a cyber security program in accordance with Section 4 of Appendix A to RG 5.71, “Maintaining the Cyber Security Program.”

The submitted CSP notes that the defensive model establishes the logical and physical boundaries between CDAs with similar risks and CDAs with lower security risks.

The applicant established defense-in-depth strategies by implementing and documenting the following:

- defensive model (Regulatory Position C.3.2 of RG 5.71),
- physical security program and physical barriers,
- operational and management controls (described in Appendix C to RG 5.71), and
- technical controls (described in Appendix B to RG 5.71).

On the basis of this review, the staff determined that the applicant’s CSP appropriately followed the guidance on defense-in-depth protective strategies in RG 5.71.

13.8.4.7 *Application of Security Controls*

The submitted CSP discusses the use of information collected from Section 3.1.4 of the CSP to conduct the following for each CDA

- The applicant may implement all security controls specified in Appendix B of RG 5.71.

- The applicant may implement an alternative control listed in Appendix B of RG 5.71, in the event a security control cannot be applied, by doing one of the following:

  – Document the basis for employing alternate countermeasures.
  – Perform and document an attack vector and tree analysis of the CDA to confirm that the countermeasure provides the same or greater protection as the corresponding control.
  – Implement alternative countermeasures that provide at least the same degree of protection as the corresponding security control in Appendix B of RG 5.71.

- Alternately, the applicant may not implement a control enumerated in Appendix B of RG 5.71 and instead by doing the following:

  – Perform an attack vector and attack tree analyses of the specific security controls for the CDA that will not be implemented.
  – Document that the attack vector does not exist (i.e., is not applicable) and demonstrate that the specific security control is not necessary.

The submitted CSP notes that before implementing security controls on a CDA, the potential for an adverse impact must be assessed. Specifically, the CSP directs the applicant to consider the following:

- Choosing not to implement a security control if there is a known adverse impact to SSEP functions.

- Using alternate controls to mitigate the lack of the security control, in accordance with Section 3.1.6 of the CSP.

The submitted CSP includes provisions to verify that CDAs are adequately protected from cyber attacks up to and including the design-basis threat and that any identified gaps have been closed. The program directs the applicant to do the following:

- Perform an effectiveness analysis, as described in Regulatory Position C.4.1.2 of RG 5.71.
- Perform a vulnerability assessment or scans, as described in Regulatory Position C.4.1.3 of RG 5.71.
- Implement alternative countermeasures that provide at least the same degree of protection as the corresponding security control.

On the basis of this review, staff determined that the applicant's CSP appropriately followed the guidance on the application of security controls in RG 5.71.

13.8.4.8 *Incorporating the Cyber Security Program into the Physical Protection Program*

The CSP discusses the following efforts that are necessary to integrate the management of physical and cyber security:

- Establishing a security organization, independent from operations, to incorporate both cyber and physical security.
- Documenting physical and cyber security interdependencies.
- Developing policies and procedures joining management, physical, and cyber security controls.
- Incorporating policies and procedures to secure the CDAs from attacks up to and including the design-basis threat.
- Coordinating personnel training.
- Integrating and coordinating incident response personnel.
- Training senior management.
- Performing periodic exercises of simulated physical and cyber attacks.

On the basis of this review, staff determined that the applicant's CSP appropriately followed the guidance on incorporating the cyber security program into the physical protection program in RG 5.71.

13.8.4.9 *Policies and Implementing Procedures*

The CSP stated the following:

- The applicant must develop and implement policies and procedures to meet the security control objectives provided in Appendices B and C to RG 5.71.

- The applicant must document, review, approve, issue, use, and revise policies and implementation procedures as described in Section 4 of the CSP.

- The applicant must ensure that personnel responsible for implementing and overseeing the program report to an executive who is responsible for the nuclear plant operation.

- The applicant must establish procedures that designate specific responsibilities for positions described in Regulatory Position C.10.10 of RG 5.71.

On the basis of this review, staff determined that the applicant's CSP appropriately followed the guidance on policies and implementing procedures in RG 5.71.

13.8.4.10 *Maintaining the Cyber Security Program*

The CSP stated the following:

- The applicant will employ a life-cycle approach consistent with the controls described in Appendix C to RG 5.71.

- The applicant will maintain security controls for CDAs to achieve the overall objectives of the CSP.

- For new or existing CDAs undergoing modifications, the applicant will follow the process described in Section 4.2 of the CSP.

- The applicant will maintain records in accordance with Section 5 of the CSP.

- The CSP describes the specific cyber security policies and procedures that: (1) implement the CSP, (2) must be maintained at the site, and (3) are subject to inspection by the NRC.

On the basis of this review, staff determined that the applicant's CSP appropriately followed the guidance on maintaining the cyber security program in RG 5.71.

13.8.4.11 *Continuous Monitoring and Assessment*

The CSP stated the following:

- The applicant will (1) continuously monitor security controls consistent with Appendix C to RG 5.71 for effectiveness; (2) ensure that they remain in place throughout the life cycle of the CDA; and (3) verify that rogue assets are not connected to the infrastructure.

- The applicant will perform periodic assessments to verify that security controls implemented for each CDA remain robust, resilient, and effective in place throughout the life cycle. The applicant will perform these assessments at least every 12 months, or in accordance with the specific requirements for each security control—whichever is more frequent.

- The applicant will monitor and measure the effectiveness of the Cyber Security Program and its security controls to ensure that both are (1)

implemented correctly, (2) operating as intended, and (3) continuing to provide a high assurance that CDAs are protected against cyber attacks. The applicant commits to verifying the effectiveness of the security controls every 12 months, or in accordance with the specific requirements of each security control—whichever is more frequent.

- The applicant will conduct periodic vulnerability scanning and assessments of the security controls, defensive architecture, and all of the CDAs no less frequently than once a quarter to identify security deficiencies. These tasks will be performed as specified in the security controls in Appendices B and C of RG 5.71, and when new vulnerabilities that could potentially affect the effectiveness of the security program and the security of the CDAs are identified. The applicant also commits to address vulnerabilities that could be exploited to compromise the CDAs and vulnerabilities that could adversely impact SSEP functions.

On the basis of this review, staff determined that the applicant's CSP appropriately followed the guidance on continuous monitoring and assessments in RG 5.71.

13.8.4.12 *Change Control*

The CSP stated the following:

- The applicant will systematically plan, approve, test, and document changes to the environment of the CDAs; the addition of CDAs to the environment; and changes to existing CDAs in a manner that provides a high level of assurance that the SSEP functions are protected from cyber attacks. The Cyber Security Program establishes that changes made to the CDAs will use the design control and configuration management procedures, or other procedural processes, to ensure that the existing security controls are effective and any pathway that can be exploited to compromise a CDA is protected from cyber attacks.

- The applicant will implement and document a change management process and configuration management controls described in Appendix C, Section 11 to RG 5.71 to ensure that the site's Cyber Security Program objectives remain satisfied.

- The applicant will perform a security impact analysis in accordance with Section 4.1.2 before implementing a design or configuration change to a CDA, or when changes to the environment occur so as to manage potential risks introduced by the changes. The applicant also commits to evaluate, document, and incorporate into the security impact analysis safety and security interdependencies of other CDAs or systems.

- The applicant will establish, implement, document, and maintain a process to ensure that modifications to CDAs are evaluated before they are implemented; so that security controls remain effective and any pathway that can be exploited to compromise the modified CDA is addressed to protect the CDAs and the SSEP functions from cyber

attacks. This section further states that the STP Cyber Security Program establishes that additions and modifications are evaluated using a proven and accepted method, before implementation to provide a high assurance of adequate protection against cyber attacks, up to and including the design-basis threat, using the process described in Section 4.1.2 of the STP CSP.

- The applicant will review, update, and modify cyber security policies; procedures; practices; existing cyber security controls; detailed descriptions of network architecture (including logical and physical diagrams); information on security devices; and any other information associated with the state of the cyber security program or security controls provided in Appendices B and C to RG 5.71, when changes occur to CDAs or to the environment.

- The applicant will conduct and document the results of reviews and validation tests of each CDA modification and addition using the process described in Section 3.1.4 of the STP CSP.

- When new CDAs are introduced into the environment, the applicant will (1) deploy them into the appropriate level of the defensive model as described in Section 3.1.5 of the CSP; (2) apply technical controls identified in Appendix B to RG 5.71; and (3) confirm that the operational and management controls described in Appendix C of RG 5.71 are applied and are effective for the CDA.

- When CDAs are modified, the applicant will (1) verify that they are deployed to the appropriate level of the defensive model as described in Section 3.2 of the CSP; (2) perform a security impact analysis as described in Section 4.2.2 of the CSP; (3) verify that technical controls identified in Appendix B to RG 5.71 are implemented consistent with Section 3.1.6 of the CSP; and (4) confirm that the operational and management controls described in Appendix C of RG 5.71 are applied and are effective for the CDA.

On the basis of this review, staff determined that the applicant's CSP appropriately followed the guidance on the change control in RG 5.71.

13.8.4.13 *Cyber Security Program Review*

COL License Information Item

- COL License Information Item 13.7 Physical Security Interface

In FSAR Section 13.4S, Table 13.4S-1, the applicant added Operation Program #15 to address this COL license information item. In this program, the applicant provided the milestone for implementing the Cyber Security Program as the "Fuel Receipt (Protected Area)," with the requirement as a license condition.

> 8 months before fuel is allowed onsite (protected area), STP shall develop a written protective strategy that describes in detail the cyber protection measures,

systems, and deployment of the cyber security program relative to site-specific conditions, to include but not limited to, the final facility design, and the location of target set equipment and elements in accordance with 10 CFR 73.54.

The staff determined this license condition to be acceptable, because the applicant will apply the physical and cyber security plans consistent with 10 CFR Parts 50, 52 and 73 and the security requirements of the site.

The STP CSP stated that the applicant has established the necessary measures and governing procedures to implement periodic reviews of applicable program elements, in accordance with the requirements of 10 CFR 73.55(m). Specifically, the STP CSP calls for a review of the program's effectiveness at least every 24 months. In addition, reviews are to be conducted as follows:

- within 12 months following the initial implementation of the program
- as necessary, based on site-specific analyses; assessments; or other performance indicators
- as soon as it is reasonably practical, but no longer than 12 months after changes occur in personnel; procedures; equipment; or facilities that potentially could adversely affect cyber security
- by individuals independent of those personnel responsible for program management, and any individual who has direct responsibility for implementing the program

Based on the above review, staff determined that the cyber security program review described in Section 4.3 of the STP CSP to be acceptable.

13.8.4.14 *Document Control and Records Retention and Handling*

Section 5 of the STP CSP establishes the necessary measures and governing procedures to ensure that sufficient records of items and activities affecting cyber security are developed, reviewed, approved, issued, used, and revised to reflect completed work. STP will retain records and supporting technical documentation required to satisfy the requirements of 10 CFR 73.54 and 10 CFR 73.55, until the NRC terminates the facility's operating license. Records are retained to document access history and to discover the source of cyber attacks or other security-related incidents affecting CDAs or SSEP functions, or both. The applicant will retain superseded portions of these records for at least three years after the record is superseded, unless otherwise specified by the NRC.

Based on the above review, the staff determined that the document control and records retention handling described in Section 5 of the STP CSP to be acceptable.

13.8.5 Post Combined License Activities

License Conditions

The Operational Program Implementation lists milestones where different elements of the Physical Security Program are implemented. The applicant has proposed that the fuel receipt

(protected area) is the milestone for implementing physical security. The implementation milestone for the Physical Security Program is captured in License Condition 13.4S-1 in Section 13.4S.5 of this SER.

In addition, the staff will include a license condition that will ensure the following:

> The licensee shall submit to the Director of NRO, a schedule, no later than 12 months after issuance of the COL, that supports planning for and conduct of NRC inspection of the cyber security programs. The schedule shall be updated every 6 months until 12 months before scheduled fuel load, and every month thereafter until the cyber security program has been fully implemented.

The implementation milestone schedule of the license condition for operational programs is captured in License Condition 13.4S-2, in Section 13.4S.5 of this SER.

The applicant has described the CSP and its implementation in accordance with 10 CFR 73.54, 10 CFR 73.55(a)(1), 10 CFR 73.55(b)(8), 10 CFR 73.55(m), and Appendix G to 10 CFR Part 73. The applicant also identified the following license condition for addressing COL License Information Item 13.7, as it relates to the CSP:

License Condition 13.8-1

> 8 months before fuel is allowed onsite (protected area), STP shall develop a written protective strategy that described in detail the cyber protection measures, systems, and deployment of the cyber security program relative to site-specific conditions, to include but is not limited to, the final facility design, and the location of target set equipment and elements in accordance with 10 CFR 73.54.

13.8.6 Conclusion

The staff compared FSAR Section 13.6.3, Revision 12, and the applicant's CSP submitted as part of the PSP in Part 8 of the COL application for STP, Units 3 and 4, to the relevant NRC regulations and the criteria in RG 5.71. On the basis of this review, the staff determined that the applicant has addressed the requirements of COL License Information Item 13.7 and that the information in the applicant's CSP adequately addresses the relevant requirements and guidance of 10 CFR 73.54 and RG 5.71, respectively. The staff also determined that the CSP includes all features considered essential to a cyber security program. In particular, the staff determined that the CSP complies with the applicable Commission regulations including 10 CFR 73.1; 10 CFR 73.54; 10 CFR 73.55(a)(1); 10 CFR 73.55(b)(8); 10 CFR 73.55(m); and 10 CFR Part 73, Appendix G. Therefore, the staff determined the information in the STP CSP to be acceptable.