13.0 CONDUCT OF OPERATIONS

13.1 Organizational Structure of Applicant

13.1.1 Introduction

The organizational structure includes the design, construction, and preoperational responsibilities of the applicant organizations described in the applicant's final safety analysis report (FSAR). 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. Its activities include facility design, design review, design approval, construction management, testing, and operation of the plant. The descriptions of the design, and construction and preoperational 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 educational and experience requirements for identified positions or classes of positions
- 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.

13.1.2 Summary of Application

Section 13.1 of the Turkey Point Units 6 and 7 combined license (COL) FSAR, Revision 8, incorporates by reference Section 13.1 of the AP1000 design control document (DCD), Revision 19.

In addition, in Turkey Point Units 6 and 7 COL FSAR Section 13.1, the applicant provided to the U.S. Nuclear Regulatory Commission (NRC) the following:

AP1000 COL Information Items

- PTN COL 13.1-1

The applicant provided additional information in PTN COL 13.1-1 to resolve COL Information Item 13.1-1 (COL Action Item 13.1-1). COL Information Item 13.1-1 states the COL applicant will address the adequacy of its organizational structure. 10 CFR 50.33 requires this information. PTN COL 13.1-1 describes organizational positions of the nuclear power station and owner/applicant corporations and associated functions and responsibilities. Table 1.8-202, "COL Item Tabulation," provides PTN COL 13.1-1 cross-references.

- PTN COL 9.5-1

The applicant provided additional information in PTN COL 9.5-1, describing the fire protection program in Section 9.5.1.8. PTN COL 9.5-1 is addressed under Section 13.1.1.2.10, "Fire Protection" and Section 13.1.2.1.3.9, "Fire Protection Supervisor and Fire Protection Engineer." Table 1.8-202, "COL Item Tabulation," provides PTN COL 9.5-1 cross-references.

- PTN COL 18.6-1

The applicant provided additional information in PTN COL 18.6-1, describing the qualifications of the nuclear plant technical support personnel. PTN COL 18.6-1 is addressed under Section 13.1.1.4, "Qualifications of Technical Support Personnel"; Section 13.1.3.1, "Minimum Qualification Requirements"; Section 13.1.3.2, "Qualification Documentation"; Table 13.1-201, "Generic Position/Site-Specific Position Cross-Reference"; and Table 13.1-202, "Minimum On-Duty Operations Shift Organization for Two-Unit Plant." Table 1.8-202, "COL Item Tabulation," provides PTN COL 18.6-1 cross-references.

- PTN COL 18.10-1

The applicant provided additional information in PTN COL 18.10-1 to address the responsibilities of the manager in charge of nuclear training. PTN COL 18.10-1 is addressed in Section 13.1.1.3.2.5, "Training Manager." Table 1.8-202, "COL Item Tabulation," provides PTN COL 18.10-1 cross-references.

13.1.3 Regulatory Basis

The regulatory basis of the information incorporated by reference is addressed in NUREG-1793, "Final Safety Evaluation Report Related to Certification of the AP1000 Standard Design," and its supplements.

In addition, the acceptance criteria associated with the relevant requirements of the Commission regulations for PTN COL 13.1-1, PTN COL 9.5-1, PTN COL 18.6-1, and PTN COL 18.10-1 are given in Sections 13.1.1, "Management and Technical Support Organization," and 13.1.2-13.1.3, "Operating Organization," of NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition" (SRP).

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, "American National Standard for Selection, Qualification, and Training of Personnel for Nuclear Power Plants," as endorsed and amended by Regulatory Guide (RG) 1.8, Revision 3, "Qualification and Training of Personnel for Nuclear Power Plants."

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

- 10 CFR 52.79, "Contents of applications; technical information in final safety analysis report"
- 10 CFR 50.40, "Common standards"

- 10 CFR 50.48, “Fire Protection”
- 10 CFR 50.71, “Maintenance of records, making of reports”
- 10 CFR Part 50, Appendix B, “Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants”
- 10 CFR 50.54, “Conditions of licenses”
- 10 CFR Part 55, “Operator’s Licenses”

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

- RG 1.8, “Qualification and Training of Personnel for Nuclear Power Plants”
- RG 1.28, “Quality Assurance Program Criteria (Design and Construction)”
- RG 1.33, “Quality Assurance Program Requirements (Operation)”
- RG 1.68, “Initial Test Programs for Water-cooled Nuclear Power Plants”
- RG 1.114, “Guidance to Operators at the Controls and to Senior Operators in the Control Room of a Nuclear Power Unit”
- RG 1.160, “Monitoring the Effectiveness of Maintenance at Nuclear Power Plants”
- RG 1.174, “An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis”
- RG 1.175, “An Approach for Plant-Specific, Risk-Informed Decisionmaking: Inservice Testing”
- RG 1.177, “An Approach for Plant-Specific, Risk-Informed Decisionmaking: Technical Specifications”
- RG 1.178, “An Approach for Plant-Specific Risk-Informed Decisionmaking for Inservice Inspection of Piping”
- RG 1.182, “Assessing and Managing Risk Before Maintenance Activities at Nuclear Power Plants”
- RG 1.206 “Combined License Applications for Nuclear Power Plants (LWR Edition)”
- NUREG-0660, “NRC Action Plan Developed as a Result of the Three Mile Island Accident”
- NUREG-0694, “TMI-Related Requirements for New Operating Licenses”
- NUREG-0711, “Human Factors Engineering Program Review Model”
- NUREG-0718, “Licensing Requirements for Pending Applications for Construction Permits and Manufacturing License”
- NUREG-0737 and Supplement 1, “Clarification of TMI Action Plan Requirements”

13.1.4 Technical Evaluation

The NRC staff reviewed Section 13.1 of the Turkey Point Units 6 and 7 COL FSAR and checked the referenced DCD to ensure that the combination of the DCD and the COLA represents the

complete scope of information relating to this review topic.[1] The staff confirmed that the information in the application and incorporated by reference addresses the required information relating to the organizational structure of the applicant. The results of the staff's evaluation of the information incorporated by reference in the Turkey Point Units 6 and 7 COLA are documented in NUREG-1793 and its supplements.

The staff reviewed the information in the Turkey Point Units 6 and 7 COL FSAR:

AP1000 COL Information Items

- PTN COL 13.1-1

The staff reviewed Turkey Point Units 6 and 7 site-specific information to resolve PTN COL 13.1-1. PTN COL 13.1-1 is related to the organizational structure of the COL applicant included under Section 13.1 of the Turkey Point Units 6 and 7 COL FSAR. Section 13.1 of the Turkey Point Units 6 and 7 COL FSAR describes the organizational positions of a nuclear power plant and owner/applicant corporations and associated functions and responsibilities.

The applicant provided the following additional Turkey Point Units 6 and 7 site-specific COL information to resolve COL Information Item 13.1-1, which addresses the organizational structure of the COL applicant. COL Information Item 13.1-1 states:

> Combined License applicants referencing the AP1000 certified design will address adequacy of the organizational structure.

The commitment was also captured as COL Action Item 13.1-1 in Appendix F of NUREG-1793, which states:

> The COL applicant will describe its organizational structure.

The applicant provided additional information as part of the Turkey Point Units 6 and 7 COL FSAR to describe the organizational positions of a nuclear power station and owner/applicant corporations and associated functions and responsibilities. The applicant included a table in the FSAR (Turkey Point Units 6 and 7 COL FSAR Table 13.1-201, "Generic Position/Site-Specific Position Cross-Reference") to provide a cross-reference to identify site-specific position titles.

The applicant added new sections and information related to the site-specific organizational structure to Turkey Point Units 6 and 7 COL FSAR Section 13.1 beyond the structure given in RG 1.206, "Combined License Applications for Nuclear Power Plants: LWR Edition." The new section titles are:

> 13.1.1, "Management and Technical Support Organization"
> 13.1.2, "Operating Organization"
> 13.1.3, "Qualifications Requirements of Nuclear Plant Personnel"
> 13.1.4, "Combined License Information Item"
> 13.1.5, "References"
> Table 13.1-201, "Generic Position/Site-Specific Position Cross-Reference"
> Table 13.1-202, "Minimum On-Duty Operations Shift Organization for Two-Unit Plant"

[1] See Section 1.2.2 for a discussion of the staff's review related to verification of the scope of information to be included in a COL application that references a design certification (DC).

Figure 13.1-201, “Plant Management Organization”
Figure 13.1-202, “Shift Operations Organization”
Figure 13.1-203, “Corporate and Engineering Organization”
Figure 13AA-201, “Construction Management Organization”
Figure 13AA-202, “Hiring Schedule for Plant Staff”

In addition, the applicant added a new appendix to Chapter 13 titled “Appendix 13AA Construction-Related Organization.” This appendix describes the applicant’s construction organization. The applicant states “The information in this appendix is included for future designation as historical information”.

Turkey Point Units 6 and 7 FSAR Sections 11.4 and 11.5 describe the implementation of a site specific Process Control Program (PCP) (The PCP describes the administrative and operational controls used for the solidification of liquid or wet solid waste and the dewatering of wet solid waste.), and a site-specific Offsite Dose Calculation Manual (ODCM) (the ODCM contains the methodology and parameters used for calculating doses resulting from liquid and gaseous effluents.). These were not discussed in FSAR Section 13.1.2.1.2.6. In request for additional information (RAI) 6917, Question 13.01.01-5, the staff requested the applicant to demonstrate compliance with 10 CFR 20.1301 and 20.1302, and Appendix I to 10 CFR Part 50. The applicant was also requested to revise FSAR Tier 2, Section 13.1.2.1.2.6 to include programs for implementing the PCP and the ODCM. In a response dated April 2, 2013 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML13093A410), the applicant agreed to update the FSAR text. The staff has confirmed this change in Revision 7 of the FSAR and the staff finds this response acceptable since the FSAR was revised to include a statement to develop, implement, direct and coordinate the radioactive waste materials management program for the assigned units, Turkey Point Units 6 and 7. The staff considers RAI 6917, Question13.01.01-5, resolved and closed.

The staff has reviewed PTN COL 13.1-1 and, for the reasons set forth below, concludes that the management, technical support, and operating organizations, as described, are acceptable and meet the requirements of 10 CFR 50.34, 10 CFR 50.40, 10 CFR 50.48, Appendix B to 10 CFR Part 50, 10 CFR 52.79, and 10 CFR 50.80, as applicable. This conclusion is based on the following:

The applicant has described clear responsibilities and definite resources for the design and construction of the facility and has described its plans for managing the project and utilizing the nuclear steam supply system (NSSS) vendor and architect-engineer (AE). The staff reviewed these plans and determined these plans provide reasonable assurance that the applicant will establish an acceptable organization and that sufficient resources are available to provide offsite technical support and to satisfy the applicant's commitments for the design, construction, and operation of the facility. These findings contribute to the staff’s judgment that the applicant complies with the requirements of 10 CFR 50.34, 10 CFR 50.40, 10 CFR 50.48, 10 CFR Part 50 Appendix B, 10 CFR 52.79, and 10 CFR 50.80, as applicable; that is, the applicant is technically qualified to engage in design and construction activities.

The applicant has described the assignment of plant operating responsibilities; the reporting chain up through the chief executive officer; the proposed size of the regular plant staff; the functions and responsibilities of each major plant staff group; the proposed shift crew complement for single-unit or multiple-unit operation; the qualification requirements for members of its plant staff; and staff qualifications of plant managerial and supervisory positions (through personnel resumes for plant managerial and principle supervisory and technical positions as

submitted during the later stages of plant design, construction, and licensing). In Table 1.9-202, "Conformance with SRP Acceptance Criteria," of the Turkey Point Units 6 and 7 COL FSAR, the applicant noted an exception to the criteria of NUREG-0800, Section 13.1.2–13.1.3 that suggests resumes of personnel holding plant managerial and supervisory positions be included in the FSAR. The staff finds this exception to the criteria of NUREG-0800, Section 13.1.2–13.1.3 acceptable because personnel filling the management and principal supervisory and technical positions will meet the education and experience requirements of the ANSI/American Nuclear Society (ANS)-3.1-1993, as endorsed and amended by RG 1.8, Revision 3. Resumes for the personnel filling the plant managerial and principle supervisory and technical positions will be verified during the Construction Inspection Program.

NUREG-0800, Section 13.1.2–13.1.3, "Operating Organization," provides the following acceptable characteristics for an applicant's operating organization:

1. 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).

2. On-shift personnel are able to provide initial facility response in the event of an emergency.

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

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

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

6. The applicant has complied with TMI Action Plan items I.A.1.1 and I.A.1.3.

The staff reviewed the application in regard to the characteristics identified in items 1-6 above, and finds that the operating organization proposed by the applicant will comply with these characteristics. That is, the applicant is technically qualified to engage in design and construction activities, and to operate a nuclear power plant; that the applicant will have the necessary managerial and technical resources, and financial resources as Florida Power and Light (FPL) is a regulated utility, to support the plant staff in the event of an emergency; and that the applicant has identified the organizational positions responsible for fire protection matters and delegated the authorities to these positions to implement fire protection requirements. These findings contribute to the judgment that the applicant complies with the requirements of 10 CFR 50.40(b).

- PTN COL 9.5-1

The staff reviewed Turkey Point Units 6 and 7 site-specific information to resolve PTN COL Item 9.5-1. PTN COL Item 9.5-1 addresses the fire protection program responsibilities as shown on Figure 13.1-201 of the COL. This item is cross-referenced to Turkey Point Units 6 and 7 COL FSAR Section 9.5.1 in Table 1.8-202, "COL Item Tabulation."

The applicant added text to Turkey Point Units 6 and 7 COL FSAR Section 13.1.1.2.10, "Fire Protection," indicating that the nuclear power station is committed to maintaining a fire protection program as described in Turkey Point Units 6 and 7 COL FSAR Section 9.5. The

applicant also added text to Turkey Point Units 6 and 7 COL FSAR Section 13.1.2.1.3.9, "Fire Protection Supervisor and Fire Protection Engineer," describing the responsibilities for the fire protection supervisor and the fire protection engineer. From Figure 13.1-201 of the COL FSAR, the staff determined that the fire protection supervisor reports through the program engineering manager to the site vice president, who has ultimate responsibility for the fire protection program. Fire Protection Program implementation and maintenance are the responsibilities of the fire protection engineer. The fire protection supervisor is qualified in accordance with ANSI/ANS-3.1-1993 and the fire protection engineer is qualified in accordance with RG 1.189, "Fire Protection for Nuclear Power Plants."

The staff reviewed Section 13.1.1.2.10 and Section 13.1.2.1.3.9 of the COLA. Based on these section's descriptions of management, responsibilities, and qualification requirements, as described above, the staff finds the applicant's fire protection organization meets the organizational criteria of10 CFR 50.48 . The technical review for PTN COL 9.5-1 as it relates to the fire protection program programmatic requirements is addressed in Section 9.5 of this safety evaluation report (SER).

- PTN COL 18.6-1

The staff reviewed Turkey Point Units 6 and 7 site-specific information to resolve PTN COL 18.6-1. PTN COL 18.6-1 requires the COL applicant to address the staffing levels and qualifications of plant personnel. This item is cross-referenced to Turkey Point Units 6 and 7 COL FSAR Section 18.6 in Table 1.8-202, "COL Item Tabulation."

In Table 1.9-202, "Conformance with SRP Acceptance Criteria," of the Turkey Point Units 6 and 7 COL FSAR, the applicant noted an exception to the criteria of NUREG-0800 Section 13.1.1 that suggest the experience necessary for managers and supervisors of the technical support organization be included in the FSAR. The staff finds this exception to the criteria of NUREG-0800 Section 13.1.1 acceptable because the applicant added text to Turkey Point Units 6 and 7 COL FSAR Section 13.1.1.4, "Qualifications of Technical Support Personnel," stating the qualifications of managers and supervisors of the technical support organization will meet the education and experience standards described in ANSI/ANS-3.1-1993 and RG 1.8, which specifies qualifications for these positions that are acceptable to the staff.

The applicant added text to Turkey Point Units 6 and 7 COL FSAR Section 13.1.3.1, "Qualification Requirements," stating the qualifications of managers, supervisors, operators, and technicians of the operating organization "will meet the education and experience requirements described in ANSI/ANS-3.1-1993 (Reference 201) as endorsed and amended by and RG 1.8." In addition, Section 13.1.3.2 states that resumes and other documentation of the qualifications and experience of initial appointees to appropriate management and supervisory positions will be available for NRC inspection after position vacancies are filled. The staff finds this acceptable because personnel filling the management and principal supervisory and technical positions will meet the education and experience standards of the ANSI/ANS-3.1-1993, as endorsed and amended by RG 1.8, Revision 3 and their resumes will be available for NRC review after position vacancies are filled.

The applicant added Turkey Point Units 6 and 7 COL FSAR Table 13.1-201, "Generic Position/Site-Specific Position Cross Reference" and Turkey Point Units 6 and 7 COL FSAR Table 13.1-202, "Minimum On-Duty Operations Shift Organization for Two-Unit Plant." Table 13.1-201 describes the plant management, technical support, and plant operating

organizations, expected staffing, and a cross-reference to identify the corresponding generic and site-specific position titles. Table 13.1-202 describes the minimum composition of the operating shift crew for all modes of operation and meets the staffing levels of 10 CFR 50.54 (m). Position titles, license requirements, and minimum shift manning for the various modes of operation are in the Technical Specifications, administrative procedures, Table 13.1-201, Table 13.1-202, and illustrated in Figure 13.1-202.

The staff reviewed the text added to Turkey Point Units 6 and 7 COL FSAR Sections 13.1.1.4 and 13.1.3.1 relative to PTN COL 18.6-1 and concludes that the provisions for qualification of managers and supervisors are acceptable and meet 10 CFR 50.40(b) based on the following:

The applicant has described its organization for the management of, and its means of providing, technical support for the plant staff for the design, construction, and operation of the facility and has described its plans for managing the project and utilizing the NSSS vendor and AE. These plans give reasonable assurance that the applicant will establish an acceptable organization and that sufficient resources are available to provide offsite technical support and to satisfy the applicant's commitments for the design, construction, and operation of the facility.

- PTN COL 18.10-1

The staff reviewed Turkey Point Units 6 and 7 site-specific information to resolve PTN COL 18.10-1. PTN COL 18.10-1 requires the COL applicant to address training program development. This item is cross-referenced to Turkey Point Units 6 and 7 COL FSAR Section 13.2 and Section 18.10 in Table 1.8-202, "COL Item Tabulation."

PTN COL 18.10-1 is discussed in Section 13.1.1.3.2.5, "Training Manager." PTN COL 18.10-1 describes the responsibilities of the manager responsible for training programs upon which the applicant relies for the safe and proper operation and maintenance of the plant. The staff concludes that the training manager responsibilities described in Section 13.1.1.3.2.5 are acceptable and meet the regulatory guidelines identified in NUREG-0800 Sections 13.1.1, 13.1.2-13.1.3, and 13.2, as the applicant has described how the training manager will carry out his or her position responsibilities for designing, developing, implementing, and maintaining training programs for the safe and proper operation and maintenance of the plant. Accordingly, the application meets the requirements of 10 CFR 50.40(b) in regard to the qualifications of the training manager. The technical review for PTN COL 18.10-1 is addressed in Section 18.10 of this SER.

13.1.5 Post Combined License Activities

There are no post-COL activities related to this section.

13.1.6 Conclusion

The staff's technical evaluation of the information incorporated by reference in the Turkey Point Units 6 and 7 COLA related to information incorporated by reference is in NUREG-1793 and its supplements. NRC staff reviewed the application and checked the referenced DCD. The staff's review confirmed that the applicant has addressed the relevant information relating to this section, and no outstanding information related to this section remains to be addressed in the Turkey Point Units 6 and 7 COL FSAR. Pursuant to 10 CFR 52.63(a)(5) and 10 CFR Part 52, Appendix D, Section VI.B.1, all nuclear safety issues relating to this section that were incorporated by reference have been resolved.

The applicant has described clear responsibilities and definite resources for the design and construction of the facility, and has described its plans for managing the project and utilizing the NSSS vendor and AE. The staff reviewed these plans, and for the reasons set forth above, finds that they give adequate assurance that an acceptable organization has been established and that sufficient resources are available such that the applicant will satisfy its commitments in the application for the design and construction of the facility. These findings contribute to the judgment that the applicant complies with the requirements of 10 CFR 50.34, 10 CFR 50.40, 10 CFR 50.48, 10 CFR Part 50 Appendix B, 10 CFR 52.79, and 10 CFR 50.80, as applicable; that is, the applicant is technically qualified to engage in design and construction activities.

The applicant has described its organization for the management of, and its means of providing, technical support for the plant staff during operation of the facility. The NRC staff has reviewed these measures, and, for the reasons set forth above, concludes that the applicant has an acceptable organization and adequate resources to provide offsite technical support for the operation of the facility under both normal and off-normal conditions.

The applicant has described the assignment of plant operating responsibilities; the reporting chain up to the chief executive office of the applicant; the proposed size of the regular plant staff; the functions and responsibilities of each major plant staff group; the proposed shift crew complement for single-unit or multiple-unit operation; the qualification of its plant staff; and staff qualifications.

For the reasons described above, the staff finds that the operating organization proposed by the applicant will conform to these characteristics, and will comply with the requirements of 10 CFR 50.40(b) and 10 CFR 50.80, as applicable. That is, the applicant is technically qualified to operate a nuclear power plant; the applicant will have the necessary managerial and technical resources to support the plant staff in the event of an emergency; and the applicant has identified the organizational positions responsible for fire protection matters and delegated the authorities to these positions to implement fire protection requirements.

In addition, the staff concludes that the information presented in the Turkey Point Units 6 and 7 COL FSAR is acceptable because it meets the acceptance criteria identified in RGs 1.8, 1.28, 1.33 and 1.114. For the reasons set forth above the staff concludes that the organizational structure of the COL applicant is acceptable because it meets the requirements of 10 CFR 50.40(b) and 10 CFR 50.80, as applicable.

13.2 Training

13.2.1 Introduction

This section addresses the description and schedule of the training program for reactor operators (ROs) and senior reactor operators (SROs) (i.e., licensed operators). It addresses the scope of licensing examinations as well as training requirements of 10 CFR 55. The licensed operator training program also includes the requalification programs as required in 10 CFR 50.54(i)(i-1) and 10 CFR 55.59, “Requalification.” In addition, this section of the Turkey Point Units 6 and 7 COL FSAR includes the description and schedule of the training program for nonlicensed plant staff, including the programs required by 10 CFR Parts 50.120.

13.2.2 Summary of Application

Section 13.2 of the Turkey Point Units 6 and 7 COL FSAR, Revision 8, incorporates by reference Section 13.2 of the AP1000 DCD, Revision 19.

In addition, in Turkey Point Units 6 and 7 COL FSAR Section 13.2, the applicant provides the following:

AP1000 COL Information Items

- STD COL 13.2-1

The applicant provided additional information in Standard (STD) COL 13.2-1 to resolve COL Information Item 13.2-1 (COL Action Item 13.2-1), which incorporates the provisions of Nuclear Energy Institute (NEI) 06-13A, "Template for an Industry Training Program Description," providing the description and scheduling of the training program for plant personnel, including the requalification program for licensed operators.

- STD COL 18.10-1

The applicant provided additional information in STD COL 18.10-1 to address training for those operators involved in the Human Factors Engineering (HFE) Verification and Validation (V&V) Program, using a systematic approach to training and Westinghouse Commercial Atomic Power (WCAP)-14655, "Designer's Input to the Training of the Human Factors Engineering Verification and Validation Personnel."

License Conditions

- Part 10, License Condition 3, Items B.1, C.3

The applicant proposed a license condition in Part 10 of the Turkey Point Units 6 and 7 COL application, which provides the milestones for implementing the Reactor Operator Training (B.1) and the applicable portions of the Non-Licensed Plant Staff Training Program (C.3) (required in accordance with 10 CFR 50.120, "Training and qualification of nuclear power plant personnel"). The license condition related to the portions of the Non-Licensed Plant Staff Training Program applicable to radioactive material is addressed in Chapter 1 of this SER.

- Part 10, License Condition 6

The applicant proposed a license condition to provide a schedule to support the NRC's inspection of operational programs included in Turkey Point Units 6 and 7 COL FSAR Table 13.4-201, including the Non-Licensed Plant Staff Training Program (required in accordance with 10 CFR 50.120), Reactor Operator Training Program, and the Reactor Operator Requalification Program.

13.2.3 Regulatory Basis

The regulatory basis of the information incorporated by reference is addressed in NUREG-1793 and its supplements.

In addition, the acceptance criteria associated with the relevant requirements of the Commission regulations for the description and schedule of the training program for licensed operators are given in Sections 13.2.1 and 13.2.2, and Chapter 18 of NUREG-0800.

The applicable regulations for STD COL 13.2-1 are as follows:

- 10 CFR 50.54(m)
- 10 CFR Part 55

The applicable regulations for the Non-Licensed Plant Staff Training Program are as follows:

- 10 CFR 50.120
- 10 CFR 52.79(a)(33), "Contents of applications; technical information"

The applicable regulations for the licensed operators training program are as follows:

- 10 CFR 55.13, "General exemptions"
- 10 CFR 55.31, "How to apply"
- 10 CFR 55.41, "Written examinations: Operators"
- 10 CFR 55.43, "Written examinations: Senior operators"
- 10 CFR 55.45, "Operating tests"

The applicable regulations for the licensed operator's requalification program are found in:

- 10 CFR 50.34(b), "Final safety analysis report"
- 10 CFR 50.54(i)
- 10 CFR 55.59

The applicable regulatory guidance documents for STD COL 13.2-1 are as follows:

- RG 1.8
- RG 1.149, "Nuclear Power Plant Simulation Facilities for Use in Operator Training and License Examinations"
- NUREG-1021, "Operator Licensing Examination Standards for Power Reactors"

The applicable regulatory guidance for STD COL 18.10-1 is as follows:

- NUREG-0711, "Human Factors Engineering Program Review Model"

13.2.4 Technical Evaluation

The staff reviewed Section 13.2 of the Turkey Point Units 6 and 7 COL FSAR and checked the referenced DCD to ensure that the combination of the DCD and the COLA represents the complete scope of information relating to this review topic.[1] The staff's review confirmed that the information in the application and incorporated by reference addresses the required information relating to the description and schedule of the training programs for nuclear plant personnel. The results of the staff's evaluation of the information incorporated by reference in the Turkey Point Units 6 and 7 COLA are documented in NUREG-1793 and its supplements.

Section 1.2.3 of this SER provides a discussion of the strategy used by the NRC to perform one technical review for each standard issue outside the scope of the DC and use this review in evaluating subsequent COLAs. To ensure that the staff's findings on standard content that were documented in the SER for the reference COLA (Vogtle Electric Generating Plant (VEGP), Units 3 and 4) were equally applicable to the Turkey Point Units 6 and 7 COLA, the staff undertook the following reviews:

- The staff compared the VEGP COL FSAR, Revision 5 to the Turkey Point Units 6 and 7 COL FSAR. In performing this comparison, the staff considered changes made to the Turkey Point Units 6 and 7 COL FSAR (and other parts of the COLA, as applicable) resulting from VEGP COL FSAR RAIs.

- The staff confirmed that all responses to VEGP COL FSAR RAIs identified in the corresponding standard content evaluation were endorsed.

- The staff verified that the site-specific differences were not relevant.

The staff has completed its review and has verified that the Turkey Point Units 6 and 7 application incorporates the standard content information included in the Vogtle application. Accordingly, the staff finds the evaluation performed for the standard content to be directly applicable to the Turkey Point Units 6 and 7 COLA. This standard content material is identified in this SER by use of italicized, double-indented formatting. Section 1.2.3 of this SER provides an explanation of why the standard content material from the SER for the reference COLA (VEGP) includes evaluation material from the SER for the Bellefonte Nuclear Plant (BLN) Units 3 and 4 COLA. In addition, the Staff did not pose any RAIs to FPL regarding the standard content described above, and there was no need to evaluate any information in addition to the standard content.

The following portion of this technical evaluation section is reproduced from Section 13.2.4 of the VEGP SER:

AP1000 COL Information Items

- *STD COL 13.2-1*

The NRC staff reviewed STD COL 13.2-1 related to COL Information Item 13.2-1 (COL Action Item 13.2-1) included under Section 13.2 of the BLN COL FSAR. COL Information Item 13.2-1 states:

> *The Combined License applicants referencing the AP1000 certified design will develop and implement training programs for plant personnel. This includes the training program for the operations personnel who participate as subjects in the human factors engineering verification and validation. These Combined License applicant training programs will address the scope of licensing examinations as well as new training requirements.*

The commitment was also captured as COL Action Item 13.2-1 in Appendix F of the NRC staff FSER for the AP1000 DCD (NUREG-1793), which states:

> *The COL applicant will develop and implement training programs for plant personnel.*

The applicant provided the following text to supplement Section 13.2, "Training," of the AP1000 DCD, dealing with the training program for plant personnel.

> *This section incorporates by reference NEI 06-13 (sic) [*NEI 06-13A*], Template for an Industry Training Program Description. See Table 1.6-201.*

This technical report provides a complete training program description for use with COL applications. The staff has endorsed NEI 06-13A, Revision 1, as it provides an acceptable template for describing licensed operators and non-licensed plant staff training programs. The applicant has incorporated by reference NEI 06-13A.

The applicant provided the following text to supplement Section 13.2, "Training," of the AP1000 DCD, which is included in the [design certification] *DC amendment as part of the BLN COL FSAR to address STD COL 13.2-1, dealing with the training program for plant personnel.*

> *Table 13.4-201 provides milestones for training implementation.*

NUREG-0800, Section 13.2.1, establishes milestones for the licensed operators and non-licensed plant staff training programs and for the licensed operator requalification training program. The BLN COL FSAR has identified those milestones in Table 13.4-201. The staff determined that this is acceptable, as the milestone information included in this table meets the criteria found in NUREG-0800.

- *STD COL 18.10-1*

The NRC staff reviewed STD COL 18.10-1, related to COL Information Item 18.10-1 (COL Action Item 18.10.3-1). COL Information Item 18.10-1 states:

> *Combined License applicants referencing the AP1000 certified design will develop and implement training programs for plant personnel. This includes the training program for the operations personnel who participate as subjects in the human factors engineering verification and validation. These Combined License applicant training programs will address the scope of licensing examinations as well as new training requirements.*

The commitment was also captured as COL Action Item 18.10.3-1 in Appendix F of the NRC staff's FSER for the AP1000 DCD (NUREG-1793), which states:

> *With regard to the training program development, the COL applicant will: (1) address the training program development*

considerations in NUREG-0711, (2) address relevant concerns identified in this report [NUREG-1793], *and (3) identify the minimum documentation that the COL applicant will provide to enable the staff to complete its review.*

This section refers to Sections 13.1, "Organizational Structure of Applicant" and 13.2, "Training" regarding the training program development.

The NRC staff reviewed the resolution to STD COL 18.10-1, related to staffing and qualifications included under Section 18.10 of the BLN COL FSAR. The applicant provided the referenced NRC-endorsed NEI 06-13A, Revision 1, to address COL Information Item 18.10-1.

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, was an acceptable means for describing licensed operator and non-licensed plant staff training programs. The staff finds the applicant's incorporation of NEI 06-13A, Revision 1 to be acceptable because it utilizes an NRC-endorsed methodology.

In Table 1.9-202, "Conformance with SRP Acceptance Criteria," of the BLN COL FSAR, the applicant identified two exceptions to the criteria of NUREG-0800, Section 13.2, which recommends following the guidance in NUREG-0711 and RG 1.149. Further, the applicant stated in Table 1.9-202 that NEI 06-13A is incorporated by reference into the BLN COL FSAR. The staff's safety evaluation report for NEI 06-13A (ML0709504790) states that NEI 06-13A complies with the guidance in NUREG-0711 and RG 1.149. Therefore, the staff finds the two exceptions to the criteria in NUREG-0800, Section 13.2 to be acceptable because NEI 06-13A complies with the guidance in NUREG-0711 and RG 1.149.

License Conditions

- *Part 10, License Condition 3, Item B1*

The NRC staff finds the implementation milestone for the Reactor Operator Training Program (18 months prior to schedule date of initial fuel load) to be acceptable because it is consistent with 10 CFR 50.120.

- *Part 10, License Condition 6*

The applicant proposed a license condition in Part 10 of the VEGP COL application to provide a schedule to support the NRC's inspection of operational programs, including the Non-Licensed Plant Staff Training Program, (required in accordance with 10 CFR 50.120), Reactor Operator Training Program, and Reactor Operation Requalification Program. The proposed license condition is consistent with the policy established in SECY-05-0197, "Review of Operational Programs in a Combined License Application and Generic Emergency Planning Inspections, Tests, Analyses, and Acceptance Criteria," for operational programs in general, and is acceptable.

The Turkey Point Units 6 and 7 application incorporates the standard content information included in the Vogtle application and there is no additional Turkey Point specific information that required evaluation by the staff and as such the Staff did not pose any RAIs to FPL on this section as described above. The staff finds the evaluation performed for the standard content to be directly applicable to the Turkey Point Units 6 and 7 COLA.

13.2.5 Post Combined License Activities

For the reasons discussed in the technical evaluation section above, the staff finds the following license conditions proposed by the applicant acceptable:

- License Condition (13-1)—The licensee shall implement the Reactor Operator Training Program at least 18 months before scheduled date of initial fuel load.

- License Condition (13-2)—No later than 12 months after issuance of the COL, the licensee shall submit to the Director of the Office of New Reactors (NRO) a schedule that supports planning for and conduct of NRC inspection of the operational programs (the Non-Licensed Plant Staff Training Program (required in accordance with 10 CFR 50.120), Reactor Operator Training Program, and Reactor Operation Requalification Program). The schedule shall be updated every 6 months until 12 months before scheduled fuel loading, and every month thereafter until these operational programs have been fully implemented.

13.2.6 Conclusion

The staff reviewed the application and checked the referenced DCD. The staff's review confirmed that the applicant has addressed the relevant information relating to this section, and no outstanding information related to this section remains to be addressed in the Turkey Point Units 6 and 7 COL FSAR. The results of the staff's technical evaluation of the information incorporated by reference in the Turkey Point Units 6 and 7 COLA are documented in NUREG-1793 and its supplements.

In addition, the staff concludes that the information presented in the Turkey Point Units 6 and 7 COL FSAR is acceptable because it meets the acceptance criteria provided in RGs 1.8 and 1.149. The staff based its conclusion on the following:

- STD COL 13.2-1 incorporates by reference NEI 06-13A, Revision 1, which provides an acceptable template for describing licensed operators and nonlicensed plant staff training programs. The staff determined that this is acceptable, as it applies an NRC-endorsed approach.

- STD COL 18.10-1, relating to training, references Section 13.2 of the Turkey Point Units 6 and 7 COL FSAR, in which the applicant has committed to use WCAP-14655 to ensure a systematic approach to training development, and has referenced NEI 06-13A, Revision 1. The staff finds this acceptable because it applies an NRC-endorsed approach.

13.3 Emergency Planning

13.3.1 Introduction

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

FPL is the applicant for the Turkey Point Units 6 and 7 COLs. FPL submitted its COLA (Revision 0) on June 30, 2009 (ADAMS Accession No. ML091830589), for two new nuclear reactors that will be located on the approximately 9,400 acres of Turkey Point plant property , designated as Turkey Point Units 6 and 7, in Miami-Dade County, Florida. The NRC docketed the application on September 4, 2009 (Docket Nos. 52-040 and 52-041) (ADAMS Accession No. ML092380248). FPL submitted COLA Revisions 1, 2, 3, 4, 5, 6, and 7 on September 3, 2010, December 21, 2010, December 16, 2011, December 14, 2012, December 16, 2013, October 29, 2014, and October 14, 2015, respectively. This SER section reflects the results of the staff's evaluation of the application, with regard to radiological emergency planning, which are based on COLA Revision 7 (ADAMS Accession No. ML15301A741).

Currently located on the site are five FPL power plants: two natural gas/oil steam electric generating units (Units 1 and 2), two pressurized-water reactor nuclear units (Units 3 and 4), and a natural gas combined cycle steam electric generating unit (Unit 5). The new reactors, Units 6 and 7, will be constructed on an approximately 218-acre area, south of Units 3 and 4. The boundary for the site footprints for Units 6 and 7 is entirely within the existing Turkey Point site exclusion area boundary, so that for purposes of emergency planning, little distinction exists between the existing reactor units (i.e., Units 3 and 4) and the new Units 6 and 7 proposed to be on the Turkey Point site. The COLA takes advantage of the emergency planning resources, capabilities, and organization that exist at the Turkey Point site for Units 3 and 4.

The applicant has submitted a complete and integrated emergency plan for Units 3, 4, 6, and 7 pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR 52.79(a)(21), which consists of the Turkey Point Plant Radiological Emergency Plan in Part 5 of the COLA (hereinafter referred to as "emergency plan" or "COL Plan"), and supplemental information that includes the offsite radiological emergency response plans for the State of Florida and Counties of Miami-Dade and Monroe, letters of agreement with various supporting offsite agencies and organizations, and the PTN Evacuation Time Estimate (ETE) Report No. KLD TR-509, Corrected Final Report, Revision 4, "Turkey Point Nuclear Power Plant—Development of Evacuation Time Estimates," April 15, 2015 (ADAMS Accession No. ML15301A346) (hereinafter referred to as "ETE Report"). The application also includes Table 3.8-1, "Emergency Plan Inspections, Tests, Analyses, and Acceptance Criteria," in Part 10, "Proposed License Conditions (Including ITAAC)," which provides a listing of EP inspections, tests, analyses, and acceptance criteria (ITAAC) that address required elements of emergency planning that cannot be completed during the COLA stage, and which will be completed before initial fuel load. The COLA also references the AP1000 standard design certification.

As described below, in consultation with FEMA, the staff reviewed the COLA, ETE Report, the applicant's responses to RAIs, and generally available reference material in accordance with the guidance provided in NUREG-0800 Section 13.3, "Emergency Planning," and Section 14.3.10, "Emergency Planning—Inspections, Tests, Analyses, and Acceptance Criteria." FEMA reviewed the offsite radiological emergency response plans of the State of Florida and local government plans for Miami-Dade and Monroe Counties in Florida.

In a letter dated December 23, 2009 (ADAMS Accession No. ML100980173), FEMA provided the NRC with its Interim Finding Report for Reasonable Assurance for the Turkey Point COLA, dated October 5, 2009 (ADAMS Accession No. ML100980192), which found that all planning standards associated with their review were adequate, and that the State and local emergency plans and preparedness are adequate and continue to be capable of implementation at the Turkey Point site in support of Units 6 and 7. The staff reviewed the FEMA findings, and the overall FEMA conclusions are reflected below in SER Sections 13.3.4 and 13.3.6.

13.3.2 Summary of Application

Section 13.3 of the Turkey Point Units 6 and 7 COL FSAR, Revision 8, incorporates by reference Revision 19 of the Westinghouse AP1000 DCD, Tier 2 Section 13.3.

In addition, in Turkey Point Units 6 and 7 COL FSAR Section 13.3, the applicant provided the following:

Tier 2 Departures

In COLA Part 2, Tier 2, [2] Table 1.8-201, "Summary of FSAR Departures from the DCD," and COLA Part 7, "Departures and Exemption Requests," the applicant identified the following two (Units 6 and 7) plant-specific departures from the AP1000 generic DCD, which are associated with emergency planning:

- PTN DEP 18.8-1

  The Operations Support Center (OSC) is being moved from the location identified in DCD Subsections 18.8.3.6, 12.5.2.2, and 12.5.3.2 and as identified on DCD figures in Subsections 1.2, 12.3, and Appendix 9A. There will be a single OSC for Units 6 and 7 located as described in the Emergency Plan.

- PTN DEP 18.8-2

  The Technical Support Center (TSC) is not located in the control support area as identified in DCD Subsection 18.8.3.5. The TSC is common for Turkey Point Units 3, 4, 6, and 7 and is located as described in the Emergency Plan.

The staff's evaluation of the applicant's description of these two DCD departures is addressed below in SER Section 13.3.4.8.

[2] The definitions of Tier 1, Tier 2, and Tier 2*, which reflect design-related information contained in the generic AP1000 DCD, are provided in 10 CFR Part 52, Appendix D, "Design Certification Rule for the AP1000 Design," Section II.

AP1000 COL Items

Consistent with the AP1000 Tier 2 DCD, in COLA Part 2 Table 1.8-202, "COL Item Tabulation," the applicant identified DCD COL (information) items, including the DCD subsections and FSAR sections where each COL item is resolved. In COLA Part 2 Section 13.3, the applicant identified the following two COL items relating to emergency planning:

- STD COL 13.3-1

The applicant provided additional information in STD COL 13.3-1 to address COL Information Item 13.3-1 (COL Action Item 13.3-1) of the AP1000 DCD, which states:

> Combined License applicants referencing the AP1000 certified design will address emergency planning including post-72 hour actions and its communication interface.

- STD COL 13.3-2

The applicant provided additional information in STD COL 13.3-2 to address COL Information Item 13.3-2 (COL Action Item 13.3.3.3.5-1) of the AP1000 DCD, which states:

> Combined License applicants referencing the AP1000 certified design will address the activation of the emergency operations facility [EOF] consistent with current operating practice and NUREG-0654/FEMA-REP-1 ["Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Revision 1 (hereinafter referred to as "NUREG-0654")].

The applicant also identified the following three additional COL items in their respective FSAR sections, which relate to emergency planning:

- PTN COL 9.5-9 and PTN COL 9.5-10

In COLA Part 2, Subsection 9.5.2.2.5, "Offsite Interfaces and Emergency Offsite Communications," the applicant provided additional information in PTN COL 9.5-9 and PTN COL 9.5-10 to address COL Information Items 9.5-9 and 9.5.10 (COL Action Items 9.5.2-3 and 9.5.2-1, respectively) of the AP1000 DCD. Specifically, the applicant stated that offsite interfaces and emergency offsite communications are described in the emergency plan. COL Information Items 9.5-9 and 9.5-10 are as follows:

> PTN COL 9.5-9—Combined License applicants referencing the AP1000 certified design will address interfaces to required offsite locations; this will include addressing the recommendations of BL-80-15 ([DCD] Reference 21)[3] regarding loss of the emergency notification system due to a loss of offsite power.
>
> PTN COL 9.5-10—The emergency offsite communication system, including the crisis management radio system, will be addressed by the Combined License applicant.

[3] NRC IE Bulletin No. 80-15 (BL-80-15), "Possible Loss of Emergency Notification System (ENS) with Loss of Offsite Power," June 18, 1980.

- PTN COL 18.2-2

In COLA Part 2, Section 18.2, "Human Factors Engineering Program Management," the applicant provided additional information in PTN COL 18.2-2 to address COL Information Item 18.2-2 (COL Action Item 18.2.3.1-1) of the AP1000 DCD. Specifically, the applicant stated that the EOF and TSC communication strategies and human factors attributes are described in the emergency plan. As reflected in DCD Tier 2 Subsection 18.2.6.2, "Emergency Operations Facility," COL Information Item 18.2-2 states:[4]

> Specific information regarding EOF and TSC communications, and EOF and TSC human factors attributes will be provided by the Combined Operating License applicant to address the Combined License information requested in this subsection [i.e., DCD Tier 2 Subsection 18.2.6].

The staff's evaluation of the applicant's resolution of these five COL items is addressed below in SER Section 13.3.4.18.

Supplemental Information

- STD SUP 13.3-1

In COLA Part 2, Section 13.3, "Emergency Planning," the applicant provided supplemental information in STD Supplement (SUP) 13.3-1, which states that FSAR Table 13.4-201, "Operational Programs Required by NRC Regulations," provides milestones for emergency planning program implementation. STD SUP 13.3-1 is evaluated by the staff as part of its evaluation of implementation milestones and proposed License Condition 6 in SER Section 13.3.4.19.

- PTN SUP 14.3-1

The applicant provided the following statement in COLA Part 2, Subsection 14.3.2.3.1, "Emergency Planning ITAAC (EP-ITAAC)," with regard to EP ITAAC:

> EP-ITAAC have been developed to address implementation of elements of the Emergency Plan. Site-specific EP-ITAAC are based on the generic ITAAC provided in Appendix C.II.1-B of Regulatory Guide 1.206 ["Combined License Application for Nuclear Power Plants (LWR Edition)"]. These ITAAC have been tailored to the specific reactor design and emergency planning program requirements.

The EP ITAAC are identified below under *ITAAC*, and PTN SUP 14.3-1 is evaluated by the staff as part of its evaluation of ITAAC and proposed License Condition 1 in SER Section 13.3.4.19.

Onsite Emergency Plan

[4] See also, Section 18.2.7, "Evaluation of COL Information Item 18.2-2 (no comparable NUREG-1793 section)," of NUREG-1793, Supplement 2, Volume 2, "Final Safety Evaluation Report Related to Certification of the AP1000 Standard Plant Design – Docket No. 52-006," August 5, 2011 (published September 2011) (ADAMS Accession No. ML112061231).

Emergency planning for Units 6 and 7 is addressed throughout COLA Part 2, with the Turkey Point Plant Radiological Emergency Plan for Units 6 and 7 (provided in COLA Part 5. The COL Plan consists of a full and integrated emergency plan, which includes three annexes that describe unit-specific information. Specifically, Annex 1 applies to the existing Units 3 and 4; Annex 2 applies to the new Unit 6; and Annex 3 applies to the new Units 6 and 7. The COL Plan also includes six appendices (listed below), which provide additional detailed information on various aspects of the COLA and emergency plan. The staff's review and findings in this SER section apply only to the proposed Units 6 and 7.

- Appendix 1 References
- Appendix 2 Letters of Agreement
- Appendix 3 Procedure Cross-Reference to the Emergency Plan
- Appendix 4 Abbreviations, Acronyms, and Definitions
- Appendix 5 Evacuation Time Estimate
- Appendix 6 NUREG-0654 Cross Reference

Offsite Emergency Plans

Pursuant to 10 CFR 50.33(g), a COL applicant is required to submit the radiological emergency response plans of State and local governments that are wholly or partially within the 16-kilometer (km) (10-mile (mi)) plume exposure pathway emergency planning zone (EPZ), as well as plans of State governments wholly or partially within the 80-km (50-mi) ingestion pathway EPZ (hereinafter referred to as the "10-mi EPZ" and "50-mi EPZ"). The COLA includes supplemental information consisting of the offsite radiological emergency response plans for the State of Florida and Miami-Dade and Monroe Counties in Florida. The supplemental information also includes letters of agreement with various supporting offsite agencies and organization (discussed below in SER Sections 13.3.4.1, 13.3.4.2, 13.3.4.3, and 13.3.4.12), and the detailed ETE Report for the 10-mi EPZ (discussed below in SER Section 13.3.4.17).

License Conditions

COLA Part 10, "Proposed License Conditions (Including ITAAC)," includes the following proposed license conditions related to emergency planning:

- License Condition 1 (ITAAC)

  The ITAAC identified in the tables in Appendix B are hereby incorporated into this Combined License. After the Commission has made the finding required by 10 CFR 52.103(g), the ITAAC do not constitute regulatory requirements; except for specific ITAAC, which are the subject of a Section 103(a) hearing, their expiration will occur upon final NRC action in such proceeding.

- License Condition 6 (Operational Program Readiness)

  The licensee shall submit to the appropriate director of the NRC, a schedule, no later than 12 months after issuance of the COL, that supports planning for and conduct of NRC inspections of operational programs listed in the operational program FSAR Table 13.4-201. The schedule shall be updated every 6 months until 12 months before scheduled fuel loading, and every month thereafter until either the operational programs in the FSAR table have been fully implemented

or the plant has been placed in commercial service, whichever comes first. This schedule shall also address:

a. the emergency planning implementation procedures are consistent with 10 CFR Part 50, Appendix E, Section V

e. an emergency response data system (ERDS) implementation program plan consistent with 10 CFR Part 50, Appendix E, Section [VI]

g. full implementation of the operational and programmatic elements of responding to an event associated with a loss of large areas of the plant due to explosions or fire, prior to initial fuel load

- License Condition 11.A (Emergency Planning Actions—Emergency Action Levels)

  The licensee shall submit a fully developed set of site-specific Emergency Action Levels (EALs) to the NRC in accordance with the NRC-endorsed version of [Nuclear Energy Institute] NEI 07-01, "Methodology for Development of Emergency Action Levels—Advanced Passive Light Water Reactors," Revision 0, July 2009 (ADAMS Accession No. ML090930549), with no deviations. The EALs shall have been discussed and agreed upon with State and local officials. These fully developed EALs shall be submitted to the NRC for confirmation at least 180 days prior to initial fuel load.

- License Condition 11.B (Emergency Planning Actions—On-Shift Staffing Assessment)

  At least two (2) years before scheduled initial fuel load, the licensee shall have performed an assessment of emergency response staffing in accordance with NEI 10-05, "Assessment of On-Shift Emergency Response Organization Staffing and Capabilities," or other NRC-endorsed guidance in effect six (6) months prior to commencement of the assessment.

- License Condition 12.C (Fukushima Actions – Emergency Planning Actions)

  Staffing

  At least two (2) years prior to scheduled initial fuel load, the licensee shall have performed an assessment of the onsite and augmented staffing capability to satisfy the regulatory requirements for response to a multi-unit event. The staffing assessment will be performed in accordance with NEI 12-01, "Guideline for Assessing Beyond Design Basis Accident Response Staffing and Communications Capabilities," or other NRC-endorsed guidance in effect six (6) months prior to commencement of the assessment.

  At least two (2) years prior to scheduled initial fuel load, the licensee will revise the Emergency Plan to include the following:

  - Incorporation of corrective actions identified in the staffing assessment described above.

- Identification of how the augmented staff will be notified given degraded communications capabilities.

Communications

At least two (2) years prior to scheduled fuel load, the licensee shall have performed an assessment of on-site and off-site communications systems and equipment required during an emergency event to ensure communications capabilities can be maintained during prolonged station blackout conditions. The communications capability assessment will be performed in accordance with NEI 12-01, "Guideline for Assessing Beyond Design Basis Accident Response Staffing and Communications Capabilities," or other NRC-endorsed guidance in effect six (6) months prior to commencement of the assessment.

At least one hundred eighty (180) days prior to scheduled initial fuel load, the licensee shall complete implementation of corrective actions identified in the communications capability assessment described above, including any related emergency plan and implementing procedure changes and associated training.

The staff's evaluation of these five proposed license conditions is addressed below in SER Sections 13.3.4.2, 13.3.4.4, 13.3.4.6, and 13.3.4.19.

ITAAC

COLA Part 10 proposes License Condition 1 (described above), which incorporates the ITAAC identified in Part 10 Appendix B into the COL. Appendix B includes Table 3.8-1 (EP ITAAC) and incorporates by reference the AP1000 DCD ITAAC. The DCD ITAAC include the six AP1000 design-related EP ITAAC in DCD Tier 1 Table 3.1-1, "Inspections, Tests, Analyses, and Acceptance Criteria." Four of these EP ITAAC in DCD Table 3.1-1 duplicate or overlap similar EP ITAAC in Part 10 Table 3.8-1 (e.g., TSC floor space). The remaining two EP ITAAC in DCD Table 3.1-1 address the display of various plant parameters in the TSC and Control Support Area (CSA) habitability. DCD Table 3.1-1 also addresses the AP1000 locations of the OSC and TSC, which are moved by COLA Tier 2 Departures PTN DEP 18.8-1 and PTN DEP 18.8-2, respectively, and evaluated below in SER Section 13.3.4.8. The EP ITAAC are evaluated below in SER Section 13.3.4.19, and specific EP ITAAC are identified within their respective planning standard in SER Section 13.3.4.

13.3.3 Regulatory Basis

The regulatory basis of the AP1000 DCD information incorporated by reference is addressed in NUREG-1793, "Final Safety Evaluation Report Related to Certification of the AP1000 Standard Design," and its supplements. The applicable regulatory requirements for emergency planning are as follows:

- 10 CFR 52.79(a)(21) requires that the FSAR include emergency plans that comply with the requirements of 10 CFR 50.47, "Emergency plans," and 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities," Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities." In addition, 10 CFR 52.79(a)(22)(i) requires certifications from State and local governmental agencies with emergency planning responsibilities. Under 10 CFR 50.47(a)(1)(ii), no initial COL under 10 CFR Part 52, "Licenses, Certifications, and Approvals for Nuclear

Power Plants," will be issued unless a finding is made by the NRC that there is 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 its findings on a review of the FEMA findings and determinations as to whether State and local emergency plans are adequate, and whether there is reasonable assurance that they can be implemented, and on the NRC assessment as to whether the applicant's onsite emergency plans are adequate and whether there is reasonable assurance that they can be implemented.

- The staff also considered the applicable requirements in Subsection (g) of 10 CFR 50.33, "Contents of applications; general information"; 10 CFR 50.72, "Immediate notification requirements for operating nuclear power reactors"; 10 CFR 52.80, "Contents of applications; additional technical information"; 10 CFR 52.83, "Finality of referenced NRC approvals; partial initial decision on site suitability"; and 10 CFR 100.21, "Non-seismic siting criteria."

The applicable regulatory guidance for emergency planning is as follows:

- NUREG-0800 identifies NUREG-0654 and other related guidance that the staff should consider during its review. The related acceptance criteria are identified in NUREG-0800, Section 13.3.II, and the applicable regulatory guidance for reviewing emergency preparedness as an operational program is established in NUREG-0800, Section 13.4. In addition, the staff considered NUREG/CR-7002, "Criteria for Development of Evacuation Time Estimate Studies" (November 2011); NUREG/CR-6863, "Development of Evacuation Time Estimate Studies for Nuclear Power Plants" (January 2005); and Interim Staff Guidance (ISG) NSIR/DPR-ISG-01.[5]

- 44 CFR Part 350, "Review and Approval of State and Local Radiological Emergency Plans and Preparedness," and 44 CFR Part 352, "Commercial Nuclear Power Plants: Emergency Preparedness Planning," provide procedures for FEMA's review and evaluation of the adequacy of offsite radiological emergency planning and preparedness. Pursuant to 44 CFR Part 353, "Memorandum of Understanding between Federal Emergency Management Agency and Nuclear Regulatory Commission Relating to Radiological Emergency Planning and Preparedness," Appendix A, "Memorandum of Understanding Between Federal Emergency Management Agency and Nuclear Regulatory Commission" (58 FR 47996, September 14, 1993), FEMA provides its findings and determinations on offsite planning and preparedness to the NRC for its use in the licensing process.

13.3.4 Technical Evaluation

The staff reviewed the information in the COLA, including FSAR Section 13.3, "Emergency Planning," and the COL Plan for conformance with applicable standards and requirements identified in NUREG-0800 Sections 13.3 and 14.3.10. The emergency planning ITAAC for the new reactors are provided below in SER Table 13.3-1, "PTN Units 6 and 7 ITAAC," which

[5] NSIR/DPR-ISG-01, Revision 0, "Emergency Planning for Nuclear Power Plants," November 2011 (ADAMS Accession No. ML113010523), provides updated guidance based on changes to emergency planning regulations in 10 CFR 50.47 and 10 CFR Part 50, Appendix E, that were published as a final rule in the *Federal Register* (FR) on November 23, 2011 (76 FR 72560), and on integrated offsite response organization event response concepts with onsite emergency planning programs.

reflects the EP ITAAC in Part 10 Table 3.8-1, and are supplemented by the EP ITAAC in DCD Tier 1 Table 3.1-1. The EP ITAAC are evaluated below in SER Section 13.3.4.19, and specific EP ITAAC are identified within their respective planning standard.

In addition, the staff reviewed selected portions of the emergency response plans for the State of Florida and Miami-Dade and Monroe Counties for understanding and content, in relation to consistency with various sections of the COL Plan that address offsite support and response. The staff checked the referenced DCD to ensure that the combination of the DCD and the COLA represents the complete scope of information relating to this review topic.[6] The staff's review confirmed that the information in the application and incorporated by reference addresses the required information relating to emergency planning. The results of the staff's evaluation of the referenced DCD are documented in NUREG-1793 and its supplements.

The staff's and FEMA's technical reviews of the COLA addressed all of the relevant evaluation criteria in the 16 planning standards (i.e., A through P) of NUREG-0654, consistent with NUREG-0800 Section 13.3, which cites the applicable regulations. As stated above, the proposed boundary for the site footprints for Units 6 and 7 is entirely within the existing Turkey Point site exclusion area boundary, so that for purposes of emergency planning, little distinction exists between the Turkey Point site (for existing reactor Units 3 and 4) and the new Units 6 and 7. The COLA takes advantage of the emergency planning resources, capabilities, and organization that currently exist at the Turkey Point site for Units 3 and 4. NUREG-0800 Section 13 Subsection I, "Areas of Review," provides, in part, the following guidance to the staff regarding the appropriate level of review:

> 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 (including by reference), those existing elements should be considered acceptable and adequate. The reviewer will generally focus the review on the extension of the existing program to the new reactor, and will 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 construction of a new reactor (or reactors) and appropriately incorporates the new reactor(s) into the existing plan.

Consistent with this guidance, the staff focused its review on the extension of the existing (Units 3 and 4) site emergency preparedness program to Units 6 and 7, and considered those elements of the existing program that are unchanged in their applicability to Units 6 and 7 as acceptable and adequate.

In COLA Part 1, the applicant incorporated by reference the AP1000 DCD. Section 13.3 of COLA Part 2 further incorporates by reference Tier 2 Section 13.3, "Emergency Planning," of the referenced DCD. COLA Part 5 provides the Plan, which consists of the basic emergency plan, three annexes, and six appendices. The basic plan follows the format of NUREG-0654, and provides detailed information regarding each of the 16 planning standards and associated evaluation criteria in NUREG-0654. The format of the staff's review of the onsite emergency plan (provided below) is patterned after these 16 planning standards, which reflect the requirements in 10 CFR 50.47(b)(1) through (b)(16). Regulations in 10 CFR Part 50,

[6] See Section 1.2.2 for a discussion on the staff's review related to verification of the scope of information to be included within a COL application that references a design certification (DC).

Appendix E, provide additional requirements that add detail and supplement the evaluation criteria associated with the planning standards. The staff's review of the various aspects of how the application proposes to satisfy 10 CFR Part 50 Appendix E is included within the associated planning standard review. The staff's review and findings apply only to the proposed Units 6 and 7, and any changes to the emergency plan for Units 3 and 4 would be addressed as a separate licensing action, in accordance with 10 CFR 50.54(q).

13.3.4.1 *Assignment of Responsibility (Organization* Control)

As reflected in NUREG-0654 Planning Standard A, "Assignment of Responsibility (Organization Control)," 10 CFR 50.47(b)(1) requires that primary responsibilities for emergency response by the nuclear facility licensee and by State and local organizations within the EPZs have been assigned, the emergency responsibilities of the various supporting organizations have been specifically established, and each principal response organization has staff to respond and to augment its initial response on a continuous basis. In addition, 10 CFR Part 50 Appendix E Section III requires that the emergency plans incorporate information regarding the emergency response roles of supporting organizations and offsite agencies, and that information shall be sufficient to ensure coordination among the supporting groups and with the licensee. Regulations in 10 CFR Part 50 Appendix E Section IV.A require a description of the local offsite services to be provided in support of the licensee's emergency organization; identification of, and a description of the assistance expected from, appropriate local, State, and Federal agencies with responsibilities for coping with emergencies, including hostile action at the site; and identification of the State and local officials responsible for planning for, ordering, and controlling appropriate protective actions, including evacuations when necessary.

In COL Plan Section A, "Assignment of Responsibility," the applicant described the primary responsibilities and organizational control of FPL, Federal, State, county, and other emergency response organizations (EROs) within the 10-mi EPZ and the 50-mi EPZ. The staff reviewed this section, as well as other relevant portions of the application, to determine whether the application conforms to the applicable guidance and complies with the pertinent regulatory requirements. The staff's primary focus was to evaluate the emergency plan against NUREG-0654 Planning Standard A, which provides the detailed evaluation criteria that the staff should consider to determine whether the emergency plan meets the applicable regulatory requirements in 10 CFR 50.47(b)(1).

COL Plan Section A.1, "Concept of Operations," describes the relationships and concept of operations for the organizations and agencies that are a part of the overall ERO, and identifies the various Federal, State, and county/local government agencies and organizations that are involved in a response to an emergency at Turkey Point. COL Plan Figure A-1 illustrates the agency response organization interrelationships in a block diagram. The National Response Framework (NRF) (73 FR 4887, January 28, 2008) outlines Federal responsibilities during incidents warranting a coordinated Federal response. Within the sphere of the NRF, the NRC provides technical assistance, and acts as a coordinating agency. Section A.1 addresses the primary Federal response for supporting an emergency at Turkey Point, and describes the support and resources for the various agencies. The Department of Homeland Security (DHS) is responsible for the overall coordination of a multi-agency Federal response to a significant radiological incident, and FEMA acts as the lead Federal agency for offsite, nontechnical concerns. Federal agencies are addressed further in COL Plan Section C, and discussed below in SER Section 13.3.4.3.

The State of Florida and Miami-Dade and Monroe Counties have emergency response plans that specify the responsibilities and functions for the major agencies, departments, and key individuals of their emergency response organizations. The State of Florida has the statutory responsibility and authority for responding to emergencies and protecting the health and safety of the public in Florida. The State of Florida Radiological Emergency Preparedness Annex (provided as COL Plan Supplemental Information 6 and 7), which supports the State of Florida Comprehensive Emergency Management Plan, addresses the ability of State and local government to respond to radiological emergencies, and defines responsibilities of State agencies. COL Plan Section A.1 describes the responsibilities of State and local agencies, in the event of a nuclear power plant emergency. The Governor has overall command authority for radiological and nonradiological aspects of a nuclear incident, and will provide for public protection through assignment of appropriate State resources and agencies.

The counties within the 10-mi EPZ include Miami-Dade County and Monroe County. Counties within the 50-mi EPZ include Miami-Dade, Monroe, Broward, and Collier Counties. Miami-Dade and Monroe Counties are responsible for plume exposure risk response, hosting of evacuees, and ingestion pathway protection. Broward and Collier Counties are responsible for ingestion pathway protective measures. The applicant included the plans for the State of Florida and Counties of Miami-Dade and Monroe as COLA supplemental information.

The onsite ERO, directed by the emergency coordinator, provides for control and operation of the plant, mitigation of the emergency condition, protection of plant personnel inside the Protected Area, and emergency support for operations, engineering, maintenance, firefighting, material acquisition, security, and first aid. The offsite ERO, directed by the emergency offsite manager, provides for offsite radiological accident assessment, protection of plant personnel outside the Protected Area, emergency support for acquisition of materials and support of personnel, and interface between Turkey Point personnel and outside organizations responsible for the protection of the public. The Emergency News Center (ENC) organization, directed by the FPL public information officer, coordinates with public information officers from other organizations to provide information to the public through the news media. (The ENC is addressed further in COL Plan Section H.3, and discussed below in SER Section 13.3.4.7.)

At Turkey Point, FPL maintains 24-hour emergency response capability. The normal on-shift complement provides the initial response to an emergency. This group is trained to handle emergency situations (e.g., initiate implementation of the emergency plan, make initial accident assessment, emergency classification, notifications, communications, and protective action recommendations (PARs)) until the augmented ERO arrives. Personnel from the unaffected unit(s) are available and respond when notified. During an emergency condition classified as an Alert, Site Area Emergency, or General Emergency, the plant's augmented ERO is notified and responds to replace the normal plant organization. (Staff augmentation is addressed further in COL Plan Section B, and discussed below in SER Section 13.3.4.2.) The emergency coordinator and recovery manager will assess the emergency situation and expand the ERO, if necessary. The augmented ERO consists of three major response sub-organizations with interrelationships, as illustrated in COL Plan Figure A-2. The recovery manager, located in the EOF, has the authority to request Federal assistance, and the responsibility for assuring continuity of resources (technical, administrative, and material) in the event of ERO activation.

COL Plan Section A.3, "Agreements in Planning Effort," states that written agreements have been developed that establish the concept of operations between the applicant and other support organizations having an emergency response role in support of the COL Plan. These agreements identify the services to be provided, the mutually accepted criteria for

implementation, and the arrangements for exchange of information. COL Plan Appendix 2 provides a list of the 14 letters of agreement, and copies of the letters are included in COLA Supplemental Information 4. In addition, COLA Supplemental Information 3 includes copies of State and county certification letters, which address commitments to continue to support emergency response for the proposed Units 6 and 7 (pursuant to 10 CFR 52.79(a)(22)).

In its Interim Finding Report for Reasonable Assurance, FEMA found that the offsite emergency plans are adequate for this planning standard and associated evaluation criteria in NUREG-0654.

In view of the above, the staff finds that the applicant has adequately assigned primary responsibilities for emergency response, and has the staff to respond to and to augment its initial response on a continuous basis. The applicant is capable of providing 24-hour-per-day emergency response and staffing of communications links, including continuous (24-hour) operations for a protracted period. In addition, the applicant has identified the appropriate organizations that are intended to be part of the overall response organization, and has established the emergency responsibilities of the various supporting organizations, including providing adequate written agreements. The applicant has specified the concept of operations and its relationship to the total effort, illustrated the interrelationships in a block diagram, and has identified the individuals in charge of the emergency response and for ensuring continuity of resources.

In addition, the staff finds that the applicant has incorporated information about the emergency response roles of supporting organizations and offsite agencies, and that information is sufficient to ensure coordination among the supporting groups and with the licensee. Furthermore, the applicant has described the local offsite services to be provided in support of the licensee's emergency organization, and has identified the assistance expected from appropriate local, State, and Federal agencies, including State and local officials responsible for planning for, ordering, and controlling appropriate protective actions.

Conclusion

The staff concludes that the information provided in the COLA is consistent with the guidelines in NUREG-0654, Planning Standard A. Therefore, the staff finds the information acceptable and meets the relevant requirements of 10 CFR 50.47(b)(1) and 10 CFR Part 50, Appendix E, Sections III and IV.A, insofar as the information describes the essential elements of advanced planning and the provisions made to cope with emergency situations.

13.3.4.2 *Onsite Emergency Organization*

As reflected in NUREG-0654 Planning Standard B, "Onsite Emergency Organization," 10 CFR 50.47(b)(2) requires that on-shift facility licensee responsibilities for emergency response are unambiguously defined, adequate staffing to provide initial facility accident response in key functional areas is maintained at all times, timely augmentation of response capabilities is available, and interfaces among various onsite response activities and offsite support and response activities are specified. In addition,10 CFR Part 50 Appendix E Section IV.A requires a description of the organization for coping with radiological emergencies, including definition of authorities, responsibilities, and duties of individuals assigned to the licensee's emergency organization, and the means for notification of such individuals in the event of an emergency. This shall include a description of the normal plant operating organization, onsite emergency response organization, headquarters personnel who will

augment the onsite emergency organization, and local offsite services to be provided in support of the licensee's emergency organization. The emergency plan shall identify persons within the licensee organization who will be responsible for making offsite dose projections, and other employees with special qualifications for coping with emergency conditions that may arise. Other persons with special qualifications, who are not licensee employees and who may be called upon for assistance, shall also be identified, including a description of the special qualifications. Regulations in 10 CFR Part 50, Appendix E, Section IV.A.9, require a detailed analysis demonstrating that on-shift personnel assigned emergency plan implementation functions are not assigned responsibilities that would prevent the timely performance of their assigned functions, as specified in the emergency plan.

In COL Plan Section B, "Emergency Response Organization," the applicant described the ERO, its key positions and associated responsibilities, including outlining the staffing requirements that provide initial emergency response actions and provisions for timely augmentation of on-shift personnel when required. The staff reviewed this section, as well as other relevant portions of the application, to determine whether the application conforms to the applicable guidance and complies with the pertinent regulatory requirements. The staff's primary focus was to evaluate the emergency plan against NUREG-0654, Planning Standard B, "Onsite Emergency Organization." Planning Standard B provides the detailed evaluation criteria that the staff should consider to determine whether the emergency plan meets the applicable regulatory requirements in 10 CFR 50.47(b)(2).

The normal plant personnel complement is established with the Site Vice President having overall authority for plant operations. The Site Vice President directs the site organization in the management of the various departments, while the shift manager retains the responsibility for actual operation of plant systems. The plant has personnel on-shift at all times that can provide an initial response to an emergency event. In Part 5 of the COLA, Annex 2 and Annex 3 , Table 2-1, "Turkey Point Emergency Response Organization On-Shift Staffing," and Table B-1a, "Shift Emergency Response Organization" outline the unit on-shift ERO and its relation to the normal staff complement. On-shift staffing will be augmented with additional ERO personnel at an Alert (and higher) emergency classification or earlier, as deemed necessary.

Section 2.3, "Shift Emergency Response Positional Responsibilities," states that the affected unit's on-shift personnel may be augmented by personnel from the other site units, and that these additional personnel will provide the needed resources to enhance the response to the event until the on-call ERO personnel respond and are ready to activate the emergency response facilities. Those individuals identified to augment the on-shift personnel within 60 minutes are part of the on-call ERO. Personnel from corporate management, administrative and technical support personnel may be used at the EOF and ENC to augment plant staff and possibly interface with governmental authorities.

COL Plan Section B.1, "On-Shift Emergency Response Organization Assignments," includes a list of on-shift personnel with emergency responsibilities. The shift manager (from the affected unit) has the responsibility and authority to declare an emergency, and then becomes the emergency coordinator. In that role, the emergency coordinator will initiate the appropriate immediate actions in accordance with written procedure, mitigate the consequences of the emergency, and activate the ERO and notify offsite agencies (as appropriate). The line of succession in the Control Room for the emergency coordinator is the shift manager, unit supervisor, and then any other member of the plant staff with an active SRO license. In the event there is a simultaneous emergency condition affecting multiple units, or the site is in an

emergency because of natural phenomena or a security event, the Unit 3 shift manager will typically be designated as the emergency coordinator.

The shift manager, acting as emergency coordinator is responsible for direction and control of the emergency until relieved by another qualified emergency coordinator in the TSC. Upon relieving the shift manager, the emergency coordinator (TSC) is responsible for continued assessment of the severity of the emergency, and for coordinating and directing the combined activities of personnel in the Control Room, TSC, OSC, elsewhere on owner-controlled property and field team monitoring activities. When the EOF is declared operational, overall direction and control of the emergency response is transferred to the recovery manager in the EOF. The emergency coordinator (TSC) maintains responsibility for onsite direction and control for the duration of the event. Prior to transfer of command and control and emergency response functions to the TSC and EOF, various listed conditions must be met.

The emergency coordinator has the responsibility and authority to initiate emergency actions necessary to protect the life, health, and safety of both the plant staff and affected public. The responsibilities include classifying the emergency; authorizing notifications to the State, counties, and the NRC; issuing PARs; authorizing emergency exposure limits; authorizing the distribution and use of potassium iodide (KI); mobilizing the ERO and initiating activation of emergency response facilities; directing onsite emergency response activities; and implementing severe accident management guidelines. Emergency coordinator responsibilities that may not be delegated to other elements of the emergency organization include event classification, notification of offsite authorities, and providing Protective actions recommendations for the general public. Upon activation of the EOF, the responsibilities of notification of offsite authorities and issuance of PARs are transferred to the recovery manager. COLA, Part 5, Appendix 3, “Procedure Cross-Reference to the Emergency Plan,” lists an emergency plan implementing procedure (EPIP) titled “Protective Action Recommendations.”

In view of the foregoing, the staff finds that the applicant has adequately designated an individual as the emergency coordinator who has the authority and responsibility to initiate emergency actions, including recommending protective actions to the authorities responsible for implementing offsite emergency measures. The staff also finds that the applicant has clearly specified which responsibilities may not be delegated to other elements of the emergency organization, and has identified an adequate line of succession for the emergency coordinator position.

The overall ERO is made up of three sub-organizations (i.e., onsite ERO, offsite ERO, and ENC), and is illustrated in COL Plan Figures B-1a through B-1d. COL Plan Section B.5, “Emergency Response Organization Positional Responsibilities,” identifies the specific emergency response positions (by title), including the major tasks (responsibilities) to be performed for each position. Table 2-1 and Table B-1a (located in each unit annex) and COL Plan Table B-1b, “Staffing Requirements for the Turkey Point Plant Emergency Response Organization,” list key ERO positions and the supporting positions assigned to interface with Federal, State, and county authorities. Table 2-1 and Table B-1a outline ERO positions required to meet minimum staffing and describe full augmentation of the on-shift complement at an Alert (or higher) classification, including major tasks assigned to each position. The full augmentation staffing levels are used as a planning basis to cover a wide range of possible events. For extended events (i.e., those that are expected to continue for more than 24 hours), actual staffing will be established by the emergency coordinator based on the event and personnel availability. Reduced staffing will only occur after discussion with the recovery manager concerning the impact on plant operations and emergency response.

COL Plan Section A.1 describes the relationships and the concept of operations for the organizations and agencies that are a part of the overall emergency response organization, and the interfaces are shown in COL Plan Figure A-1, "Agency Response Organization Interrelationships." COL Plan Figure A-2, "Turkey Point Plant Augmented Emergency Response Organization Interrelationships," illustrates the interface between the OSC, TSC, and Control Room with the EOF, field monitoring teams, and the ENC. Collectively, the figures in COL Plan Sections A and B illustrate (in block diagrams) the interfaces between and among the onsite functional areas of emergency response, licensee headquarters support, local services support, and State and local government response organizations.

The staff reviewed Tables 2-1, "Turkey Point Unit Emergency Response Organization On-Shift Staffing," B-1a, "Unit Shift Emergency Response Organization," and B-1b, "Staff Requirements for the Turkey Point Plant Emergency Response Organization," which are based on the guidance in NUREG-0654, Table B-1, "Minimum Staffing Requirements for NRC Licensees for Nuclear Power Plant Emergencies," and finds that the required minimum on-shift and augmentation staffing in support of the new plants is acceptable because it is consistent with NUREG-0654, Table B-1.

Fukushima Dai-ichi—NTTF Recommendation 9.3

On March 12, 2012, the NRC requested additional information from all power reactor licensees and holders of construction permits, associated with the NRC Near-Term Task Force (NTTF) review of the accident at the Fukushima Dai-ichi nuclear facility (ADAMS Accession No. ML12053A340). In Recommendation 9.3, the NTTF addressed staffing and communications provisions for enhancing emergency preparedness. On January 23, 2013, the NRC issued a follow-up letter (ADAMS Accession No. ML13010A162),[7] which identified eight generic technical issues that need to be addressed as part of the Recommendation 9.3 communications capability assessment.[8]

With regard to staffing, the accident at Fukushima highlighted the need to determine and implement the required staff to fill all necessary positions responding to a multi-unit event. Specifically, the March 12, 2012, letter requests that all power reactor licensees and holders of construction permits (in active or deferred status) assess their current staffing levels and determine the appropriate staff to fill all necessary positions for responding to a multi-unit event during a beyond design basis natural event, and determine if any enhancements are appropriate. Single unit sites should provide the requested information, as it pertains to an extended loss of all ac (alternating current) power and impeded access to the site. Emergency communications are addressed below in License Condition (13-4) and SER Section 13.3.4.6. (See also, STD COL 13.3-2 in SER Section 13.3.4.18, with regard to EOF staffing and communications.)

In RAI 6434, Question 01.05-4, May 1, 2012 (ADAMS Accession No. ML12122A973), the staff requested additional information from the applicant, regarding how FPL plans to address the various NRC-approved actions related to the Fukushima Dai-ichi accident in the Turkey Point

[7] See also, NRC document package at ADAMS Accession No. ML13016A111.

[8] For Turkey Point, Units 3 and 4, FPL responded to NRC's March 12, 2012, letter on (1) May 10, 2012, FPL Letter No. L-2012-208 (ADAMS Accession No. ML12144A158), and (2) October 25, 2012, FPL Letter No. L-2012-388 (ADAMS Accession No. ML12300A425). FPL responded to NRC's January 23, 2013, letter on February 15, 2013, FPL Letter No. L-2013-060 (ADAMS Accession No. ML13064A359).

Units 6 and 7 COLA. In a June 29, 2012, response to RAI 6434, Question 01.05-4 (ADAMS Accession No. ML121850685), the applicant proposed License Condition 12.C, "Fukushima Actions—Emergency Planning Actions," which addresses both the staffing and communications areas addressed in NTTF Recommendation 9.3. FPL added this license condition to Part 10 of COLA Revision 4.

The staff reviewed proposed License Condition 12.C, and, with the exception of the timeframes for completion and submission of the staffing and communications capability assessments, finds that it is acceptable because it is consistent with NTTF Recommendation 9.3 and reflects the use of NEI technical report NEI 12-01, which the NRC has endorsed as an acceptable method for licensees to employ when addressing NTTF Recommendation 9.3.[9] However, the staff identified a possible (optional) change in License Condition 12.C that the applicant could make, with regard to the 2-year timeframe for revising the emergency plan to reflect the staffing assessment results. Specifically, the timeframe could be changed from 2 years to 180 days, in order to be consistent with the 180-day timeframe for implementation of corrective actions identified in the communications capability assessment, including revisions to the emergency plan (which is also included in License Condition 12.C).

On September 24, 2014, the staff discussed making this license condition change with the applicant. Subsequently, the applicant informed the staff that this optional change would not be made, and the proposed License Condition 12.C retained the 2-year timeframe in COLA Revision 6. Despite the applicant's preference to retain the 2-year timeframe, the staff believes that the change from 2 years to 180 days in its proposed License Condition (13-3) (below) is necessary and appropriate (see 10 CFR 52.97(c)) for the following reasons:

(1) There is no regulatory basis for requiring a 2-year timeframe.

(2) More time will be allowed for the licensee to revise the emergency plan, thus providing additional flexibility.

(3) Irrespective of a 180-day timeframe, the licensee may still revise the emergency plan 2 years prior to initial fuel load, if so desired.

(4) The change will provide consistency with the 180-day emergency plan changes required as a result of corrective actions identified in the communications capability assessment (also included in License Condition 12.C).

(5) The change will support the staff's objective of consistency for this NTTF Recommendation 9.3-related license condition, since it is a common license condition for all other (prior and ongoing) COLA reviews.

The staff also proposes an 18-month timeframe for completion of the staffing and communications capability assessments, which is based on the latest date set forth in the schedule for completing the inspections, tests, and analyses in the ITAAC submitted in

[9] See (1) NRC May 15, 2012, letter, "U.S. Nuclear Regulatory Commission Review of NEI 12-01, 'Guideline for Assessing Beyond Design Basis Accident Response Staffing and Communications Capabilities,' Revision 0, dated May 2012" (ADAMS Accession No. ML12131A043), (2) NEI May 3, 2012, letter, "Transmittal of NEI 12-01, 'Guideline for Assessing Beyond Design Basis Accident Response Staffing and Communications Capabilities,' Revision 0, dated May 2012" (ADAMS Accession No. ML12125A411), and (3) NEI Report No. 12-01, Revision 0, "Guideline for Assessing Beyond Design Basis Accident Response Staffing and Communications Capabilities," May 2012 (ADAMS Accession No. ML12125A412).

accordance with 10 CFR 52.99(a). In addition, the staff proposes a common 180-day timeframe for submission of the assessments to the NRC, which is based on the date scheduled for initial fuel load set forth in the notification submitted in accordance with 10 CFR 52.103(a). Therefore, with these staff-proposed license condition changes, the staff considers RAI 6434, Question 01.05-4, resolved, with regard to emergency planning.

Consistent with the applicant's proposed License Condition 12.C, and staff-proposed license condition changes (discussed above), the staff identified License Condition (13-3) and License Condition (13-4), which address enhanced staffing and communications capabilities, respectively, and include the staff's proposed timeframes for completion of the assessments and their submission to the NRC. License Condition (13-4) is addressed further in SER Section 13.3.4.6, with regard to communications.

License Condition (13-3)

> No later than eighteen (18) months before the latest date set forth in the schedule submitted in accordance with 10 CFR 52.99(a) for completing the inspections, tests, and analyses in the ITAAC, Florida Power & Light Company shall have performed an assessment of the on-site and augmented staffing capability for response to a multi-unit event. The staffing assessment shall be performed in accordance with NEI 12-01, "Guideline for Assessing Beyond Design Basis Accident Response Staffing and Communications Capabilities," Revision 0.
>
> No later than one hundred eighty (180) days before the date scheduled for initial fuel load, as set forth in the notification submitted in accordance with 10 CFR 52.103(a), Florida Power & Light Company shall revise the Emergency Plan to include the following:
>
> (a) Incorporation of corrective actions identified in the staffing assessment required by this license condition; and
>
> (b) Identification of how the augmented staff will be notified, given degraded communications capabilities.

License Condition (13-4)

> No later than eighteen (18) months before the latest date set forth in the schedule submitted in accordance with 10 CFR 52.99(a) for completing the inspections, tests, and analyses in the ITAAC, Florida Power & Light Company shall have performed an assessment of on-site and off-site communications systems and equipment relied upon during an emergency event to ensure communications capabilities can be maintained during an extended loss of alternating current power. The communications capability assessment shall be performed in accordance with NEI 12-01, "Guideline for Assessing Beyond Design Basis Accident Response Staffing and Communications Capabilities," Revision 0.
>
> No later than one hundred eighty (180) days before the date scheduled for initial fuel load set forth in the notification submitted in accordance with 10 CFR 52.103(a), Florida Power & Light Company shall have completed

implementation of corrective actions identified in the communications capability assessment, including revisions to the Emergency Plan.

Enhancements to Emergency Preparedness Regulations

In addition to appropriate staffing levels associated with multi-unit events (discussed above), on November 23, 2011, the NRC published a Final Rule, titled "Enhancements to Emergency Preparedness Regulations" (76 FR 72560) (hereinafter referred to as "Final Rule"), which included a new requirement in 10 CFR Part 50, Appendix E, Section IV.A, associated with on-shift ERO personnel. Specifically, Section IV.A.9 requires—by December 24, 2012, for nuclear power reactor licensees—a detailed analysis demonstrating that on-shift personnel assigned emergency plan implementation functions are not assigned responsibilities that would prevent the timely performance of their assigned functions, as specified in the emergency plan.

In Enclosure 1, "Summary of COL Application Revision 4 Changes," of its December 14, 2012, submittal letter for COLA Revision 4 (ADAMS Accession No. ML123660081), FPL stated that the updates to COLA Part 5 (Emergency Plan) include information and changes that address the recent NRC emergency planning rule change (i.e., Final Rule). In COL Plan Section B, the applicant discussed on-shift staffing, including augmented staffing with additional ERO personnel (at an Alert or higher classification, or earlier if deemed necessary). The applicant did not, however, provide a detailed on-shift staffing analysis that addresses the new Final Rule requirements. COL Plan Section B does state that shift personnel have the capability at all times to perform detection, mitigation, classification, and notification functions required in the early phases of an emergency. In addition, shift augmentation and further ERO involvement will be determined by the extent and magnitude of the event. Furthermore, when plant conditions warrant entry into the Severe Accident Management Guidelines (SAMG), the on-shift crew assumes the duties and responsibilities for mitigating actions in accordance with the SAMG.

As part of the issuance of the Final Rule, NRC issued associated guidance in Interim Staff Guidance NSIR/DPR-ISG-01. In Section IV.C, "On-Shift Staffing Analysis," of NSIR/DPR-ISG-01, NRC endorsed NEI Technical Report NEI 10-05, "Assessment of On-Shift Emergency Response Organization Staffing and Capabilities," Revision 0, dated June 2011 (ADAMS Accession No. ML111751698)—stating in part that NEI 10-05 establishes a standard methodology for a licensee to perform the required staffing analysis (in 10 CFR Part 50, Appendix E, Section IV.A.9), and that the NRC has reviewed NEI 10-05 and found it to be an acceptable methodology for this purpose.

In COLA Part 10, the applicant proposed License Condition 11.B, which addresses the requirements in 10 CFR Part 50, Appendix E, Section IV.A.9 for a detailed on-shift staffing analysis associated with the emergency plan. The staff reviewed License Condition 11.B, and, with the exception of the timeframe for submission of the on-shift staffing analysis and changes to the emergency plan, finds that it is acceptable because it is consistent with the Final Rule and NSIR/DPR-ISG-01.

The staff proposes a similar timeframe for submission of the on-shift staffing analysis to the NRC, which is based on the date scheduled for initial fuel load set forth in the notification submitted in accordance with 10 CFR 52.103(a). Therefore, consistent with the applicant's proposed License Condition 11.B, the staff identified the following License Condition (13-5) , which addresses an analysis of on-shift personnel assigned emergency plan implementation functions, and includes the staff's proposed timeframe for submission of the on-shift staffing analysis to the NRC. This license condition is written to be consistent with License Condition

(13-3) (above), including an 18-month timeframe for completion of the staffing assessment for multi-unit events.[10]

License Condition (13-5)

> No later than eighteen (18) months before the latest date set forth in the schedule submitted in accordance with 10 CFR 52.99(a) for completing the inspections, tests, and analyses in the ITAAC, Florida Power & Light Company shall have performed a detailed staffing analysis, in accordance with NEI 10-05, "Assessment of On-Shift Emergency Response Organization Staffing and Capabilities," Revision 0.
>
> No later than one hundred eighty (180) days before the date scheduled for initial fuel load set forth in the notification submitted in accordance with 10 CFR 52.103(a), Florida Power & Light Company shall have revised the Emergency Plan to incorporate any changes identified in the staffing analysis that are needed to bring staffing to the required levels.

COL Plan Section B.7, "Industry/Private Support Organizations," states that Turkey Point retains contractors to provide supporting services, and uses a contract/purchase order in lieu of an agreement letter. Agency, contractor, and private organizations who may be requested to provide technical assistance to, and augmentation of the emergency organization include the Institute of Nuclear Power Operations (INPO), Electric Power Research Institute (EPRI), NEI, American Nuclear Insurers (ANI), Department of Energy (DOE) Radiation Emergency Assistance Center/Training Site (REAC/TS), Bechtel Power Corporation, URS Washington Division, and AREVA. (REAC/TS is addressed in COL Plan Section L.3, "Medical Service Facilities," and discussed below in SER Section 13.3.4.12.)

Agreements are maintained with outside support agencies that provide assistance when called on during an emergency or during the recovery phase, which identify emergency measures to be provided, the mutually accepted criteria for implementation, and the arrangements for exchange of information. These support agencies (listed in Appendix 2) provide services of law enforcement, fire protection, ambulance services, and medical and hospital support services. (Support groups providing transportation and treatment of injured plant personnel are described in COL Plan Section L, and addressed below in SER Section 13.3.4.12.) COLA Supplemental Information 4 includes copies of the signed letters of agreement with agencies and organizations, which describe the scope of services to be provided, types of resources available, and points of contact.

In view of the above, and subject to License Condition (13-3) and License Condition (13-5), the staff finds that the applicant has unambiguously defined its responsibilities for emergency response, has adequate staffing to provide and maintain at all times initial facility accident response in key functional areas, and is capable of timely augmentation of the response capabilities. In addition, the applicant has adequately specified the interfaces among various onsite and offsite support and response activities. In addition, the applicant has described the organization for coping with radiological emergencies, including the authorities, responsibilities, and duties of individuals assigned to the licensee's emergency organization, and the means for

[10] FPL Letter No. L-2012-208 (May 10, 2012) discusses the approach taken by FPL for Turkey Point, Units 3 and 4 to address staffing associated with the NTTF recommendations and emergency planning program enhancements in the NRC's November 23, 2011, Final Rule.

their notification in the event of an emergency. The applicant has also described the normal plant operating organization, the onsite ERO, and headquarters and local offsite personnel and services that will augment and support the onsite organization. Furthermore, licensee employees who are responsible for making offsite dose projections, and licensee and other persons with special qualifications for coping with emergency conditions, are also identified. A detailed analysis of on-shift staffing personnel responsibilities is addressed in License Condition (13-5). Communications capabilities addressed in NTTF Recommendation 9.3, associated with License Condition (13-4), are discussed further in SER Section 13.3.4.6.

Conclusion

Subject to License Condition (13-3) and License Condition (13-5), the staff concludes that the information provided in the COLA is consistent with the guidelines in NUREG-0654, Planning Standard B. Therefore, the staff finds the information acceptable and meets the relevant requirements of 10 CFR 50.47(b)(2) and 10 CFR Part 50, Appendix E, Section IV.A, insofar as the information describes the essential elements of advanced planning and the provisions made to cope with emergency situations.

13.3.4.3 *Emergency Response Support and Resources*

As reflected in NUREG-0654, Planning Standard C, "Emergency Response Support and Resources," 10 CFR 50.47(b)(3) requires that arrangements for requesting and effectively using assistance resources have been made, arrangements to accommodate State and local staff at the licensee EOF have been made, and other organizations capable of augmenting the planned response have been identified. In addition, 10 CFR Part 50, Appendix E, Section III requires that the emergency plans incorporate information about the emergency response roles of supporting organizations and offsite agencies, and that information shall be sufficient to ensure coordination among the supporting groups and with the licensee. Regulations in 10 CFR Part 50, Appendix E, Section IV.A.7, require identification of, and a description of the assistance expected from, appropriate local, State, and Federal agencies with responsibilities for coping with emergencies, including hostile action at the site.

In COL Plan Section C, "Emergency Response Support and Resources," the applicant described the provisions for requesting and effectively using support resources and for accommodating offsite officials at the emergency response facilities. The staff reviewed this section, as well as other relevant portions of the application, to determine whether the application conforms to the applicable guidance and complies with the pertinent regulatory requirements. The staff's primary focus was to evaluate the emergency plan against NUREG-0654, Planning Standard C, "Emergency Response Support and Resources." Planning Standard C provides the detailed evaluation criteria that the staff should consider to determine whether the emergency plan meets the applicable regulatory requirements in 10 CFR 50.47(b)(3).

COL Plan Section C.1, "Federal Response Support and Resources," states that during an emergency, Federal agencies provide assistance through the National Response Framework. The NRC is the lead Federal agency that provides direct assistance to Turkey Point, with other Federal agencies—such as the Department of Homeland Security (DHS) and Department of Energy (DOE)—providing assistance to the State of Florida through implementation of the NRF. COL Plan Sections A and B identify the specific individuals by title who are authorized to request Federal assistance. COL Plan Section A.4 states that the recovery manager in the EOF has the authority to request Federal assistance, and COL Plan Section B.4 states that the

emergency coordinator has the responsibility and authority to initiate emergency actions necessary to protect the life, health, and safety of plant staff and the affected public.

COL Plan Section A identifies Federal agencies that may provide assistance to Turkey Point. NRC personnel are expected to arrive at the site within 6 hours after declaration of a Site Area Emergency or General Emergency, and FEMA may send a representative for near-site coordination. COL Plan Section A describes the various supporting organizations, and includes the roles of the NRC, DHS, DOE, Environmental Protection Agency (EPA), Federal Bureau of Investigation, National Weather Service (NWS), and U.S. Coast Guard. FPL has reserved space for Federal and State agency personnel in the emergency response facilities, which have equipment and communications capability necessary for a continuous high level of response, interaction, and communication among key personnel during emergency conditions. The NRC, FEMA, State of Florida, and Miami-Dade and Monroe Counties may dispatch representatives to the EOF, where accommodations have been provided. At the Alert level and above, Turkey Point personnel are assigned as liaisons to the State of Florida and Miami-Dade and Monroe County emergency operations centers (EOCs) when they are activated. These representatives act as technical liaisons to interpret EALs, explain accident conditions, and provide technical information regarding the affected unit's actions by the plant's ERO.

COL Plan Section C.3, "Radiological Laboratories," states that radiation monitoring and analysis is provided by an onsite laboratory, which is the central point of receipt and analysis for all onsite samples, and includes equipment for chemical and radiological analyses. Additional laboratory facilities that can provide support include the Radiation Protection counting room facilities, St. Lucie Plant radiological facilities, and the State of Florida Mobile Emergency Radiological Laboratory, which can be in position near the site within approximately 6 to 8 hours of notification. A State of Florida Department of Health (DOH) Bureau of Radiation Control (BRC) representative dispatched to the EOF will coordinate all State offsite field monitoring data and sample media.

Through INPO, other utilities with operating nuclear facilities are available to provide certain types of assistance and support, including technicians, engineering, design, consultation, whole body counting, and dosimetry evaluation and equipment. Additional facilities, organizations, and individuals—listed in the Emergency Response Directory (see COL Plan Appendix 3)—are available and may be used in support of emergency response. In addition, American Nuclear Insurers provides insurance to cover FPL's legal liability up to the limits imposed by the Price-Anderson Act, for bodily injury or property damage caused by the nuclear energy hazard resulting from an incident at the plant. COL Plan Section B.7 describes assistance available through INPO, EPRI, NEI, ANI, DOE, Bechtel Power Corporation, URS Washington Division, and AREVA. Written agreement (listed in COL Plan Appendix 2) that describe the level of assistance and resources provided to FPL by external sources are included in COLA Supplemental Information 4.

In its Interim Finding Report for Reasonable Assurance, FEMA found that the offsite emergency plans are adequate for this planning standard and associated evaluation criteria in NUREG-0654.

In view of the above, the staff finds that the applicant has made arrangements for requesting and effectively using assistance resources, including arrangements to accommodate State and local staff at the EOF, and has identified other organizations capable of augmenting the planned response. In addition, the applicant has made adequate provisions for incorporating the Federal response capability into its operation plan, and has identified radiological laboratories and other

organizations that can be relied on in an emergency to provide assistance. The staff also finds that the emergency plans incorporate information about the emergency response roles of supporting organizations and offsite agencies, and that the information is sufficient to ensure coordination among the supporting groups and the licensee. Finally, the applicant has identified appropriate State, local, and Federal agencies with responsibilities for coping with emergencies, including the expected assistance from each.

Conclusion

The staff concludes that the information provided in the COLA is consistent with the guidelines in NUREG-0654, Planning Standard C. Therefore, the staff finds the information acceptable and meets the relevant requirements of 10 CFR 50.47(b)(3) and 10 CFR Part 50, Appendix E, Sections III and IV.A.7, insofar as the information describes the essential elements of advanced planning and the provisions made to cope with emergency situations.

13.3.4.4 *Emergency Classification System*

As reflected in NUREG-0654, Planning Standard D, "Emergency Classification System," 10 CFR 50.47(b)(4) requires that a standard emergency classification and action level scheme, the bases of which include facility system and effluent parameters, is in use by the nuclear facility licensee, and that State and local response plans call for reliance on information provided by facility licensees for determinations of minimum initial offsite response measures. In addition, 10 CFR Part 50, Appendix E, Section IV.B, requires a description of the means to be used for determining the magnitude, and for continually assessing the impact, of the release of radioactive materials, including emergency action levels (EALs) that are to be used as criteria for determining the need for offsite agency notifications and participation, and when and what types of protective measures should be considered. The EALs must include hostile actions that may adversely affect the nuclear power plant. The initial EALs shall be discussed and agreed on by the applicant or licensee and State and local governmental authorities, and approved by the NRC. Thereafter, EALs shall be reviewed with State and local governmental authorities on an annual basis. Regulations in 10 CFR Part 50, Appendix E, Section IV.C, require a description of EALs and emergency conditions that involve alerting or activating the total emergency organization, including communication steps to be taken under each emergency class. The emergency classes defined shall include (1) notification of unusual event, (2) alert, (3) site area emergency, and (4) general emergency. Regulations in 10 CFR Part 50, Appendix E, Section IV.C.2, require the capability to assess, classify, and declare an emergency condition within 15 minutes after the availability of indications to plant operators that an EAL has been exceeded, and to promptly declare the emergency conditions as soon as possible following identification of the appropriate emergency classification level.

In COL Plan Section D, "Emergency Classification System," the applicant described the classification and EAL scheme used to determine the minimum response to an abnormal event at the plant. The staff reviewed this section, as well as other relevant portions of the application, to determine whether the application conforms to the applicable guidance and complies with the pertinent regulatory requirements. The staff's primary focus was to evaluate the emergency plan against NUREG-0654, Planning Standard D, "Emergency Classification System." Planning Standard D provides detailed evaluation criteria that the staff should consider to determine whether the emergency plan meets the applicable regulatory requirements in 10 CFR 50.47(b)(4).

The classification and EAL scheme is based on plant systems, effluent parameters, and operating procedures for each unit. The emergency plan provides for classification of emergencies into four categories or conditions, covering the postulated spectrum of emergency situations. COL Plan Appendix 3 lists an EPIP titled "Emergency Classification." ITAAC 9.1 addresses the licensee's submission to the NRC of detailed EPIPs for the onsite emergency plan no less than 180 days before fuel load. Submission of EPIPs is also addressed in STD SUP 13.3-1, and discussed below in SER Section 13.3.4.19. In addition, the adequacy of the procedures will be demonstrated through a review of their use during an exercise pursuant to ITAAC 8.1.1 and ITAAC 8.1.2.

Each emergency classification is characterized by EALs (or event initiating conditions) and addresses emergencies of increasing severity, including security threats to facility protection or a security event that results from intentional malicious dedicated efforts of hostile action. Security-based emergency classification levels and EALs are also addressed in NRC Bulletin 2005-02 (BL 2005-02), "Emergency Preparedness and Response Actions for Security-Based Events," July 18, 2005 (ADAMS Accession No. ML051740058). (See also, SER Section 13.3.4.10, which addresses other areas of concern in BL 2005-02, and the protective actions that the applicant would take in response to a hostile action event.)

An initiating condition is one of a predetermined subset of unit conditions where either the potential exists for a radiological emergency, or such an emergency has occurred. An emergency is classified after assessing abnormal plant conditions and comparing them to EAL threshold values for the appropriate initiating condition. EAL matrix tables, organized by recognition categories, are used to facilitate the comparison. ITAAC 1.1.1 and ITAAC 1.1.2 address the ability of the main control room, TSC, and EOF to retrieve and display the facility system and effluent parameters specified in the emergency classification and EAL technical basis document.

In RAI 5681, Question 13.03-6, August 15, 2011 (ADAMS Accession No. ML11227A063), the staff requested additional information from the applicant, regarding two staff-identified options associated with submission of an EAL scheme in support of the COLA for Units 6 and 7. The staff asked the applicant to identify its preferred option and to provide the required EAL information in support of this option. Option 1 was the submission of an entire EAL scheme, which includes all site-specific information. Option 2 had four parts No. ML092030210), to develop the remainder of the EAL scheme, (critical elements) that address (1) the submission of an overview of the EAL scheme, (2) use of NEI technical report NEI 07-01, , (3) the proposal of a license condition that addresses EAL completion and submission to the NRC, and (4) how the EALs are maintained and controlled.

In a September 14, 2011, response to RAI 5681, Question 13.03-6 (ADAMS Accession No. ML11259A053), the applicant committed to Option 2, addressed the associated four critical elements, and proposed associated conforming revisions to COLA Part 5 and Part 10. The applicant stated that the remainder of the EAL scheme will be developed using NEI 07-01 and proposed a license condition, which addresses completion of plant-specific EALs and submission to the NRC. In addition, the applicant proposed to maintain the EALs in a document that is controlled by the 10 CFR 50.54(q) change process (e.g., in the emergency plan or EPIPs). The applicant's response to Option 2 is reflected in Attachment 1, "Emergency Action Levels," to COL Plan Annex 2 and Annex 3. In addition, in COLA Part 10, the applicant proposed License Condition 11.A, which addresses the submission of EALs in accordance with NEI 07-01. Furthermore, in COL Plan Section D.1, "Emergency Classification System," the applicant provided an overview of the EAL scheme, including a definition of the four emergency

classification levels (i.e., Unusual Event, Alert, Site Area Emergency, and General Emergency) and a general list of licensee actions for each level. Required actions for each classification include 15-minute notification of the State and counties, and PARs (if appropriate).

The staff reviewed the applicant's response to RAI 5681, Question 13.03-6, including COLA revisions and proposed License Condition 11.A, and finds that it is acceptable because it adequately addresses the four critical elements of Option 2 (identified above). Therefore, the staff considers RAI 5681, Question 13.03-6, resolved. In addition, the staff finds that proposed License Condition 11.A is acceptable, with the exception of the timeframe for submission of the EALs, because it uses NEI 07-01, Revision 0, to develop the remainder of the EAL scheme. The staff proposes a similar timeframe for submission of the EALs to the NRC, which is based on the date scheduled for initial fuel load set forth in the notification submitted in accordance with 10 CFR 52.103(a). Therefore, consistent with the applicant's proposed License Condition 11.A, the staff identified the following License Condition (13-6), which includes the staff's proposed timeframe for submission of the EALs to the NRC.

License Condition (13-6)

> No later than one hundred eighty (180) days before the date scheduled for initial fuel load set forth in the notification submitted in accordance with 10 CFR 52.103(a), Florida Power & Light Company shall submit to the Director of NRO, or the Director's designee, in writing, a fully developed set of plant-specific emergency action levels (EALs), in accordance with NEI 07-01, "Methodology for Development of Emergency Action Levels—Advanced Passive Light Water Reactors," Revision 0, with no deviations. The EALs shall have been discussed and agreed upon with State and local officials.

In COL Plan Section D, the applicant also stated that the initial response of Federal, State, and county agencies depends on information provided by the ERO, and that emergency preparedness staff works closely with the State of Florida and county agencies to ensure consistency in classification schemes and procedural interfaces. In addition, the content of the EALs is reviewed with the State and county authorities on an annual basis, and the State and counties are informed regarding any EAL changes that significantly impact the initiating conditions or technical basis. In its Interim Finding Report for Reasonable Assurance, FEMA found that the offsite emergency plans are adequate for this planning standard and associated evaluation criteria in NUREG-0654.

In view of the above, and subject to License Condition (13-6), the staff finds that the applicant has established a standard emergency classification and action level scheme, the bases of which include facility system and effluent parameters, which includes the four emergency classes identified above. The applicant has described EALs and emergency conditions that involve ERO activation, including steps to be taken under each emergency class. The applicant also has described the means to determine the magnitude of, and for continually assessing the impact of, the release of radioactive materials, and EALs (including hostile actions) that are used to determine the need for offsite notifications and protective measures. In addition, the applicant has the capability to assess, classify, and declare an emergency condition within 15 minutes after the availability of indications to plant operators that an EAL has been exceeded, and to promptly declare the emergency condition.

In addition, the State and local response plans call for reliance on information provided by the applicant for determination of minimum initial offsite response measures. Under the license

condition identified above, the initial EALs will be discussed and agreed upon with State and local officials, and the fully developed EALs will be submitted to the NRC for confirmation no later than 180 days prior to initial fuel load. Thereafter, the EALs will be reviewed with State and local governmental authorities on an annual basis.

Conclusion

Subject to License Condition (13-6), the staff concludes that the information provided in the COLA is consistent with the guidelines in NUREG-0654, Planning Standard D. Therefore, the staff finds the information acceptable and meets the relevant requirements of 10 CFR 50.47(b)(4) and 10 CFR Part 50, Appendix E, Sections IV.B and IV.C, insofar as the information describes the essential elements of advanced planning and the provisions made to cope with emergency situations.

13.3.4.5 *Notification Methods and Procedures*

As reflected in NUREG-0654, Planning Standard E, "Notification Methods and Procedures," 10 CFR 50.47(b)(5) requires that procedures have been established for notification, by the licensee, of State and local response organizations and for notification of emergency personnel by all organizations; the content of initial and follow-up messages to response organizations and the public has been established; and means to provide early notification and clear instruction to the populace within the 16-km (10-mi) plume exposure pathway EPZ have been established. In addition, 10 CFR Part 50, Appendix E, Section IV.A.4, requires a description of how offsite dose projections will be made and the results transmitted to State and local authorities, NRC, and other appropriate governmental entities. Regulations in 10 CFR Part 50, Appendix E, Section IV.C, require a description of EALs and emergency conditions that involve alerting or activating the emergency organization, including communication steps to be taken under each class of emergency, and the existence of a message authentication scheme. Regulations in 10 CFR Part 50, Appendix E, Section IV.D.1, require a description of administrative and physical means for notifying local, State and Federal officials and agencies and agreements reached with these officials and agencies for the prompt notification of the public and for public evacuation or other protective measures. The description shall include identification of the appropriate officials, by title and agency, of the State and local government agencies within the EPZs. Regulations in 10 CFR Part 50, Appendix E, Section IV.D.3, require the licensee to have the capability to notify responsible State and local governmental agencies within 15 minutes after declaring an emergency. The licensee shall demonstrate that appropriate governmental authorities have the capability to make a public alerting and notification decision promptly on being informed by the licensee of an emergency condition, and that administrative and physical means have been established for alerting and providing prompt instructions to the public within the plume exposure pathway EPZ. The alerting and notification capability shall include a backup method. Finally, 10 CFR 50.72(a)(3) requires NRC notification no later than one hour after declaring an emergency.

In COL Plan Section E, "Notification Methods and Procedures," the applicant described notification of ERO personnel; State, county, and Federal agencies; and the general public during a declared emergency at Turkey Point. The staff reviewed this section, as well as other relevant portions of the application, to determine whether the application conforms to the applicable guidance and complies with the pertinent regulatory requirements. The staff's primary focus was to evaluate the emergency plan against NUREG-0654, Planning Standard E, "Notification Methods and Procedures." Planning Standard E provides the detailed evaluation

criteria that the staff should consider to determine whether the emergency plan meets the applicable regulatory requirements in 10 CFR 50.47(b)(5).

COL Plan Section E.1, "Bases for Emergency Response Organization Notification," states that FPL, in cooperation with State and county authorities, has established mutually agreeable methods and procedures for notification of offsite response organizations, consistent with the emergency classification and action level scheme. (The emergency classification system is addressed in COL Plan Section D, and discussed above in SER Section 13.3.4.4.) Notifications to offsite agencies includes a means of verification or authentication, such as the use of dedicated communications networks, verification code words, or providing call-back verification telephone numbers.

If an emergency classification involves all units (i.e., Units 3, 4, 6, and 7) (i.e., for a natural phenomenon emergency or security-related event), and the classification for each unit is the same, the emergency shall be reported as affecting all units at the site. Unit 3 is typically designated as the lead unit for site-wide emergencies that include offsite notifications, unless conditions warrant otherwise. When an event affecting the site is detected, Unit 3 personnel will be contacted and provided information for emergency declaration. If an emergency classification involves only one unit, personnel at the affected unit will declare the emergency and initiate required notifications.

COL Plan Section E.2, "Notification and Mobilization of Emergency Response Personnel," states that EPIPs are established for notification and mobilization of emergency response personnel, and COL Plan Appendix 3 lists an EPIP titled Notifications/Communications. Details regarding notification responsibilities, communications systems, information required to be transmitted to offsite agencies, and notification techniques are specifically described in appropriate EPIPs. (Notification of onsite personnel is addressed in COL Plan Section J.1, and discussed below in SER Section 13.3.4.10.)

After these EPIPs, State and county agencies can be notified of an emergency event within 15 minutes of the initial emergency classification using a dedicated notification system. The emergency warning points are notified using a dedicated notification system, and personnel receiving the information are designated by the State and county agencies. Commercial telephone lines, satellite telephone (i.e., Emergency Satellite Communications System (EMNET)), cellular telephones, or radios are available as backup notification methods. In addition, the State of Florida is responsible for notifying government agencies that are within the 50-mi ingestion pathway EPZ. ITAAC 2.1 tests the capability to notify State and local authorities within 15 minutes after the declaration of an emergency in the main control room and the EOF. State and county authorities are responsible for notifying the general public.

An event will be reported to the NRC Operations Center immediately after notification of the appropriate State and county agencies, but not later than one hour after the time of initial classification, escalation, or event termination. The primary means of notification between the plant and the NRC is a dedicated system called the Emergency Notification System (ENS). The ENS is also addressed in PTN COL 9.5-9. Commercial telephone lines, cellular telephones, and EMNET are available as a backup notification method. The ERDS, which is a computerized data link to the NRC, will be initiated within one hour of the declaration of an Alert classification or higher.[11] The ERDS supplements the ENS, and an ERDS implementation

[11] See 10 CFR 50.72(a)(4), which states, in part, that the licensee shall activate ERDS as soon as possible, but not later than one hour, after declaring an emergency class of Alert or greater.

program plan is addressed in the applicant's proposed License Condition 6.e (see SER Section 13.3.4.19, below). Emergency communications are addressed in COL Plan Section F, and discussed below in SER Section 13.3.4.6 (see also, PTN COL 9.5-10 and PTN COL 18.2-2 in SER Section 13.3.4.18).

When an emergency is declared, reclassified or terminated, an announcement is made (over the plant public address system or by other means) that includes the emergency classification declared and response actions to be taken by site personnel. At the Unusual Event classification, select ERO augmentation personnel may be notified and requested to remain available to respond. At an Alert classification or higher, ERO augmentation personnel are notified for activation of the TSC, OSC, EOF and ENC using an automated callout system (pagers), or call lists in the Emergency Response Directory (listed as an administrative procedure in COL Plan Appendix 3) using commercial telephone as a backup. ITAAC 2.2 includes a test of the primary and backup ERO notification systems. If required, additional notifications to various support organizations will be made.

COL Plan Section E.3, "Initial Notification Messages," states that FPL, in conjunction with State and county authorities, has established the contents of the Florida Nuclear Plant Emergency Notification Form, which is completed and transmitted to the State and counties during a classified [declared] emergency. For an initial notification, the form includes, at a minimum, the emergency classification, whether a release is taking place, basic meteorological data, potentially affected population/areas, and any recommended protective actions. As additional information describing the emergency situation and local conditions becomes available, supplemental messages containing more detail will be provided. The NRC is notified of a classified [declared] emergency after State/county notification, using the Event Notification Worksheet (NRC Form 361) for initial notifications, and may require an open line of communications (e.g., using ENS or Health Physics Network (HPN)). Follow-up messages to State and county authorities will be provided—to the extent the information is available and appropriate—on a prearranged frequency to provide further description of the emergency. Follow-up notifications are provided to the NRC Operations Center as soon as possible, but not later than one hour after significant new information is available.

COL Plan Section E.6, "Notification of the Public," states that it is the responsibility of FPL, along with State and local governmental organizations, to provide adequate means for prompt notification of the general public within the 10-mi EPZ around Turkey Point. Administrative and physical means have been established for providing early initial warning and subsequent clear instructions to the public within the 10-mi EPZ. This notification capability consists of the Alert and Notification System (ANS) and the Emergency Alert System (EAS) radio and television stations.

The ANS consists of fixed sirens located throughout the 10-mi EPZ, which will alert the public to tune to a local radio or television station affiliated with the EAS for detailed emergency information. ITAAC 2.3 states that notification and clear instructions to the public are accomplished in accordance with the emergency plan requirements. Local and State actions are then initiated in accordance with the State of Florida radiological emergency response plan to ensure the implementation of appropriate protective measures. The ANS will be activated by Miami-Dade County from the EOC or Miami-Dade County 911, upon coordination and direction by State or local authorities, as specified in existing agreements concerning system activation. The siren system is designed in such a fashion that it can be operationally segregated by county boundary within the (Turkey Point) 16-km (10-mi) radius. In the unlikely event that the ANS

would fail to activate, the State of Florida Radiological Emergency Plan and Miami-Dade and Monroe Counties maintain the capacity to perform backup route alerting.

COL Plan Section E.7, "Messages to the Public," states that the offsite response organizations have developed EAS messages, which are consistent with the classification scheme and contain instructions with regard to specific protective actions to be taken by occupants and visitors of affected areas. FPL will provide offsite authorities with supporting information for messages to the public. The messages provide information on the nature of the emergency and recommended protective actions, including sheltering, evacuation, and the use of KI, as appropriate. The State and/or counties control the distribution of KI to the general public. Protective response is addressed in COL Plan Section J, and discussed below in SER Section 13.3.4.10.)

In its Interim Finding Report for Reasonable Assurance, FEMA found that the offsite emergency plans are adequate for this planning standard and associated evaluation criteria in NUREG-0654.

In view of the above, the staff finds that procedures for notification of State and local response organizations and emergency personnel by all organizations have been established, and the licensee has the capability to notify offsite officials and agencies, including State and local governmental agencies within 15 minutes, and the NRC no later than one hour, after declaring an emergency. The appropriate officials of the State and local government agencies within the EPZs have been identified. The licensee has described the entire spectrum of emergency conditions that involve alerting or activating the emergency organization, including EALs for offsite agency notification and communication steps to be taken under each class of emergency. Message authentication is described in the State and local emergency plans. The appropriate governmental authorities have the capability to make a public alerting and notification decision promptly following notification of an emergency by the licensee, and administrative and physical means have been established for alerting and providing prompt instruction to the public within the plume exposure pathway EPZ (including a backup method to alert populations), and for public evacuation and other protective measures. In addition, the applicant has described how offsite dose projections will be made and the results transmitted to State and local authorities, NRC, and other appropriate governmental entities.

Conclusion

The staff concludes that the information provided in the COLA is consistent with the guidelines in NUREG-0654, Planning Standard E. Therefore, the staff finds the information acceptable and meets the relevant requirements of 10 CFR 50.47(b)(5), 10 CFR 50.72(a)(3), and 10 CFR Part 50, Appendix E, Sections IV.A.4, IV.C, and IV.D.1, and IV.D.3, insofar as the information describes the essential elements of advanced planning and the provisions made to cope with emergency situations.

13.3.4.6 *Emergency Communications*

As reflected in NUREG-0654, Planning Standard F, "Emergency Communications," 10 CFR 50.47(b)(6) requires that provisions exist for prompt communications among principal response organizations to emergency personnel and to the public. In addition, 10 CFR Part 50, Appendix E, Section IV.E.9, requires onsite and offsite communication systems with backup power sources, including provisions for communications with State and local governments within the plume exposure EPZ, and Federal emergency response organizations and the NRC.

Also required are provisions for communications among the Control Room, TSC, EOF, principal State and local EOCs, and field assessment teams. Communication systems shall be tested at designated frequencies.

In COL Plan Section F, "Emergency Communications," the applicant described the provisions used for communications between Turkey Point and principal response organizations, and communications between the emergency response facilities. The staff reviewed this section, as well as other relevant portions of the application, to determine whether the application conforms to the applicable guidance and complies with the pertinent regulatory requirements. The staff's primary focus was to evaluate the emergency plan against NUREG-0654, Planning Standard F, "Emergency Communications." Planning Standard F provides the detailed evaluation criteria that the staff should consider to determine whether the emergency plan meets the applicable regulatory requirements in 10 CFR 50.47(b)(6).

COL Plan Section F.1, "Communications/Notifications," provides detailed descriptions of the various communications equipment and capabilities. FPL has extensive and reliable communication systems installed at Turkey Point, which include systems such as normal and dedicated telephone lines on landlines, fiber-optic voice channels, cellular telephones, satellite telephones, mobile radio units, portable radios, and computer peripherals. This network capability serves to maintain communication links to the emergency response facilities and offsite authorities; communications between emergency vehicles and fixed locations; and facsimile, computer network, and modem transmission.

The plant page system, Private Branch Exchange (PBX) telephone system, FPL Intelligent Tandem Network (ITN) System, automated ERO callout system, and commercial telephone system are used for alerting personnel. Separate, dedicated telephone lines provide for communications with NRC headquarters, the NRC Regional Office EOC, and the EOF. These include the HPN, Reactor Safety Counterpart Link (RSCL), Protective Measures Counterpart Link (PMCL), Management Counterpart Link (MCL), ERDS, and ENS. Backup power is provided for the ENS lines, in compliance with the guidance of BL-80-15 regarding loss of offsite power to the ENS (see PTN COL 9.5-9 in SER Section 13.3.4.18). See also, *Fukushima Dai-ichi—NTTF Recommendation 9.3* (below), regarding the availability of communications equipment during a prolonged station blackout and staff identified License Condition (13-4). COL Plan Figures F-2 and F-3 illustrate the primary and alternate methods of communication between FPL emergency response facilities and the NRC communications network.

FPL has established several communication systems that ensure reliable and timely exchange of information necessary to provide effective command and control over any emergency response (1) between the plant and State and county agencies within the EPZs, (2) with Federal EROs, (3) between the plant, the EOF, and State and county EOCs, and (4) between the emergency response facilities and field monitoring teams. FPL maintains the capability to make initial notifications to the designated offsite agencies on a 24-hour-per-day basis. (Notification methods and procedures are addressed in COL Plan Section E, and discussed above in SER Section 13.3.4.5.) The offsite notification system State "hot ring down" telephone provides primary communications to State and county warning points and EOCs from each Control Room, TSC, and the EOF. Backup or secondary methods include commercial telephone lines, EMNET, cellular telephones, and radios (see also, PTN COL 9.5-10 and PTN COL 18.2-2 in SER Section 13.3.4.18). State and county warning points are continuously staffed. COL Plan Figure F-1 shows the initial notification paths and the organizational titles from the Turkey Point emergency response facilities to Federal, State, and county EROs, and industry support agencies.

COL Plan Section F.2, "Communications with Fixed and Mobile Medical Support Facilities," states that communications are established from the site to the primary and backup medical hospitals and transportation services via telephone or radio. In all cases, site personnel notify the hospital by telephone concerning the pending arrival of injured personnel. If a helicopter is needed for transport, the hospital can maintain ground-to-air communications. Cellular telephones are available on site to be used as an alternate means of communications.

COL Plan Section N.2 states that communication between the Control Rooms, TSC, EOF, NRC, State and county warning points and EOCs, and NRC are tested monthly. ERDS is tested quarterly. Annual testing includes communications between Turkey Point and the State and local EOCs and field monitoring teams, and communications between the Control Rooms, TSC, EOF, and ENC. In addition, communications between Turkey Point emergency response facilities and the appropriate offsite response organizations are tested during annual drills. (Communication drills are addressed in COL Plan Section N.2, and discussed in SER Section 13.3.4.14.) ITAAC 3.1 and ITAAC 3.2 address the establishment of onsite and offsite communications (both primary and secondary methods/systems), including the availability of an access port for ERDS (or its successor system) and transfer of data from the unit to the NRC operations center.

Fukushima Dai-ichi—NTTF Recommendation 9.3

On March 12, 2012 (ADAMS Accession No. ML12053A340), the NRC requested additional information from all power reactor licensees and holders of construction permits, associated with the NRC NTTF review of the accident at the Fukushima Dai-ichi nuclear facility. In Recommendation 9.3, the NTTF addressed staffing and communications provisions for enhancing emergency preparedness. On January 23, 2013, the NRC issued a follow-up letter, which identified eight generic technical issues that need to be addressed as part of the Recommendation 9.3 communications capability assessment.

With regard to communications, the accident at Fukushima highlighted the need to ensure that the communications equipment relied upon to coordinate the event response during a prolonged station blackout can be powered. Specifically, the March 12, 2012, letter requests that all power reactor licensees and holders of construction permits (in active or deferred status) assess their current communications systems and equipment used during an emergency event, including consideration of any enhancements that may be appropriate for the emergency plan with respect to communications requirements of 10 CFR 50.47, Appendix E to 10 CFR Part 50, and NUREG-0696, "Functional Criteria for Emergency Response Facilities." In addition, the means necessary to power the new and existing communications equipment during a prolonged station blackout should be considered. Onsite emergency organization and staffing is addressed above in SER Section 13.3.4.2. (See also, COL STD 13.3-2 in SER Section 13.3.4.18.)

In COLA Part 10, the applicant proposed License Condition 12.C, "Fukushima Actions—Emergency Planning Actions," which addresses both the staffing and communications areas addressed in Recommendation 9.3. Consistent with License Condition 12.C—with regard to the communications capability assessment—the staff identified License Condition (13-4), which is addressed above in SER Section 13.3.4.2.

In its Interim Finding Report for Reasonable Assurance, FEMA found that the offsite emergency plans are adequate for this planning standard and associated evaluation criteria in NUREG-0654.

In view of the above, and subject to License Condition (13-4), the staff finds that provisions exist for prompt communications among principal response organizations to emergency personnel and to the public. Specifically, the applicant has established a reliable primary and backup means of communications for alerting and activating the response organizations and personnel, including 24-hour manning of communications links. Provisions also exist for communications among the Control Room, TSC, EOF, State and local governments within the EPZs, and field assessment teams. In addition, the applicant has provided a coordinated communication link for fixed and mobile medical support facilities. Onsite and offsite communications systems have backup power sources, and are tested at designated frequencies.

Conclusion

Subject to License Condition (13-4), the staff concludes that the information provided in the COLA is consistent with the guidelines in NUREG-0654, Planning Standard F. Therefore, the staff finds the information acceptable and meets the relevant requirements of 10 CFR 50.47(b)(6) and 10 CFR Part 50, Appendix E, Section IV.E.9, insofar as the information describes the essential elements of advanced planning and the provisions made to cope with emergency situations.

13.3.4.7 *Public Education and Information*

As reflected in NUREG-0654, Planning Standard G, "Public Education and Information," 10 CFR 50.47(b)(7) requires that information be made available periodically to members of the public concerning notification methods and initial actions they should take in an emergency (e.g., listening to a local broadcast station and remaining indoors), that the principal points of contact with the news media for dissemination of information during an emergency (including the physical location or locations) be established in advance, and that procedures for coordinating dissemination of information to the public be established. In addition, 10 CFR Part 50, Appendix E, Section IV.D.2, requires a description of provisions for yearly dissemination to the public within the plume exposure EPZ of basic emergency planning information, such as methods for public notifications and protective actions planned if an accident occurs, general information as to the nature and effects of radiation, and a listing of local broadcast stations that will be used for dissemination of information during an emergency. Signs or other measures shall also be used to disseminate information to any transient population within the plume exposure pathway 10-mi EPZ.

In COL Plan Section G, "Public Education and Information," the applicant described the FPL public education and information program, including the process for keeping the public in the 10-mi EPZ informed in the event of an emergency. The staff reviewed this section, as well as other relevant portions of the application, to determine whether the application conforms to the applicable guidance and complies with the pertinent regulatory requirements. The staff's primary focus was to evaluate the emergency plan against NUREG-0654, Planning Standard G, "Public Education and Information." Planning Standard G provides the detailed evaluation criteria that the staff should consider to determine whether the emergency plan meets the applicable regulatory requirements in 10 CFR 50.47(b)(7).

COL Plan Section G.1, "Public Information Publication," states that FPL is responsible for maintaining a public information program, with support from the State of Florida Division of Emergency Management (DEM) and the Miami-Dade and Monroe Counties emergency management offices. The State of Florida has overall responsibility for maintaining a continuing

disaster preparedness public education program. The Turkey Point public information publication is updated annually, in coordination with State and county agencies, and distributed to all residents within the 10-mi EPZ and to locations where the transient population may obtain a copy. The public information material explains how the public will be notified and what their actions should be during an emergency, and includes educational information on radiation, a description of possible protective measures for the public, a map of major evacuation routes, a list of reception centers, instructions on how to obtain information regarding the disabled or their caretakers, and those without transportation, and who to contact for additional information.

The publications instruct the public to go indoors and turn on their televisions or radios when they hear the ANS sirens operating, and identify the local television and radio stations that will provide information related to the emergency. Information is also provided to the transient population by means of signs on siren poles that instruct them (in English and Spanish) to turn to EAS stations. Public notices at local business establishments, parks, beaches, and other outdoor recreational facilities around Turkey Point provide a list of television and radio stations that will transmit emergency information and numbers where additional information can be obtained.

COL Plan Section G.3, “Media Accommodations,” states that the FPL Marketing and Communications Department is notified upon declaration of an Unusual Event or higher emergency classification, and will handle public and media inquiries until the ENC is activated. The ENC is on the second floor of the FPL General Office Building in Miami, FL, and is collocated with the EOF. Once the ENC is activated at an Alert or higher emergency classification, or at an earlier classification if conditions warrant, it has the responsibility and authority for issuing news releases to the public. The FPL public information officer directs activities at the ENC. FPL spokespersons and ENC staff coordinate emergency information with the EOF, Marketing and Communications personnel in the Juno Beach office, and Federal, State, and county spokespersons located in the ENC. COL Plan Appendix 3 lists an EPIP titled “Emergency News Center Activation and Operation,” and an administrative procedure titled “Public Education and Information.”

The ENC serves as a location where media personnel gather to receive information related to the emergency event, and approved news releases will be provided to the media for dissemination to the public. The ENC functions as the single point of contact to interface with Federal, State, and local authorities that are responsible for disseminating information to the public. Public information personnel coordinate development and distribution of news releases from the EOF and the ENC. The ENC is equipped with appropriate seating, lighting, and visual aids to allow for public announcements and briefings to be given to the news media. Additionally, the ENC is equipped with commercial telephone lines for making outgoing calls. Functions of the ENC include serving as the primary location for accumulating information and developing news releases; providing work space and telephones for public information personnel from the State, counties, NRC, FEMA, and industry organizations; providing work space and telephones for news media personnel; and providing responses to media inquiries. ITAAC 4.1 addresses the adequacy of ENC size, equipment, and communications capabilities.

The ENC is staffed by FPL and government public information representatives who will be the source of public information during an emergency at the plant, and who will coordinate information. The FPL public information officer, who has direct access to all necessary emergency information, is the primary spokesperson for FPL, and is assisted by the chief nuclear spokesperson. The timely exchange of information between designated spokespersons will enhance communications flow to the public and news media, and also aid in dispelling

rumors. Media Monitors and Rumor Control personnel in the ENC may identify rumors or misinformation when responding to telephone calls from the general public and the news media, and from monitoring media reports. In addition, the Miami-Dade County Office of Emergency Management maintains telephones designated for rumor control, and State and local plans and procedures provide further details for control of rumors and other misinformation. FPL, in cooperation with the State of Florida and Counties of Miami-Dade and Monroe, will conduct an annual program to acquaint the news media with information concerning nuclear power, and points of contact for release of public information in an emergency.

In its Interim Finding Report for Reasonable Assurance, FEMA found that the offsite emergency plans are adequate for this planning standard and associated evaluation criteria in NUREG-0654.

In view of the above, the staff finds that the applicant has provided for a coordinated and periodic dissemination of information to the public—including the permanent and transient adult population within the plume exposure EPZ—regarding how they will be notified and what their actions should be in an emergency. The applicant has also established the principal points of contact with the news media for dissemination of information during an emergency, and procedures for coordinated dissemination of information to the public. In addition, the applicant has described the provisions for yearly dissemination to the public within the plume exposure EPZ of basic emergency planning information, including the use of signs or other measures to disseminate information to any transient population within the plume exposure EPZ.

Conclusion

The staff concludes that the information provided in the COLA is consistent with the guidelines in NUREG-0654, Planning Standard G. Therefore, the staff finds the information acceptable and meets the relevant requirements of 10 CFR 50.47(b)(7) and 10 CFR Part 50, Appendix E, Section IV.D.2, insofar as the information describes the essential elements of advanced planning and the provisions made to cope with emergency situations.

13.3.4.8 *Emergency Facilities and Equipment*

As reflected in NUREG-0654, Planning Standard H, “Emergency Facilities and Equipment,” 10 CFR 50.47(b)(8) requires that adequate emergency facilities and equipment to support the emergency response be provided and maintained. In addition, 10 CFR Part 50, Appendix E, Section IV.E.8, requires that adequate provision shall be made and described for emergency facilities and equipment, including an onsite OSC and TSC, and an EOF from which effective direction can be given and effective control can be exercised during an emergency. Regulations in 10 CFR Part 50, Appendix E, Section IV.E.8.b, address various requirements associated with EOF locations and required provisions, which are not applicable to an existing EOF pursuant to 10 CFR Part 50, Appendix E, Section IV.E.8.e. Regulations in 10 CFR Part 50, Appendix E, Section IV.E.8.c, require various EOF capabilities, which include supporting response to multiple reactors/sites and simultaneous events, as applicable. Regulations in 10 CFR Part 50, Appendix E, Section IV.E.8.d, require an alternative facility (for use when onsite emergency facilities cannot be safely accessed during hostile actions) that would be accessible to function as a staging area for augmentation of emergency response staff. Regulations in 10 CFR Part 50, Appendix E, Section IV.G, require a description of provisions to be employed to ensure that the emergency plan, its implementing procedures, and emergency equipment and supplies are maintained up to date. Regulations in 10 CFR Part 50, Appendix E, Section VI.1, require an ERDS data link between the licensee’s onsite computer

system and the NRC Operations Center, which provides for the automatic transmission of a limited data set of selected parameters.

In COL Plan Section H, "Emergency Facilities and Equipment," the applicant described the functions and locations of the emergency response facilities and equipment that will be used and maintained by FPL in coordinating and performing emergency response activities, and the surveillance programs used to monitor and ensure that these facilities and equipment are maintained in a high degree of constant readiness. In addition, COL Plan Appendix 3 lists an administrative procedure titled "Emergency Response Facilities and Equipment." The staff reviewed this section, as well as other relevant portions of the application, to determine whether the application conforms to the applicable guidance and complies with the pertinent regulatory requirements. The staff's primary focus was to evaluate the emergency plan against NUREG-0654, Planning Standard H, "Emergency Facilities and Equipment." Planning Standard H provides the detailed evaluation criteria that the staff should consider to determine whether the emergency plan meets the applicable regulatory requirements in 10 CFR 50.47(b)(8).

Control Room

There is a Control Room for each of the units on the site where major plant systems are operated. Each Control Room is equipped with instrumentation to supply detailed information on the reactor and major systems. The Control Room for the affected unit is the first onsite facility to become involved with the response to emergency events, and will be the designated location for the emergency coordinator. Emergency coordinator responsibilities will transfer to the TSC and EOF when the facilities are properly staffed and prepared to take over these responsibilities. Control Room personnel must evaluate and effect control over the emergency and initiate activities necessary for coping with the emergency until such time that the augmented emergency response facilities can be activated.

The emergency response facilities that have been established at Turkey Point to assist Control Room personnel in mitigating the consequences of accidents include the TSC, EOF and OSC (discussed below), and the ENC. In FSAR Table 1.8-201 and Section A of COLA Part 7, the applicant described two Tier 2 departures from the AP1000 DCD, which address moving the locations of the OSC and TSC that support Units 6 and 7 (i.e., PTN DEP 18.8-1 and PTN DEP 18.8-2, respectively). These two departures are discussed below under the applicable OSC and TSC subsections.

Technical Support Center

The TSC is located in the Turkey Point Nuclear Training Building, which is outside of the Protected Areas between the Control Rooms for Units 3 and 4 and the Control Rooms for Units 6 and 7. The applicant stated in COL Plan Section H.1.b that this location provides the ability to respond and activate the facility in a timely fashion independent of the unit(s) that may be affected by the emergency, and will permit the use of the TSC in a security event that may curtail the entry of ERO personnel into a Protected Area of the affected unit(s). ITAAC 5.1.2 states that the TSC is located outside the Protected Area, and procedures are in place to enhance passage through security checkpoints expeditiously. The Nuclear Training Building is identified in COL Plan Annex 1 (Units 3 and 4), Figure A1-1, "Units 3 and 4 Facility Layout," and can be seen in COL Plan Part 1 Figure 1-2, "Turkey Point Site Layout," and COLA Part 2 (FSAR) Figure 2.1-204, "Turkey Point Enlarged Site Area Map."

The location of the TSC is addressed in Tier 2 departure PTN DEP 18.8-2, which moves the TSC for Units 6 and 7 from the AP1000 DCD CSA (Room 40403) to a common TSC—supporting Units 3, 4, 6, and 7—in the Nuclear Training Building. In COLA Part 7, the applicant assessed PTN DEP 18.8-2 pursuant to Section VIII.B.5.b of Appendix D to 10 CFR Part 52, and concluded that the departure has no safety significance. Specifically, the departure is for a nonsafety-related system, the alternate location of the TSC meets applicable requirements, and relocating the TSC does not impair its function. The staff agrees with the applicant's evaluation, for the reasons described below.

Pursuant to 10 CFR 50.47(b)(8), the applicant must provide and maintain adequate emergency facilities and equipment to support the emergency response, which includes the TSC. As stated in NUREG-0696, Section 2.1, "Function," the TSC provides guidance and technical assistance to the Control Room, and all plant manipulations shall be performed by the Control Room licensed operators. With regard to the applicant's proposed common TSC location, the staff considered the applicable guidance in NUREG-0696, which states the following in Section 2.2, "Location":

> The onsite TSC is to provide facilities near the control room for detailed analyses of plant conditions during abnormal conditions or emergencies by trained and competent technical staff. During recent events at nuclear power plants, telephone communications between the facilities were ineffective in providing all of the necessary management interaction and technical information exchange. This demonstrates the need for face-to-face communications between TSC and control room personnel. To accomplish this, the TSC shall be as close as possible to the control room, preferably located within the same building. The walking time from the TSC to the control room shall not exceed 2 minutes. This close location will facilitate face-to-face interaction between control room personnel and the senior plant manager working in the TSC. This proximity also will provide access to information in the control room that is not available in the TSC data system.
>
> Provisions shall be made for the safe and timely movement of personnel between the TSC and the control room under emergency conditions. These provisions shall include consideration of the effects of direct radiation and airborne radioactivity from inplant sources on personnel traveling between the two facilities. Anticontamination clothing, respiratory protection, and other protective gear may be used to help protect personnel in transit. The 2-minute travel time between the TSC and the control room does not include time required to put on any necessary radiological protective gear, but it does include the time required to clear any security checkpoints. There should be no major security barriers between these two facilities other than access control stations for the TSC and control room.

Further guidance is provided in Supplement 1 to NUREG-0737, "Clarification of TMI Action Plan Requirements—Requirements for Emergency Response Capability (Generic Letter No. 82-33)," in relation to the TSC location. Specifically, Section 8.2, "Technical Support Center (TSC)," states that the TSC will be located within the site protected area so as to facilitate necessary interaction with control room, OSC, EOF and other personnel involved with the emergency. See also, DCD Tier 2 Subsection 18.8.3.5, "Technical Support Center Mission and Major Tasks," which describes various aspects of the TSC, including human factors considerations.

In RAI 5681, Question 13.03-8 (H-1), the staff requested additional information from the applicant, regarding the applicant's justification for locating the TSC outside of the Protected Area, a description of any impediments that could impact or delay the transit time between the TSC and Control Rooms, and a description of communication capabilities that compensate for the increased distance and transit time between the TSC and the Control Rooms. In a September 14, 2011, response to RAI 5681, Question 13.03-8 (H-1), the applicant stated the following:

> FPL has chosen to develop a TSC that will support the response to Turkey Point Units 3, 4, 6, & 7. The TSC will be located north of Turkey Point Units 6 & 7 and south of Turkey Point Units 3 & 4. The separation of the TSC from the three control rooms will be approximately 2600 feet [792 m] or within approximately a 10 to 15 minute walk. Use of current technologies such as updated computer equipment, teleconferencing, real time system monitoring through plant computer networks, and telephone and radio systems for primary and emergency communications will bridge the physical separation. The facility will have access to plant drawings, procedures, and computer applications needed to support the evaluation and decision-making processes of the Emergency Response Organization (ERO). The TSC will be a larger dedicated facility located in the Training Building. Procedures are in place to ensure that passage from outside the Protected Area into the Control Room is not hindered during the emergency. The placement of the TSC outside of the Protected Area enhances the ability to reach minimum staffing levels and for activation for the TSC especially during the off-hours. This location also provides an enhanced capability for staff to activate the facility during a hostile action event inside the Protected Area.

The staff had previously considered the "2 minute walking time" criterion associated with the TSC location as part of the development of the emergency planning ITAAC addressed in SECY-05-0197.[12] In relation to the TSC location, generic ITAAC acceptance criterion 5.1.2 of SECY-05-0197 includes the statement that "[t]he COL applicant will adopt design certification criteria, if applicable, or otherwise specify TSC location." The equivalent ITAAC acceptance criterion 8.1.2 of NUREG-0800 (Table 14.3.10-1) and RG 1.206 (Table C.II.1-B1), added a statement that "[a]dvanced communication capabilities may be used to satisfy the two minute travel time."

[12] 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. ML052770225). See also, the associated February 22, 2006, Staff Requirements Memorandum (ADAMS Accession No. ML060530316).

The staff evaluated various factors to determine the appropriateness and acceptability of providing flexibility relating to the 2-minute walking time between the TSC and Control Room in the guidance documents, including technical advances in both communication and data system technologies since NUREG-0696 and Supplement 1 to NUREG-0737 were published in 1981 and 1983, respectively.[13] In addition, having a common TSC that supports multiple reactor units and is located a moderate distance (i.e., more than 2 minutes) from the Control Rooms presents distinct advantages. These advantages include the increased efficiency of a centralized point of support for the entire site, the elimination of confusion regarding which TSC on a multiple-unit site would be staffed during an emergency, not having to staff multiple TSCs if an incident involved more than one unit, a single point of contact for offsite support, and consideration of security-related (i.e., hostile action) events. (Additional TSC requirements are addressed within this report section.) From a support and functional standpoint, and subject to a demonstration of adequacy during the full participation exercise (addressed in ITAAC 8.1), the staff finds that the applicant's proposed TSC location outside the Protected Area is acceptable for the following two reasons: First, compared to TSCs in the early 1980's, the proposed TSC will have enhanced staffing and activation capabilities, including use of current technologies for communication and data systems. Second, the location provides an enhanced capability for activation of the TSC during a hostile action event inside the Protected Area. Therefore, the staff finds that the applicant's response is acceptable and considers RAI 5681, Question 13.03-8 (H-1), resolved.

In COL Plan Section H.1.b, "Technical Support Center (TSC)," the applicant stated that the TSC provides plant management and technical support to Control Room personnel and technical data and information to the EOF, and is sized to accommodate a minimum of 40 people and their supporting equipment (including six NRC representatives). ITAAC 5.1.1 states that the TSC has at least 3,000 square feet (279 square meters) of floor space consistent with NUREG-0696 (75 square feet/person, or 6.97 square meters/person) and is large enough for required systems, equipment, records and storage. ITAAC 5.1.5 states that the TSC has the means to receive, store, process, and display various plant and environmental information, and to initiate emergency measures and conduct emergency assessment. Plant parameters that can be retrieved in the TSC are also addressed in DCD Tier 1 Table 3.1-1, ITAAC 3.

The TSC is activated for all emergencies classified as Alert or higher, and may be activated at an Unusual Event if deemed necessary by the emergency coordinator. ITAAC 8.1.1.D.1.a states that the TSC and OSC are activated within 60 minutes from notification of an Alert or higher event classification, with at least minimum staffing. When operational, the TSC provides support for the affected Control Room's emergency response efforts; continued evaluation of event classification; assessment of plant status and potential offsite impact; coordination of emergency response action within the Protected Area; protective actions onsite and offsite (until the EOF is operational); and communication with offsite government agencies (until the EOF is operational). COL Plan Appendix 3 lists an EPIP titled "TSC Activation and Operation." ITAAC 8.1.1.C.1.a states that command and control is demonstrated by the main control room in the early phase of the emergency, and by the TSC within 60 minutes from notification of an Alert or higher event classification, with at least minimum staffing. In addition, ITAAC 8.1.1.C.2 states that the exercise will demonstrate the ability to transfer emergency direction from the main control room (simulator) to the TSC.

[13] On March 12, 2007, the NRC approved a TSC location that is approximately 15 minutes from the control room for the Clinton Power Station (ADAMS Accession No. ML070540270). See also, Section 13.3, "Emergency Planning," of NUREG-2124, "Final Safety Evaluation Report—Related to the Combined Licenses for Vogtle Electric Generating Plan, Units 3 and 4," Volume 2, September 2012 (ADAMS Accession No. ML12271A048), where the NRC approved the Vogtle site's common TSC location that is approximately 10 minutes from the control room.

Although the TSC does not provide for face-to-face communications with the affected Control Room(s), it has communication links that can transmit and receive direct voice and data communications from the affected Control Room. The TSC is the primary onsite communications center during an emergency and provides reliable voice communications to the Control Room, OSC, EOF, NRC, and other offsite agencies. (The availability of an ERDS data link between the licensee's onsite computer system and the NRC Operations Center is addressed in COL Plan Sections E, F, and N, and is discussed in SER Sections 13.3.4.5, 13.3.4.6, and 13.3.4.14, respectively.) Security personnel are positioned in the TSC to expedite personnel movement between the TSC and Control Room, as necessary. Communication capabilities are addressed further in COL Plan Section F, and discussed above in SER Section 13.3.4.6. ITAAC 5.1.3 addresses the TSC communications equipment and capabilities. In addition, TSC and EOF communications strategies and human functions attributes are addressed in PTN COL 18.2-2, and discussed below in SER Section 13.3.4.18.

In COL Plan Section H.1.b, the applicant stated that personnel in the TSC shall be protected from radiological hazards, including direct radiation and airborne contaminants under accident conditions, with similar radiological habitability as Control Room personnel. Adequate radiological protection will be ensured through permanent Radiation Monitoring Systems (RMSs) or periodic radiation surveys. These systems indicate radiation dose rates and airborne radioactivity inside the TSC while it is in use. In addition, KI is available in the TSC, if needed. If the TSC becomes uninhabitable for any reason, implementing procedures will provide guidance on the transfer of duties and relocation of the staff. ITAAC 5.1.4 addresses radiological and nonradiological protection features for the TSC, and ITAAC 5.1.6 states that a reliable and backup electrical power supply is available for the TSC. In addition, ITAAC 8.1.1.D.2 includes a demonstration of the adequacy of TSC habitability precautions.

In SRP Section 15.0.3, "Design Basis Accident Radiological Consequence Analyses for Advanced Light Water Reactors," Acceptance Criterion 3 states that the radiation protection design of the TSC is acceptable if the total calculated radiological consequences for the postulated fission product release fall within the exposure acceptance criteria specified for the Control Room of 0.05 sievert (Sv) (5 rem) total effective dose equivalent (TEDE) for the duration of the accident.[14] (See also, SER Section 15.0, "Accident Analysis.") In RAI 5997, Question 13.03-17(b), October 26, 2011 (ADAMS Accession No. ML11299A096), the staff requested additional information from the applicant regarding the radiological consequence analyses for the Turkey Point common TSC, for the postulated design basis accidents (DBAs) for the proposed Units 6 and 7 and existing Units 3 and 4. In addition, the staff asked the applicant to describe relevant TSC ventilation system design parameters and assumptions that were used in the radiological habitability analysis.

In a March 19, 2012, response to RAI 5997, Question 13.03-17(b) (ADAMS Accession No. ML12080A085), the applicant stated that the TSC structure and ventilation system will be designed to ensure that the TSC personnel are protected from radiological hazards. In addition, dose calculations have been completed using bounding TSC design considerations for the facility, and the parameters for the ventilation system have been selected to limit the dose in the TSC to less than 0.05 Sv (5 rem) TEDE. The applicant described the radiological habitability

[14] TEDE means the sum of the effective dose equivalent for external exposures and the committed effective dose equivalent for internal exposures (see 10 CFR 20.1003). Rem is a special unit of radiation dose equivalent (see 10 CFR 20.1004). 10 CFR Part 50, Appendix A, "General Design Criteria for Nuclear Power Plants," includes Criterion 19—Control Room, which requires adequate radiation protection for control room personnel under accident conditions for the duration of the accident.

analysis for the TSC, and evaluated the radiological consequences in the TSC of a loss-of-coolant accident (LOCA) at Unit 3, 4, 6, or 7 to show compliance with the TSC radiological habitability requirements. The LOCA is the bounding DBA for TSC habitability.

Using the bounding values for heating, ventilation, and air conditioning (HVAC) system flow rates, unfiltered in-leakage, recirculation flow rate and filtration efficiencies, the final TSC design is anticipated to result in a lower dose in the TSC in an accident condition. The applicant provided atmospheric dispersion factors (χ/Q values) for a release from the Unit 4 equipment hatch and emergency core cooling system (ECCS) leakage point, and the Units 6 and 7 release point to the TSC air intake. The highest calculated dose resulted from the Unit 4 postulated LOCA, and was estimated by the applicant to be 0.0437 Sv (4.37 rem).

The staff performed an independent verification of the applicant's TSC χ/Q values based on information given in COLA Part 2 (FSAR) and the COL Plan, and determined that the TSC χ/Q values are reasonable. The staff reviewed the description of the radiological habitability analysis inputs and assumptions—including information provided in FPL's June 25, 2009, License Amendment Request 196 to revise the accident source term for Units 3 and 4 (ADAMS Accession No. ML092050277)—and determined that the inputs and assumptions are reasonable and consistent with the guidance in RG 1.183, "Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors" (July 2000), for performing DBA radiological consequences analyses. The staff performed an independent calculation using the design values in the applicant's RAI response, and calculated a dose of 0.047 Sv (4.7 rem). As a result, the staff concludes that the applicant has demonstrated, using conservative design parameters and assumptions, that the 0.05 Sv (5 rem) TEDE criterion will be met in the TSC for the duration of an accident at Units 3, 4, 6, or 7.

The TSC-related ITAAC will verify the TSC design, which was bounded by the TSC radiological habitability analysis discussed in response to RAI 5997, Question 13.03-17(b). Based on the above discussion, the staff finds that the radiation protection design of the TSC is acceptable and the TSC radiological habitability requirements will be met, because the total calculated radiological consequences for the postulated fission product release fall within the exposure acceptance criterion identified above. In addition, the staff finds that the TSC will provide adequate nonradiological protection, which includes facility cooling, heating, humidity, electrical power, ventilation and air filtration. Therefore, the staff considers RAI 5997, Question 13.03-17(b), resolved.

COL Plan Section H.1.b further states that the TSC has access to a complete set of drawings, other records, general arrangement diagrams, electrical schematics, and piping and instrument diagrams. The TSC has the capability to record and display vital plant data in real time (e.g., using the Safety Parameter Display System (SPDS)), to be used by knowledgeable individuals responsible for engineering and management support of reactor operations, and for implementation of emergency procedures. As described in COL Plan Section H.6, "Monitoring Equipment Onsite," the SPDS provides a display of plant parameters from which the safety status of operation may be assessed in the Control Room, TSC, and EOF for the plant. The SPDS or other display systems in the TSC and EOF promote the exchange of information between these facilities and the Control Room, and assist the emergency organization in the decisionmaking process.

AP1000 DCD Tier 2 Section 7.5, "Safety-Related Display Information," describes the monitored plant parameter variables, which are based on the guidance in RG 1.97, "Criteria for Accident Monitoring Instrumentation for Nuclear Power Plants." The safety-related display information is

used by the operator to monitor and maintain the safety of the AP1000 throughout operating conditions that include anticipated operational occurrences and accident and post-accident conditions. In RAI 5681, Question 13.03-8 (H-2), the staff requested additional information from the applicant regarding a description of how plant parameter variables, based on RG 1.97, are made available in the TSC. In a September 30, 2011, response to RAI 5681, Question 13.03-8 (H-2) (ADAMS Accession No. ML11276A101), the applicant stated that the TSC is equipped with voice and data communications to each of the unit Control Rooms, and that the data that is provided to the Control Room is provided to the TSC to enable the TSC staff to support the technical response to the emergency. The AP1000 DCD provides the information in Section 7.5.1 and DCD Table 7.5-1. In addition, FPL has provided the site-specific information in FSAR Table 7.5-201. The availability of this information in the TSC is addressed in ITAAC 5.1.5. The staff reviewed DCD Table 7.5-1 and FSAR Table 7.5-201, and finds this acceptable because it is consistent with NUREG-0696. Therefore, the staff considers RAI 5681, Question 13.03-8 (H-2), resolved. Information systems associated with emergency response facilities and the accident monitoring and display systems are discussed in SER Section 7.5, "Information Systems Important to Safety."

COL Plan Section H.6 states that there are two permanent meteorological monitoring stations near the plant for display and recording of wind speed, and direction, and ambient and differential temperature for use in making offsite dose projections. Meteorological information is presented in the Control Room, TSC, and EOF by means of the plant computer system. In addition, COLA Part 2 Section 2.3.3.1.7, "Emergency Preparedness Support," states that provisions are in place to obtain representative regional meteorological data during an emergency if the site meteorological system is unavailable.

For the reasons set forth above, the staff finds that the common TSC provides an area that meets the applicable regulatory guidance in NUREG-0696 and Supplement 1 to NUREG-0737, except for the TSC distance from the Unit 6 and 7 control rooms, which the applicant has justified, and as such, the TSC will adequately support its intended emergency response functions. Therefore, the staff concludes that PTN DEP 18.8-2 is acceptable.

Emergency Operations Facility

The Emergency Operations Facility (EOF) provides management of overall emergency response; notification of offsite government agencies; coordination of radiological and environmental assessments and emergency response activities with government agencies; determination of recommended public protective actions, and management of recovery operations. The COL Plan utilizes the same EOF that currently supports Units 3 and 4, which is located 41.8 km (26 mi) from the Turkey Point site at the existing FPL General Office building in Miami, FL.

The EOF is sized to accommodate about 75 personnel, including FPL, State, county and NRC representatives, and is equipped with reliable voice communications systems including communications to the Control Room, TSC, ENC, offsite State and county EOCs, NRC, and offsite field monitoring teams. In addition, EOF and TSC communications strategies and human functions attributes are addressed in PTN COL 18.2-2, and discussed below in SER Section 13.3.4.18. ITAAC 5.2.1 states that the EOF working space size is a minimum of 5,625 square feet (523 square meters) consistent with NUREG-0696 (75 square feet/person, or 6.97 square meters/person), and is large enough for required systems, equipment, records, and storage. Communication capabilities are addressed further in COL Plan Section F and discussed in SER Section 13.3.4.6.

The EOF contains equipment to gather, store, and display data needed in the EOF to analyze and exchange plant condition information with the plant, and the EOF technical data system receives, stores, processes, and displays information sufficient to perform assessments of actual and potential onsite and offsite environment consequences of an emergency. The EOF has ready access to plant records, procedures, and emergency plans, including RMS information and parameters that are required of the SPDS, needed for overall management of emergency response resources. As described in COL Plan Section H.6, the SPDS provides a display of plant parameters from which the safety status of operation may be assessed in the Control Room, TSC, and EOF for the plant. The SPDS or other display systems in the TSC and EOF promote the exchange of information between these facilities and the Control Room, and assist the emergency organization in the decisionmaking process. COL Plan Appendix 3 lists an EPIP titled "EOF Activation and Operation." See also, SER Section 13.3.4.10, which addresses FPL's designation of the EOF as an alternative facility to support the ERO augmentation—including functioning as a back-up TSC and OSC—during hostile action events. ITAAC 5.2 addresses the EOF size, communications capabilities, and availability of environmental and plant system data. ITAAC 8.1.1.D.1.b states that the EOF is activated within 60 minutes from notification of a Site Area Emergency or higher event classification, with at least minimum staffing.

Operations Support Center

Each Protected Area has an OSC to support each unit, which is separate from the Control Room. (In the NRC guidance documents referenced below, the OSC is referred to as the Operational Support Center.) The OSC provides an area for staging and coordination of shift personnel to support emergency response operations, including first aid, search and rescue, and emergency repair and damage control activities. Disciplines reporting to the OSC include, but are not limited to non-Control Room operating personnel, radiation protection, chemistry, and maintenance personnel. (See also, DCD Subsection 18.8.3.6, "Operations Support Center Mission and Major Tasks.")

The location of the OSC is addressed in Tier 2 departure PTN DEP 18.8-1, which moves the OSC for Units 6 and 7 from the AP1000 DCD ALARA (as low as reasonably achievable) Briefing Room and OSC (Room 40318) to a single OSC—supporting Units 6 and 7—in the Maintenance Shop/Office Building inside the Protected Area. The OSC location is described in Section 4, "Emergency Facilities and Equipment," of COL Plan Annexes 1, 2, and 3, and shown on Annex 2, Figure B1-1, "Unit 6 Facility Layout," and Annex 3, Figure C1-1, "Units 6 and 7 Facility Layout." Room 40318 is renamed the ALARA Briefing Room (see FSAR Section 1.2.3, "Plant Arrangement Description," and FSAR Section 12.3.1.2, "Radiation Zoning and Access Control"). FSAR Figure 1.1-201, "Units 6 and 7 Layout," shows the location of the Maintenance Shop/Office (building number 30), which is north of Units 6 and 7 and near the Security Building. ITAAC 5.1.7 states that there is an OSC located inside the Protected Area, and it is separate from the main control room. If the OSC becomes uninhabitable, the emergency coordinator will designate an alternate location in accordance with EPIPs. COL Plan Appendix 3 lists an EPIP titled "OSC Activation and Operation."

In COLA Part 7, the applicant evaluated PTN DEP 18.8-1 under Section VIII.B.5.b of Appendix D to 10 CFR Part 52, and determined that the departure is for a nonsafety-related system, that the alternate location of the OSC meets applicable requirements, and that relocating the OSC does not impair its function. The staff agrees with the applicant's evaluation, for the reasons described below.

In accordance with 10 CFR 50.47(b)(8), the applicant must provide adequate emergency facilities (including the OSC) to support the emergency response. With regard to the applicant's proposed common OSC location, the staff considered the applicable guidance in NUREG-0696, which states the following in Section 3.0, "Operational Support Center":

> The operational support center (OSC) is an onsite area separate from the control room and the TSC where licensee operations support personnel will assemble in an emergency. The OSC shall:
>
> - Provide a location where plant logistic support can be coordinated during an emergency, and
>
> - Restrict control room access to those support personnel specifically requested by the shift supervisor

NUREG-0696 indicates in part that no specific habitability criteria are established for the OSC, and the OSC should have direct communications with the control room and with the TSC so that the personnel reporting to the OSC can be assigned to duties in support of emergency operations.

In addition, the staff considered the applicable guidance in Supplement 1 to NUREG-0737, which indicates in Section 8.3, "Operational Support Center (OSC)," that, when activated, the OSC will be the onsite area separate from the control room where pre-designated operations support personnel will assemble, and that a pre-designated licensee official should be responsible for coordinating and assigning the personnel to tasks designated by control room, TSC, and EOF personnel. The OSC will be located onsite to serve as an assembly point for support personnel and to facilitate performance of support functions and tasks, and capable of reliable voice communications with the control room, TSC, and EOF.

Section 4.1 of COL Plan Annexes 2 and 3 states that the OSC manager is responsible for managing OSC activities including personnel accountability of anyone dispatched from the OSC, radiological exposure control for individuals within the OSC, and mobilizing individuals on the emergency roster needed to fill OSC and other support positions. COL Plan Section B.5 states that the OSC manager supervises the activities of OSC personnel and is responsible for directing OSC operations—including assigning tasks to designated OSC leads, maintaining OSC resources, and maintaining accountability of OSC personnel.

COL Plan Section H.10, "OSC Capabilities," identifies various equipment and supplies that are stored in or near the OSC and available for damage control use, as necessary. This includes first aid and medical treatment equipment and supplies, portable lighting and communications equipment, protective clothing, respiratory protection gear, KI, and other health physics equipment and supplies. Damage control team equipment is available in the maintenance shops near the OSC. Additional supplies can be obtained from other unaffected units and through corporate resources.

COL Plan Table H-1, "Typical Emergency Supplies Available for Emergency Response Facilities," lists typical equipment and supplies available to emergency response personnel. Emergency equipment is listed, maintained, and inspected in accordance with radiation protection procedures. Specific equipment and supplies for each facility are described in emergency plan administrative procedures and other plant procedures. COL Plan Appendix 3

lists an administrative procedure titled “Emergency Response Facilities and Equipment.” Emergency equipment and supplies are addressed further in COL Plan Sections J and K (see SER Sections 13.3.4.10 and 13.3.4.11, respectively), and in Section 4 of COLA Plan Annexes 1, 2, and 3.

COL Plan Section J.6 states that Turkey Point maintains an inventory of adequate supplies of radiation protection equipment for personnel remaining in (or entering) the Protected Area or emergency response facilities, including respiratory protection equipment, protective clothing, and KI. COL Plan Section F.1 describes dedicated phone lines for communications between the affected unit’s Control Room, TSC, and OSC to coordinate dispatch of teams from the OSC. ITAAC 5.1.3 and ITAAC 5.1.8 address the OSC communications equipment and capabilities. In addition, ITAAC 8.1.1.D.1 addresses the activation and functional capabilities (i.e., adequacy of equipment, security provisions, and habitability precautions) of the OSC during the full participation exercise.

The staff finds that the relocation of the units’ OSC to a common OSC in the Maintenance Shop/Office Building is acceptable because the common OSC provides an area that meets the applicable regulatory guidance in NUREG-0696 and Supplement 1 to NUREG-0737; and as such, will allow the OSC to adequately support its intended emergency response functions. From a support and functional standpoint, the staff finds that the applicant’s proposed OSC location is acceptable, subject to a demonstration of adequacy during the full participation exercise (addressed in ITAAC 8.1). Therefore, the staff concludes that PTN DEP 18.8-1 is acceptable.

In its Interim Finding Report for Reasonable Assurance, FEMA found that the offsite emergency plans are adequate for this planning standard and associated evaluation criteria in NUREG-0654.

In light of the above, the staff finds that the applicant has described, provided, and maintains adequate emergency facilities and equipment to support the emergency response, including a licensee onsite OSC and TSC, and an EOF from which effective direction can be given and effective control can be exercised during an emergency. This includes onsite and offsite radiological and meteorological monitoring systems. The applicant has also described provisions to be employed to ensure that the emergency plan, its implementing procedures, and emergency equipment and supplies are maintained up to date. In addition, the applicant has provided for an ERDS data link between the onsite computer system and the NRC Operations Center.

Conclusion

The staff concludes that the information provided in the COLA is consistent with the guidelines in NUREG-0654, Planning Standard H. Therefore, the staff finds the information acceptable and meets the relevant requirements of 10 CFR 50.47(b)(8) and 10 CFR Part 50, Appendix E, Sections IV.E.8, IV.G, and VI.1, insofar as the information describes the essential elements of advanced planning and the provisions made to cope with emergency situations.

13.3.4.9 Accident Assessment

As reflected in NUREG-0654, Planning Standard I, “Accident Assessment,” 10 CFR 50.47(b)(9) requires the use of adequate methods, systems, and equipment for assessing and monitoring the actual or potential offsite consequences of a radiological emergency condition. In addition,

10 CFR Part 50, Appendix E, Section IV.A.4 requires the identification of persons within the licensee organization who will be responsible for making offsite dose projections, and a description of how these projections will be made and the results transmitted to State and local authorities, NRC, and other appropriate governmental entities. Regulations in 10 CFR Part 50, Appendix E, Section IV.B, require a description of the means to be used for determining the magnitude of, and for continually assessing the impact of, the release of radioactive materials. Regulations in 10 CFR Part 50, Appendix E, Section IV.E.2, require that adequate provisions shall be made and described for emergency facilities and equipment, including equipment for determining the magnitude of, and for continuously assessing the effect of, the release of radioactive materials to the environment.

In COL Plan Section I, "Accident Assessment," the applicant described the methods, systems, and equipment available for assessing and monitoring actual or potential consequences of a radiological emergency. The staff reviewed this section, as well as other relevant portions of the application, to determine whether the application conforms to the applicable guidance and complies with the pertinent regulatory requirements. The staff's primary focus was to evaluate the emergency plan against NUREG-0654, Planning Standard I, "Accident Assessment." Planning Standard I provides the detailed evaluation criteria that the staff should consider to determine whether the emergency plan meets the applicable regulatory requirements in 10 CFR 50.47(b)(9).

COL Plan Section I.1, "Plant Parameters and Corresponding Emergency Classification," states that plant system and effluent parameter values are used in determining accident severity and subsequent emergency classification. An emergency condition can be the result of just one parameter or condition change, or a combination of several. The specific symptoms, parameter values, or events for each level of emergency classification are detailed in EPIPs. Specific plant system and effluent parameters that characterize a classifiable event (EALs) are presented in each unit annex (EALs are addressed in COL Plan Section D, and discussed above in SER Section 13.3.4.4).

To adequately assess the emergency condition, each facility has the necessary equipment and instrumentation installed to make available essential plant information on a continuous basis. Evaluation of plant conditions is accomplished through the monitoring of plant parameters from indication in the Control Room and within the plant. Some of the more important plant parameters to be monitored in the Control Room are assembled into a single display location, which is called the SPDS. The SPDS monitors parameters relative to the plant design, such as reactor coolant system pressure, reactor or pressurizer water level, containment pressure, reactor power, safety system status, containment radiation level, and effluent monitor readings. Resources available to provide initial and continuing information for accident assessment throughout the course of an event include plant parameter display systems, liquid and gaseous sampling system, and area, process and accident RMSs.

COL Plan Appendix 3 identifies EPIPs titled "Dose Assessment Methodology," "Core Damage Assessment," and "Offsite Radiological Monitoring." Instrumentation and equipment capabilities are described in COL Plan Section H, and discussed above in SER Section 13.3.4.8. Post-accident monitoring and sampling systems, including capabilities, are also addressed in AP1000 DCD Tier 2 Chapter 7, "Instrumentation and Controls," and Section 9.3.3.1.2.2, "Post-Accident Sampling." ITAAC 6.1 addresses the availability of the means to provide initial and continuing radiological assessment through displays of instrumentation indicators in the main control room, TSC, and EOF during the course of drills or exercises.

COL Plan Section I.3, Source Term Determination," describes the methods used to estimate the amount or type of core damage occurring under accident conditions, which include containment radiation monitors, core temperatures and coverage, source range monitor readings, containment hydrogen concentration, and sample analyses. Core damage considerations are used as the bases for several of the EAL initiating conditions, and as the threshold for the declaration of a General Emergency. ITAAC 6.2 addresses the use of EPIPs to calculate the source terms and the magnitude of the release of postulated accident scenario releases.

COL Plan Section I.4, "Effluent Monitor Data and Dose Projection," states that during an accident, the plant parameter display system and personal computers will provide the ERO with the timely information required to make decisions. Radiological and meteorological instrumentation readings are used to project dose rates at predetermined distances from the plant, and to determine the integrated dose received. Dose assessment methods used by the ERO to project offsite doses include monitored release points, containment failure, or leak rates, release point samples, and field monitoring team data. Computer applications are used to provide dose calculations to evaluate dose against the EPA protective action guides (PAGs). These evaluations are used to determine the necessity for offsite PARs. ITAAC 6.3 demonstrates that the means exist to continuously assess the impact of the release of radioactive materials to the environment, accounting for the relationship between effluent monitor readings, and onsite and offsite exposures and contamination for various meteorological conditions under drill conditions.

Meteorological data is collected at the Turkey Point 10-meter tower, the South Dade Site 60-meter tower, or obtained directly from the NWS in Miami. COL Plan Table I-1 summarizes the available key meteorological parameters (e.g., wind speed and wind direction) that are available at each unit's Control Room, TSC, and EOF via the plant monitoring/information system. COL Plan Table I-2 summarizes meteorological data that represents primary and backup sources. Meteorological data is provided to the State through initial and follow-up notifications, and response to direct inquiries from DEM and DOH-BRC. The EOF and NRC can receive timely meteorological information through the TSC (upon request), from direct data logger and fiber optic modem connection, or the plant monitoring/information system. ITAAC 6.4 states that meteorological data exists at the EOF, TSC, main control room, offsite NRC operations center, and the State of Florida; and that this data is in the format needed for the appropriate EPIPs.

Dose projections can be made during a release through use of actual sample data when effluent monitors are off-scale or inoperative, or a release occurs by an unmonitored flow path. In the absence of effluent sample data, a dose projection can be performed by specifying the accident category as a default, which defines the mix, total curies, and release pathway(s). The total number of curies from a default mix for each isotope is used to provide an upper bound for release concentration, and hence, an upper bound for the dose rate and dose to the public. ITAAC 6.5 states that the release rate and projected doses can be determined with off-scale or inoperable instrumentation during training or a drill.

Turkey Point maintains the ability to take offsite soil, water, vegetation, and air samples, and to directly measure gamma dose rates in the event of an airborne or liquid release. The environmental monitoring equipment includes portable survey, counting, and air sampling instrumentation and other radiological monitoring equipment and supplies to be used by the field monitoring teams. Samples are taken at predetermined locations (illustrated in COL Plan Figure I-1), as well as those specified both during and after a release. Environmental measurements are used as an aid in the determination and assessment of protective and

recovery actions for the general public. (See COL Plan Sections J and M, which are addressed in SER Sections 13.3.4.10 and 13.3.4.13, respectively.) ITAAC 6.6 states that the field monitoring teams were dispatched and demonstrated ability to locate and monitor a radiological release within the plume exposure EPZ.

Field monitoring teams are dispatched to perform field monitoring in the 10-mi EPZ during conditions that may involve significant releases of radioactive materials from the plant. These teams are trained, and have the capability, to conduct field surveys and take offsite air, soil, water, and vegetation samples. The State of Florida DOH-BRC has the ability to dispatch their own field monitoring teams to track the airborne radioactive plume, and can be used to perform collection, shipment, and analysis of environmental sample media. DOE offsite monitoring assistance is also available, if needed.

EPIPs provide guidance for performance of the field monitoring team activities. Each team is provided with air sampling equipment, personnel dosimetry, radiological survey instruments, procedures, communications equipment, and supplies to facilitate performance of radiation, surface contamination, and airborne radioactivity monitoring. Radiological survey and sample data (e.g., soil, water, and vegetation sampling)—transmitted to the emergency facilities—is used to define affected area boundaries, verify or modify dose projections and PARs, and assess the actual magnitude, extent, and significance of a liquid or gaseous release. The teams are available onsite on a 24-hour basis, and are dispatched into the surrounding area when a release is ongoing or is expected to occur. A minimum of two offsite field monitoring teams are notified and activated at an Alert or higher classification. ITAAC 6.7 addresses the activation of the field monitoring teams, including the ability to make rapid assessments of actual or potential magnitude and locations of any radiological hazards through simulated liquid or gaseous release pathways. Information from FPL offsite radiological assessment is exchanged and coordinated with the State. COL Plan Section B addresses ERO job description, including those associated with licensee radiological accident assessment and dose projection, and offsite field monitoring teams.

Field monitoring equipment has the capability to detect and measure airborne radioiodine concentrations as low as $1x10^{-7}$ microcuries per cubic centimeter (µCi/cc) in the field. Interference from the presence of noble gas and background radiation will be minimized by ensuring that monitoring teams move to areas of low background before analyzing the sample cartridge. The collected air sample is measured by hand-held survey meter as an initial check of the projection derived from plant data to determine if significant quantities of elemental iodine have actually been released. ITAAC 6.8 states that a field monitoring team was dispatched during a radiological release scenario and demonstrated the use of sampling and detection equipment for air concentrations in the plume exposure EPZ, as low as 10^{-7} µCi/cc. Procedures exist for the correlation of air activity levels to dose rate, and provide a method to estimate the integrated dose from the projected and actual dose rates and for the comparison of these estimates with the EPA PAGs. ITAAC 6.9 states that the means are available to estimate integrated dose from the dose assessment program and the field monitoring team reading during a radioactive release scenario, and the results were compared with the EPA PAGs.

In its Interim Finding Report for Reasonable Assurance, FEMA found that the offsite emergency plans are adequate for this planning standard and associated evaluation criteria in NUREG-0654.

In view of the above, the staff finds that the applicant has described and provided adequate facilities, systems, equipment, and means for assessing and monitoring the actual or potential

offsite consequences of a radiological emergency condition, including determining the magnitude of, and for continually assessing the impact of, the release of radioactive materials. The applicant has also described the capability and resources for field monitoring within the 10-mi EPZ, and has the methods, equipment, and expertise to rapidly assess actual or potential radiological hazards. This includes the capability to detect and measure radioiodine airborne concentrations within the 10-mi EPZ as low as 10^{-7} µCi/cc under field conditions, and to relate the various measured parameters to dose rates for key isotopes and gross radioactivity measurements. In addition, the applicant has identified, by position and function to be performed, persons within the licensee organization who will be responsible for making offsite dose projections, and has described how these projections will be made and the results transmitted to State and local authorities, NRC, and other appropriate governmental entities.

Conclusion

The staff concludes that the information provided in the COLA is consistent with the guidelines in NUREG-0654, Planning Standard I. Therefore, the staff finds the information acceptable and meets the relevant requirements of 10 CFR 50.47(b)(9) and 10 CFR Part 50, Appendix E, Sections IV.A.4, IV.B, and IV.E.2, insofar as the information describes the essential elements of advanced planning and the provisions made to cope with emergency situations.

13.3.4.10 *Protective Response*

As reflected in NUREG-0654, Planning Standard J, “Protective Response,” 10 CFR 50.47(b)(10) requires that a range of protective actions have been developed for the (10-mi) plume exposure pathway EPZ for emergency workers and the public. In developing this range of actions, consideration has been given to evacuation, sheltering, and as a supplement to these, the prophylactic use of KI. ETEs have been developed by applicants and licensees, and licensees shall update the ETEs on a periodic basis. Guidelines for the choice of protective actions during an emergency, consistent with Federal guidance, are developed and in place, and protective actions for the 80-km (50-mi) ingestion exposure pathway EPZ appropriate to the locale have been developed. In addition, 10 CFR 50.47(c)(2) and 10 CFR Part 50, Appendix E, Section I require that the size and configuration of the EPZs 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. Regulations in 10 CFR Part 50, Appendix E, Section IV.I, require the development of a range of protective actions to protect onsite personnel during hostile action to ensure the continued ability of the licensee to safely shut down the reactor and perform the functions of the emergency plan.

In COL Plan Section J, “Protective Response,” the applicant described the range of protective actions that have been developed for Turkey Point emergency workers and the general public in the 10-mi EPZ. The staff reviewed this section, as well as other relevant portions of the application, to determine whether the application conforms to the applicable guidance and complies with the pertinent regulatory requirements. The staff’s primary focus was to evaluate the emergency plan against NUREG-0654, Planning Standard J, “Protective Response.” Planning Standard J provides the detailed evaluation criteria that the staff should consider to determine whether the emergency plan meets the applicable regulatory requirements in 10 CFR 50.47(b)(10).

Protective response consists of emergency actions taken during or after an emergency situation, which are intended to minimize or eliminate hazards to the health and safety of the

public and plant personnel. FPL is responsible for onsite actions, and the responsibility for offsite actions rests with the State, counties, and other offsite response agencies. Detailed information describing onsite and offsite protective response actions is located in EPIPs and the State and county emergency plans.

The same EPZs for Turkey Point Units 3 and 4 are used for the new Units 6 and 7, which are based on the requirements in 10 CFR Part 50, Appendix E. As such, the size and configuration of the existing EPZs for Units 3 and 4 were 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. The staff finds that it is appropriate (and necessary) for Turkey Point Units 6 and 7 to use the existing Units 3 and 4 EPZs, because the size and configuration of the EPZs are dependent upon the local (offsite) emergency response needs, and not on the number of reactors on the combined and contiguous sites for Units 3 and 4 and Units 6 and 7.

COL Plan Part 1 Section B.2 describes the plume exposure pathway EPZ and the ingestion exposure pathway EPZ, which are illustrated in COL Plan Figures 1-3 and 1-4, respectively. The 10-mi and 50-mi EPZs are also shown in COLA FSAR Figures 2.1-202 and 2.1-201, respectively. The EPZs are the areas for which planning is performed to assure that prompt effective actions can be taken to protect the public in the event of an accident. The plume exposure pathway (10-mi) EPZ for Turkey Point is an area surrounding the plant with Unit 3 at the center and a radius of approximately 16 km (10 mi), including portions of Miami-Dade and Monroe Counties in Florida. (COL Plan Section J.8 and Appendix 5 address the ETE Report and evacuation of the 10-mi EPZ, which is discussed in SER Section 13.3.4.17.) The principal exposure sources from this pathway are whole body external exposure to beta and gamma radiation from the plume and deposited material, and internal exposure resulting from the inhalation of radioactive material in the plume. The time of potential exposure can range from hours to days.

The ingestion exposure pathway (50-mi) EPZ is an area surrounding the plant with Unit 3 as the center and a radius of approximately 50 mi. The principal exposure sources are from the ingestion of contaminated agricultural products such as milk, fresh fruits and vegetables, aquatic foods, or from contaminated surface water sources. The planning effort for this pathway involves the identification of potentially contaminated food and water, and associated control measures that will be used to minimize danger to the public. Ingestion pathway exposures in general would represent a problem in the days or weeks following an accident, although some early protective actions to minimize subsequent contamination of milk are provided in the State plans.

In COL Plan Section J.1, “Notification of Onsite Personnel,” the applicant stated that methods are established for notifying personnel within the Protected Areas and Owner-Controlled Area for all emergency classifications. The primary means of notification within the Protected Areas is the plant public address system and evacuation alarms, as described in COL Plan Section F and discussed in SER Section 13.3.4.6. Announcements include the emergency classification and response actions to be taken by personnel onsite, and are made within 15 minutes of the emergency declaration. Provisions are made to alert personnel in high noise areas and outbuildings within the Protected Areas, and individuals located outside the Protected Areas—but inside the Owner-Controlled Area—are informed via public address system announcements, alarms, and by the Security Force within approximately 30 minutes of the emergency declaration. Information regarding the meaning of the various warning systems and the appropriate response actions is provided via plant training programs, visitor orientation, escort

instructions, posted instructions, or within the content of audible messages. Escorts provide instructions to visitors who may not be trained to take specific emergency response actions. (Notification methods and procedures are addressed in COL Plan Section E, and discussed above in SER Section 13.3.4.5.) (OCA) ITAAC 7.1 states that the means exist to successfully warn and advise various onsite individuals, including those in the Owner-Controlled Area and immediate vicinity.

If a local area evacuation is warranted, personnel will be directed to assemble at a location designated by the emergency coordinator. FPL establishes and maintains preplanned primary and alternate site evacuation routes and assembly areas, which are illustrated in COL Plan Figure J-3. A secondary route is provided for evacuation in the event the primary route is rendered impassable because of radiological or weather conditions, or other impediments. The directions of travel and offsite assembly area(s) are determined by the emergency coordinator based on current meteorological and emergency conditions. Section 5, "Emergency Measures," of Annexes 1, 2, and 3 describes the assembly areas and evacuation routes associated with the respective Turkey Point reactor units.

If an Owner-Controlled Area (OCA) evacuation is warranted, nonessential personnel, including those in the Protected Areas, are directed to exit the site via the primary or alternate evacuation route and reassemble at an offsite location or proceed to their homes. Visitors to the plant will assemble with, and follow the instructions of, their escorts. Affected individuals evacuate the site via personnel vehicles, and personnel without transportation will be identified and provided transportation, as necessary. Security is responsible for traffic direction and control, including special provisions under adverse conditions (e.g., weather-related, radiological, or traffic density conditions). COL Plan Appendix 3 lists an EPIP titled "Evacuation and Accountability."

The emergency coordinator directs contamination monitoring of personnel, vehicles, and personal property if conditions warrant. Personnel evacuating the site will be monitored for contamination using portal monitors as they exit the Protected Areas, or sent to offsite assembly areas and monitored with portable friskers. If there is no release of radioactive materials within the affected unit, limited monitoring may be used to speed the evacuation process. Personnel and vehicle monitoring and decontamination will be conducted in accordance with radiation protection procedures and EPIPs. COL Plan Appendix 3 lists an EPIP titled "Offsite Radiological Monitoring."

COL Plan Section J.4, "Protective Actions for Onsite Personnel," describes onsite protective actions and evacuation of onsite personnel for the various emergency classes, including personnel not needed to shut down the fossil units at Turkey Point. Evacuation is the primary protective action anticipated for onsite personnel within the Protected Area who are not filling ERO positions. If conditions warrant, the Owner-Controlled Area outside the Protected Area is evacuated of all non-FPL personnel at an Alert or higher emergency classification. As conditions warrant, the emergency coordinator may delay, postpone, or make special arrangements on the evacuation. Special circumstances can include radiological conditions, security events, certain plant conditions, and onsite hazards. In the event that evacuation is not the best protective action, onsite personnel will be directed to take other protective actions, such as sheltering for extremely inclement weather or during an ongoing radiological release, or taking immediate cover for security events when evacuation will place personnel in jeopardy.

In RAI 5681, Question 13.03-14, the staff requested additional information regarding the applicant's response to a hostile action event (including consideration of BL 2005-02), concerning (1) the availability of an alternative facility to support rapid response, (2) specific

provisions to protect onsite emergency responders and personnel, and (3) how NRC notification would occur. In an October 31, 2011, response to RAI 5681, Question 13.03-14 (ADAMS Accession No. ML11306A140), the applicant stated that FPL has designated the EOF as an alternative facility to support the ERO augmentation during hostile action events. In addition, the EOF also functions as a backup TSC and backup OSC staging areas in the event of an emergency that limits access to the site during a hostile action. FPL will develop implementing procedures (see ITAAC 9.1) to address applicable portions of BL 2005-02 by providing a strategy and direction to protect emergency responders and personnel during a security-based event, including an emergency resulting from a hostile action event. See also, COLA Part 9 (Mitigative Strategies Table),[15] Section 5.2 ("Assembly Areas") in each annex of the COLA Plan, and COLA Plan Section J.5 ("Accountability"). Finally, NRC notification—within about 15 minutes after recognition of a security event—will be addressed in implementing procedures. The staff finds this response acceptable because it conforms to the guidance in BL 2005-02 and NUREG-0800, and therefore addresses the requirement in 10 CFR Part 50, Appendix E, Section IV.I. Therefore, the staff considers RAI 5681, Question 13.03-14, resolved.

At the declaration of an Owner-Controlled Area evacuation, all nonessential personnel are evacuated. All individuals in the Protected Areas are accounted for, and those who have not been accounted for are identified within 30 minutes of the initiation of the evacuation. Upon notification that personnel are missing, the emergency coordinator initiates search and rescue operations. Accountability is coordinated by personnel in the TSC, and results are forwarded to the emergency coordinator. Once established, accountability within the Protected Areas is maintained throughout the event, unless specifically terminated by the emergency coordinator. Accountability of individuals within the Owner-Controlled Area, but outside the Protected Area, is not required. The movement of personnel for the purposes of accountability may be delayed if their health and safety could be in jeopardy, such as during severe weather or for security concerns. ITAAC 8.1.1.C.4 states that during the full participation exercise, FPL will demonstrate the ability to perform assembly and accountability for all personnel in the Protected Area within 30 minutes of an emergency calling for Protected Area assembly and accountability.

COL Plan Section J.6 indicates that FPL maintains an inventory of adequate supplies of radiation protection equipment for personnel remaining in (or entering) the Protected Area or emergency response facilities, including respiratory protection equipment, protective clothing, and KI. COL Plan Table H-1 lists typical emergency equipment and supplies available to emergency response personnel. Emergency equipment is listed, maintained, and inspected in accordance with radiation protection procedures. Specific equipment and supplies for each facility are described in emergency plan administrative procedures and other plant procedures. COL Plan Appendix 3 lists an administrative procedure titled "Emergency Response Facilities and Equipment." Section J.6 also describes the use of respirators, protective clothing, and KI. Emergency equipment and supplies are addressed further in COL Plan Sections H and K, and in Section 4 of COLA Plan Annexes 1, 2, and 3.

In COL Plan Section J.7, "Mechanism for Implementing Protective Action Recommendations," the applicant stated that plant conditions, projected dose and dose rates, or field monitoring data are evaluated to develop PARs for the purpose of preventing or minimizing exposure to the general public. (Accident assessment is addressed in COL Plan Section I, and discussed in SER Section 13.3.4.10.) PARs are approved by the emergency coordinator and provided to the offsite agencies responsible for implementing protective actions for the general public. In an

[15] COLA Part 9, "Withheld Information," includes information designated as Security-Related Information, and is withheld from public disclosure under 10 CFR 2.390, "Public Inspections, Exemptions, Requests for Withholding."

emergency that warrants immediate protective actions be taken before activation of the offsite emergency facilities, PARs are provided directly to the State and county 24-hour warning points. COL Plan Figure J-2 provides guidance for plant personnel to determine PARs based on plant conditions and offsite dose estimates. COL Plan Appendix 3 lists an EPIP titled "Protective Action Recommendations."

As described in EPIPs, FPL recommends protective actions to the State of Florida and Counties of Miami-Dade and Monroe, which are responsible for implementing protective measures based on PAGs for the offsite population at risk. ITAAC 2.3 states that notification and clear instructions to the public are accomplished in accordance with the emergency plan requirements. COL Plan Appendix 5 references the ETE Report, which the applicant provided as COLA Supplemental Information 1, "Turkey Point Nuclear Power Plant Evacuation Time Estimate." Evacuation time estimates provide FPL and State and local governments with site-specific information needed for protective action decisionmaking. If plant conditions are stable and offsite radiological conditions do not pose a danger to public health and safety, FPL may discuss a return to evacuated areas with the State. The State authorities are then responsible for recommending whether return is advisable or not, and transmitting this recommendation to the general public. (Recovery and reentry is addressed in COL Plan Section M, and discussed below in SER Section 13.3.4.13.) Finally, the State is responsible for specifying protective measures for the 50-mi EPZ, including methods for protecting the public from consumption of contaminated water and foodstuffs.

In its Interim Finding Report for Reasonable Assurance, FEMA found that the offsite emergency plans are adequate for this planning standard and associated evaluation criteria in NUREG-0654.

In view of the above, the staff finds that the applicant has developed a range of protective actions for the 10-mi EPZ for emergency workers and the public, including consideration of evacuation, sheltering, and the prophylactic use of KI. The applicant has developed guidelines for the choice of protective actions during an emergency that are consistent with Federal guidance, including protective actions for the 50-mi EPZ that are appropriate to the locale. The size and configuration of the EPZs have been 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. In addition, the applicant has developed a range of protective actions to protect onsite personnel during hostile action. Development of ETEs is addressed below in SER Section 13.3.4.17.

Conclusion

The staff concludes that the information provided in the COLA is consistent with the guidelines in NUREG-0654, Planning Standard J. Therefore, the staff finds the information acceptable and meets the relevant requirements of 10 CFR 50.47(b)(10), 10 CFR 50.47(c)(2), and 10 CFR Part 50, Appendix E, Sections I and IV.I, insofar as the information describes the essential elements of advanced planning and the provisions made to cope with emergency situations.

13.3.4.11 *Radiological Exposure Control*

As reflected in NUREG-0654, Planning Standard K, "Radiological Exposure Control," 10 CFR 50.47(b)(11) requires that the means for controlling radiological exposures in an emergency be established for emergency workers. The means for controlling radiological

exposures shall include exposure guidelines consistent with EPA "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents," EPA 400-R-92-001, May 1992 (EPA-400). In addition, 10 CFR Part 50, Appendix E, Section IV.E.3 requires that adequate provisions shall be made and described for emergency facilities and equipment, including facilities and supplies at the site for decontamination of onsite individuals.

In COL Plan Section K, "Radiological Exposure Control," the applicant described the means for controlling emergency worker radiological exposures during an emergency, including measures to provide assistance to persons injured or exposed to radioactive materials. The staff reviewed this section, as well as other relevant portions of the application, to determine whether the application conforms to the applicable guidance and complies with the pertinent regulatory requirements. The staff's primary focus was to evaluate the emergency plan against NUREG-0654, Planning Standard K, "Radiological Exposure Control." Planning Standard K provides the detailed evaluation criteria that the staff should consider to determine whether the emergency plan meets the applicable regulatory requirements in 10 CFR 50.47(b)(11).

COL Plan Section K.1, "Emergency Exposure Guidelines," states that in an emergency situation, all reasonable measures will be made to maintain the radiation exposure within the applicable limits specified in 10 CFR Part 20, "Standards for Protection Against Radiation," for emergency response personnel providing medical treatment, first aid and rescue, corrective and assessment actions, and decontamination. Conditions may warrant entry into high-radiation areas, resulting in exposures in excess of the regulatory limits, and the emergency coordinator is assigned the nondelegable responsibility for authorizing personnel exposures under emergency conditions, consistent with EPA-400. The emergency worker dose guidelines are shown in COL Plan Table K-1, "Emergency Exposure Guidelines," and are consistent with EPA-400 Table 2-2, "Guidance on Dose Limits for Workers Performing Emergency Services."

COL Plan Section K.2, "Emergency Radiation Protection Program," states that the radiation protection manager is responsible for implementing radiation protection actions during an emergency, and describes the relevant guidelines. FPL maintains a site personnel radiation dosimetry program that includes the capability for determining external and internal doses—consistent with 10 CFR Part 20—on a 24-hour-per-day basis. All emergency response personnel under the authority of FPL who potentially will be exposed to radiation in the course of their duties will be monitored by the plant radiation exposure monitoring program. Emergency workers will receive thermoluminescent dosimeter (TLD) badges and personal self-reading dosimeters capable of measuring expected exposures on a real time basis. Emergency worker dose records are maintained by the radiation protection manager, in accordance with the emergency and radiological protection procedures. COL Plan Appendix 3 identifies two implementing procedures—titled "OSC Activation and Operation," and "EOF Activation and Operation"—that are applicable to personnel monitoring and maintenance of emergency worker dose records. ITAAC 8.1.1.E.2 states that during the full participation exercise, FPL will demonstrate the ability to continuously monitor and control radiation exposure to emergency workers.

COL Plan Section K.5, "Contamination and Decontamination," describes contamination control measures and decontamination areas. During emergency conditions, normal plant contamination control criteria will be adhered to as much as possible. The limits may be modified by Radiation Protection, in accordance with radiation protection procedures, should conditions warrant. Contaminated personnel will normally be attended to at decontamination areas located onsite, which include decontamination showers, equipment, and supplies.

Personnel with injuries involving radiation or radioactive contamination will be handled by an offsite medical facility, as described in COL Plan Section L.

Controls are established and maintained 24 hours per day to contain the spread of loose surface radioactive contamination. If personnel are contaminated above acceptable levels, they will be decontaminated in accordance with radiation protection procedures. If normal decontamination procedures do not reduce personnel contamination to acceptable levels, the contaminated individuals will be referred to a competent medical authority. Supplies, instruments, and equipment will be monitored and contaminated materials will be disposed of as radwaste. Contaminated vehicles will be decontaminated before being released, and ambulances will be monitored and decontaminated before departing the medical facility by Turkey Point personnel. Measures will be taken to control onsite access to potentially contaminated food and potable water supplies. Under emergency conditions with uncontrolled releases, eating, drinking and chewing are prohibited in all Turkey Point emergency response facilities until habitability surveys indicate these activities are permissible. Contamination control criteria for returning areas and items to normal use are contained in the radiation protection procedures.

In RAI 5681, Question 13.03-10 (K-2), the staff requested additional information from the applicant regarding the action levels for determining the need for decontamination. In a September 30, 2011, response to RAI 5681, Question 13.03-10 (K-2), the applicant stated that Turkey Point Units 6 and 7 radiological procedure 0-HPS-021.3, “Identification, Survey and Release of Material for Unrestricted Use,” sets a standard of no detectable radioactivity for releasing material from a radiologically controlled area. In addition, this is the standard that is currently used at Units 3 and 4, and will be used for Units 6 and 7. The staff finds this response acceptable because it is consistent with NUREG-0654, and, therefore, considers RAI 5681, Question 13.03-10 (K-2), resolved.

Efforts will be made to prevent contaminated vehicles operated by nonessential personnel to depart the Turkey Point site, and alternate forms of transportation may be made available to reduce the possibilities of transporting contamination offsite with suspected contaminated vehicles. As conditions warrant, radiological protection personnel at the assembly area monitor evacuees and determine the need for decontamination. Provisions for extra clothing are made and suitable decontaminates are available for the expected types of contamination.

In its Interim Finding Report for Reasonable Assurance, FEMA found that the offsite emergency plans are adequate for this planning standard and associated evaluation criteria in NUREG-0654.

In view of the above, the staff finds that the applicant has established the means for controlling radiological exposures for emergency workers, consistent with the exposure guidelines in EPA-400. In addition, the applicant has made and described adequate provisions for emergency facilities and equipment, including facilities and supplies for monitoring and decontamination of onsite and relocated personnel, vehicles, and other affected materials, and has established appropriate contamination control measures.

Conclusion

The staff concludes that the information provided in the COLA is consistent with the guidelines in NUREG-0654, Planning Standard K. Therefore, the staff finds the information acceptable and meets the relevant requirements of 10 CFR 50.47(b)(11) and 10 CFR Part 50, Appendix E,

Section IV.E.3, insofar as the information describes the essential elements of advanced planning and the provisions made to cope with emergency situations.

13.3.4.12 *Medical and Public Health Support*

As reflected in NUREG-0654, Planning Standard L, "Medical and Public Health Support," 10 CFR 50.47(b)(12) requires that arrangements be made for medical services for contaminated injured individuals. In addition, 10 CFR Part 50, Appendix E, Section IV.E requires facilities and medical supplies at the site for appropriate emergency first aid treatment, and arrangements for medical service providers qualified to handle radiation emergencies onsite. Arrangements are also required for transportation of contaminated injured individuals from the site to specifically identified treatment facilities outside the site boundary.

In COL Plan Section L, "Medical and Public Health Support," the applicant described the arrangements for medical services for contaminated injured personnel at the Turkey Point site. The staff reviewed this section, as well as other relevant portions of the application, to determine whether the application conforms to the applicable guidance and complies with the pertinent regulatory requirements. In this evaluation, the staff's primary focus was to evaluate the emergency plan against NUREG-0654, Planning Standard L, "Medical and Public Health Support." Planning Standard L provides the detailed evaluation criteria that the staff should consider to determine whether the emergency plan meets the applicable regulatory requirements in 10 CFR 50.47(b)(12).

COL Plan Section L.1, "Offsite Hospital and Medical Services," describes arrangements for medical treatment of Turkey Point personnel who may have injuries complicated by the presence of radioactive contamination or overexposure to radiation. Sheridan Emergency Physicians Services of South Dade, at Baptist Hospital of Miami, is available on a 24-hour basis and provides for the immediate availability of fully equipped medical facilities with a staff of physicians and nurses skilled in the treatment of personal injury accompanied by radioactive contamination. Emergency Room Medical Associates, within Mercy Hospital of Miami, is available on a 24-hour basis and also provides for the immediate availability of medical facilities for treatment of personal injury accompanied by radioactive contamination. Letters of agreement with these two organizations are listed in COL Plan Appendix 2, with copies of the letters included in COLA Supplemental Information 4. Turkey Point personnel are available to assist medical personnel with decontamination, radiation exposure, and contamination control.

The site maintains an onsite first aid facility and an emergency vehicle with first aid supplies and equipment necessary for the treatment of contaminated or injured persons. In addition, standard first aid kits are maintained at numerous locations throughout the plant. The First Aid Team, which comprises on-shift personnel who are American Red Cross Multimedia first aid qualified, is dispatched by the Control Room or the OSC (when activated). At least two of these individuals are available on shift at all times to support immediate response in each Protected Area. In addition, FPL may staff their onsite clinic with additional medical support personnel who can aid in the response. Radiation protection personnel at Turkey Point are experienced and trained in the control of radioactive contamination and decontamination activities for injured or ill personnel, and are dispatched to support medical response if there is a possibility of contamination associated with the injury/illness. COL Plan Appendix 3 lists an EPIP titled "Medical Response."

First aid facilities at the site are designed to provide basic first aid to injured or ill personnel before arrival of offsite medical support. Emergency treatment areas, which include medical

equipment and supplies, are in each of the units. In the event of a mass casualty incident, where plant and local response resources are exceeded by the number of casualties, FPL may request additional resources through the State of Florida DEM. Because of the specialized nature of the diagnosis and treatment of radiation injuries, FPL maintains an agreement with the DOE Radiation Emergency Assistance Center/Training Site (REAC/TS) [16] in Oak Ridge, TN. REAC/TS has a radiological emergency response team of physicians, nurses, health physicists, and necessary support personnel on 24-hour call to provide consultative or direct medical or radiological assistance. The letters of agreement with DOE and the National Nuclear Security Administration (Savannah River Site Office) are listed in COL Plan Appendix 2, with a copy of the letters included in COLA Supplemental Information 4.

Arrangements are in place for transport of persons with injuries and/or illness involving radioactivity from the site to Sheridan Emergency Physicians Services of South Dade or to Emergency Room Medical Associates in Miami. FPL maintains an onsite emergency vehicle that is equipped to provide prompt transport of an injured and/or contaminated victim(s) to an offsite medical facility. The Miami-Dade Fire Rescue Department is available 24 hours a day to provide ambulance support if offsite medical transportation is warranted. The letter of agreement between FPL and Miami-Dade Fire Rescue Department is listed in COL Plan Appendix 2, with a copy of the letter included in COLA Supplemental Information 4. In a life-threatening situation, victims can also be transported to a designated hospital by helicopter provided by the U.S. Coast Guard and Miami-Dade Fire Rescue on an as available basis. A qualified radiation protection person shall accompany the ambulance to the hospital upon the determination that the injured or ill person is contaminated, or if the determination cannot be made that the individual is free of surface contamination.

In its Interim Finding Report for Reasonable Assurance, FEMA found that the offsite emergency plans are adequate for this planning standard and associated evaluation criteria in NUREG-0654.

The staff reviewed the certification letters from the medical service providers described above and the additional information provided in COL Plan Section L, as described above. In view of the emergency plan provisions, the staff determines that the applicant has made arrangements for hospital and medical services that have the capability of evaluating radiation exposure and uptake, and that persons providing these services are adequately prepared to handle contaminated individuals. In addition, the applicant has provided for appropriate emergency first aid treatment at the site, including qualified medical personnel to handle radiation emergencies, and arrangements for transporting victims of radiological accidents (i.e., contaminated injured individuals) to offsite medical support facilities.

Conclusion

The staff concludes that the information provided in the COLA is consistent with the guidelines in NUREG-0654, Planning Standard L. Therefore, the staff finds the information acceptable and meets the relevant requirements of 10 CFR 50.47(b)(12) and 10 CFR Part 50, Appendix E,

[16] U.S. Department of Energy REAC/TS staff is available 24 hours a day/seven days a week to deploy and provide emergency medical consultation for incidents involving radiation anywhere in the world. REAC/TS provides direct support for the National Nuclear Security Administration's Office of Emergency Response and the Federal Radiological Monitoring and Assessment Center (FRMAC) (Source: http://orise.orau.gov/reacts/, visited March 25, 2013).

Section IV.E, insofar as the information describes the essential elements of advanced planning and the provisions made to cope with emergency situations.

13.3.4.13 *Recovery and Reentry Planning and Post-Accident Operations*

As reflected in NUREG-0654, Planning Standard M, "Recovery and Reentry Planning and Post-Accident Operations," 10 CFR 50.47(b)(13), as reflected in the Planning Standard M, requires that general plans for recovery and reentry be developed. In addition, 10 CFR Part 50, Appendix E, Section IV.H requires a description of criteria to be used to determine when, following an accident, reentry of the facility would be appropriate or when operation could be resumed.

In COL Plan Section M, "Reentry and Recovery Planning," the applicant described activities for reentry into the areas of the plant that have been evacuated because of an accident, and the recovery organization and its concepts of operation. The staff reviewed this section, as well as other relevant portions, to determine whether the application conforms to the applicable guidance and complies with the pertinent regulatory requirements. The staff's primary focus was to evaluate the emergency plan against NUREG-0654, Planning Standard M. Planning Standard M provides the detailed evaluation criteria that the staff should consider to determine whether the emergency plan meets the applicable regulatory requirements in 10 CFR 50.47(b)(13).

Reentry during the emergency phase of an accident is performed to save a life, control a release of radioactive material, prevent further damage to plant equipment, or restore plant equipment. If necessary, reentry may be performed using emergency exposure limits. During the recovery phase of an accident, normal exposure limits are used. Items considered when planning for reentry include review of available radiation surveillance data to determine plant areas potentially affected by radiation or contamination; review of radiation exposure history of personnel needed to participate in the accident mitigation or recovery operations; determination of the need for additional personnel; review of adequacy of radiation survey instrumentation and equipment; review of nonradiological hazards and required protective measures; preplanning of activities and reentry team briefings; and review of security controls.

The recovery phase is that period when major repairs are being performed to return the plant to an acceptable condition, and the possibility of the emergency condition degrading no longer exists. When the plant has been stabilized, contained, and controlled, the recovery phase may be entered. The emergency plan lists guidelines that will be used to determine when the recovery phase will begin, including determining when to relax protective measures, and include informing the State and county emergency management agencies and the NRC concerning de-escalation of the emergency classification and initiation of the recovery phase. Detailed information describing reentry and recovery activities is contained in the EPIPs. COL Plan Appendix 3 identifies an EPIP titled "Reentry and Recovery."

COL Plan Section M.2, "Recovery Organization," describes the authorities and responsibilities of four key positions, consisting of the recovery manager, recovery coordinator, recovery offsite manager, and FPL public information officer. The recovery manager, with assistance from senior management, will determine the extent of staffing for the recovery organization, and is responsible for directing the activities of the plant recovery organization. This includes ensuring sufficient personnel, equipment, and other resources are available to support recovery; directing the development of a recovery plan and procedures; deactivating any of the plant ERO that was retained to aid in recovery; coordinating the integration of available Federal and State

assistance into onsite recovery activities; and determining when the recovery phase is terminated.

The recovery coordinator reports to the recovery manager, and is responsible for coordinating the development and implementation of the recovery plan and procedures, directing all onsite activities, and designating other plant recovery positions needed to support onsite recovery activities. The recovery offsite manager reports to the recovery manager, and is responsible for providing liaison with offsite agencies and coordinating plant assistance for offsite recovery activities, coordinating plant ingestion exposure pathway (50-mi) EPZ sampling activities, developing an offsite accident analysis report and radiological release report, and designating other plant recovery positions necessary to support offsite recovery activities. The FPL public information officer reports to the recovery manager, and is the official spokesperson to the press on all matters relating to the accident or recovery. This includes coordinating with all public information groups—including media monitoring and rumor control—and determining what public information portions of the ERO will remain activated.

When the decision is made to enter the recovery phase, all members of the ERO are informed of the change. All plant personnel are instructed on the recovery organization and their responsibilities associated with the recovery effort. The recovery manager will initiate notification to offsite governmental authorities that the site is transitioning to a recovery organization, and provides information concerning changes in the organizational structure that may occur.

Total population exposure calculations are performed and periodically updated during the recovery phase. Total population exposure is determined (estimated) through a variety of processes, including examination of pre-positioned environment monitoring TLDs, bioassay, estimates based on release rates and meteorology, and estimates based on environmental monitoring of food, water, and ambient dose rates. The State is responsible for environmental monitoring activities to support the plant, and is the lead agency for the collection and analysis of environmental samples—including air, soil, foliage, food, and water. The State is also responsible for generating the radiation monitoring reports.

In its Interim Finding Report for Reasonable Assurance, FEMA found that the offsite emergency plans are adequate for this planning standard and associated evaluation criteria in NUREG-0654.

In view of the above, the staff finds that the applicant has developed general plans for recovery and reentry, including describing criteria to be used to determine when, after an accident, reentry of the facility is appropriate or operation can be resumed. In addition, the applicant has designated the individuals who will fill key positions in the facility recovery organization. The plans adequately specify the means for informing members of the response organizations that a recovery operation is to be initiated, describe how decisions to relax protective measures are made, and include a method for periodically estimating total population exposure.

Conclusion

The staff concludes that the information provided in the COLA is consistent with the guidelines in NUREG-0654, Planning Standard M. Therefore, the staff finds the information acceptable and meets the relevant requirements of 10 CFR 50.47(b)(13) and 10 CFR Part 50, Appendix E, Section IV.H, insofar as the information describes the essential elements of advanced planning and the provisions made to cope with emergency situations.

13.3.4.14 *Exercises and Drills*

As reflected in NUREG-0654, Planning Standard N, "Exercises and Drills," 10 CFR 50.47(b)(14) requires that periodic exercises be conducted to evaluate major portions of emergency response capabilities, periodic drills be conducted to develop and maintain key skills, and deficiencies identified as a result of exercises or drills be corrected. In addition, 10 CFR Part 50, Appendix E, Section IV.F, requires a description of the program that provides for training of employees, exercising by periodic drills, and participation by other assisting persons. The exercises (including hostile action exercises of the onsite and offsite emergency plans) shall test the adequacy of timing and content of implementing procedures and methods, test emergency equipment and communications networks, test the public alert and notification system, and ensure that emergency organization personnel are familiar with their duties. Regulations in 10 CFR Part 50, Appendix E, Section IV.F, further describe the full participation exercise (including timing), participation by each offsite authority having a role under the radiological response plan, deficiencies identified during the exercise, remedial exercises, exercise scenarios and eight-year exercise cycle.

In COL Plan Section N, "Drill and Exercise Program," the applicant described the program for drills and exercises conducted to practice, test, and evaluate the adequacy of the emergency preparedness program, including facilities, equipment, procedures, communication links, actions of ERO personnel, and coordination between Turkey Point and offsite EROs. The staff reviewed this section, as well as other relevant portions of the application, to determine whether the application conforms to the applicable guidance and complies with the pertinent regulatory requirements. The staff's primary focus was to evaluate the emergency plan against NUREG-0654, Planning Standard N, "Exercises and Drills." Planning Standard N provides the detailed evaluation criteria that the staff should consider to determine whether the emergency plan meets the applicable regulatory requirements in 10 CFR 50.47(b)(14).

Exercises are conducted to ensure that all major elements of the emergency plan and preparedness program are demonstrated at least once per 8-year cycle, including during off-hour periods and under various weather conditions. A hostile action-based exercise of the onsite emergency plan is conducted each exercise cycle, including conducting full or partial offsite participation in alternating exercise cycles. Exercises provide the opportunity for ERO teams to demonstrate key skills specific to emergency response duties. If key skills are not successfully demonstrated, a remedial exercise may result. Ingestion pathway exercises are conducted on an 8-year cycle, and Turkey Point participates on a rotating basis with the other fixed nuclear facilities in the State of Florida. ITAAC 8.1 states that a full participation exercise (test) will be conducted within the specified time periods of 10 CFR Part 50, Appendix E, and ITAAC 8.1.1 lists onsite exercise objectives. In addition, ITAAC 8.1.2 addresses personnel mobilization and performance of assigned responsibilities.

In addition to the exercises, FPL conducts drills for the purpose of testing, developing, and maintaining the proficiency of emergency responders. Drills are conducted to ensure that adequate emergency response capabilities are maintained. At a minimum, the following drills will be conducted:

- Communication Drills—Communication between the Control Rooms, TSC, EOF, and State and county warning points and EOCs shall be tested monthly. Communication between the Control Rooms, TSC, and EOF to the NRC Operations Center shall be tested using the ENS. ERDS will be activated and tested quarterly to ensure capability

for data to be transferred to the NRC. Communications between Turkey Point and the State and local EOCs and field monitoring teams shall be tested annually. Communications between the Control Rooms, TSC, EOF and ENC shall be tested annually. Communications between the Turkey Point emergency response facilities and appropriate offsite response organizations shall be tested during annual drills.

- Fire Drills—Fire drills shall be conducted in accordance with the plant Technical Specifications, fire protection plan, or plant procedures.

- Medical Emergency Drills—A medical emergency drill, involving a simulated contaminated individual and containing provisions for participation by local support services organizations (i.e., ambulance and support hospital), shall be conducted annually. The offsite portions of the medical drill may be performed as part of the required biennial exercise.

- Radiological Monitoring Drills—Plant environs and radiological monitoring drills (onsite and offsite) are conducted annually. These drills include collection and analysis of sample media and provisions for communications and record keeping.

- Radiation Protection Drills—Radiation protection drills involving a response to, and analysis of, simulated elevated airborne and liquid samples and direct radiation measurements within the plant are conducted semiannually in each Protected Area.

- Augmentation (off-hour) Drills—Augmentation drills shall be run at least once per 8-year cycle, and are planned outside of normal working hours.

- Assembly and Accountability Drills—Accountability drills are conducted at least once per 8-year cycle. The drill includes ascertaining the names of all missing individuals within the Protected Area, and accounting for all individuals within the Protected Area continuously throughout the event.

- Hostile Action-Based (HAB) Drills—At least once per 8-year cycle, an HAB drill will be conducted with offsite participation.

The emergency preparedness manager will be responsible for planning, scheduling, and coordinating all drills and exercises involving offsite agencies. Advance knowledge of the scenario will be kept to a minimum to allow “free-play” decisionmaking and to ensure realistic participation by those involved. Before the drill or exercise, a package will be distributed to the controllers and evaluators that will include the scenario, a list of performance objectives, and a description of the expected responses. During the drill or exercise, qualified evaluators will evaluate drill/exercise performance objectives against measurable demonstration criteria.

As soon as possible following the conclusion of each drill or exercise, a critique is conducted to evaluate the ability of the ERO to implement the emergency plan and its implementing procedures. The emergency preparedness manager (or designee) will prepare a formal written critique report, which will document the ability of the ERO to respond to simulated emergency situation or sequence of events, and may identify the need for changes to the emergency plan, procedures, equipment, facilities, or other components of the emergency preparedness program. The report will also contain corrective actions and recommendations for improvement. Official observers from Federal, State, or local governments will observe, evaluate, and critique

the required biennial exercise, in which the State and counties participate. In addition, representatives from the NRC will observe and evaluate Turkey Point's ability to conduct an adequate self-critique.

The emergency preparedness manager (or designee) is responsible for evaluating recommendations and comments to determine which items will be incorporated into the program or warrant corrective actions, and for the scheduling, tracking, and evaluation of the resolution to the items. The items designated as corrective actions will be placed and tracked in the station's corrective action program. The emergency preparedness manager is responsible for initiating changes to the emergency plan or supporting procedures resulting from drill/exercise critiques. COL Plan Appendix 3 lists an administrative procedure titled "Drills and Exercises."

In its Interim Finding Report for Reasonable Assurance, FEMA found that the offsite emergency plans are adequate for this planning standard and associated evaluation criteria in NUREG-0654. In addition, ITAAC 8.1.3 addresses offsite exercise objectives and the absence of uncorrected offsite exercise deficiencies prior to reactor operation above 5 percent of rated power.

In view of the above, the staff finds that the applicant has described provisions for conducting periodic exercises and drills to evaluate major portions of emergency response capabilities, and develop and maintain key skills. The exercises will test the adequacy of implementing procedures, emergency equipment and communications networks, and public notification system, and will ensure the ERO personnel are familiar with their duties. In addition, the applicant has described the full participation exercise, participation by offsite authorities, and how exercise and drill deficiencies will be identified and corrected.

Conclusion

The staff concludes that the information provided in the COLA is consistent with the guidelines in NUREG-0654, Planning Standard N. Therefore, the staff finds the information acceptable and meets the relevant requirements of 10 CFR 50.47(b)(14) and 10 CFR Part 50, Appendix E, Section IV.F, insofar as the information describes the essential elements of advanced planning and the provisions made to cope with emergency situations.

13.3.4.15 *Radiological Emergency Response Training*

As reflected in NUREG-0654, Planning Standard O, "Radiological Emergency Response Training," 10 CFR 50.47(b)(15) requires that radiological emergency response training is provided to those who may be called on to assist in an emergency. In addition, 10 CFR Part 50, Appendix E, Section IV.F.1, requires a description of the program that provides for training of employees, exercising by periodic drills, and participation by other assisting persons.

In COL Plan Section O, "Emergency Response Training," the applicant described the radiological emergency response training program which ensures the training, qualification, and re-qualification of individuals who will be required to provide assistance during an emergency at Turkey Point. The staff reviewed this section, as well as other relevant portions of the application, to determine whether the application conforms to the applicable guidance and complies with the pertinent regulatory requirements. The staff's primary focus was to evaluate the emergency plan against NUREG-0654, Planning Standard O, "Radiological Emergency Response Training." Planning Standard O provides the detailed evaluation criteria that the staff

should consider to determine whether the emergency plan meets the applicable regulatory requirements in 10 CFR 50.47(b)(15).

FPL implements a training program that provides for initial training and retraining for individuals who have been assigned emergency response duties, including both Turkey Point ERO personnel and offsite support agencies that may be requested to provide assistance. The Turkey Point emergency preparedness manager has the overall responsibility for the training program, and is responsible for the content and accuracy of the emergency preparedness training. The Turkey Point training manager is responsible for ensuring that initial training and annual retraining of ERO personnel is conducted and documented. The Turkey Point departments of Emergency Preparedness and Nuclear Training share the responsibility for ensuring that the ERO receives all necessary initial training and retraining. Discipline supervisors ensure the attendance of onsite personnel for ERO training, and are responsible for ensuring their personnel maintain current qualifications.

ERO personnel are trained in accordance with the Turkey Point emergency preparedness training program. This training is typically performed every year. The training program ensures the training, qualification, and requalification of individuals who may be called on for assistance during an emergency. The ERO training program consists of lesson plans, written examinations and supporting materials, as described in the Nuclear Training Department Program Manual and administrative guidelines. In addition, COL Plan Section O.3, “First-Aid Response,” states that personnel assigned to emergency teams that provide first aid will complete American Red Cross Multi-Media First Aid (or equivalent) on a schedule compatible with the American Red Cross specifications.

General Employee Training (GET) provides initial and annual requalification training on the basic elements of the emergency plan for all personnel working at the plant. New ERO personnel also receive an initial overview course that familiarizes them with the emergency plan by providing basic information in the following areas:

- planning basis
- emergency classifications
- ERO and responsibilities
- call-out of ERO
- emergency response facilities
- offsite organizations

In addition to general and specialized classroom training, members of the onsite ERO may receive periodic performance-based emergency response training, including a facility walk-through and various drills, as described in COL Plan Section N.

In RAI 5681, Question 13.03-12 (O-1_, the staff requested additional information from the applicant regarding a description of specialized training and periodic retraining for various emergency response personnel. In a September 30, 2011, response to RAI 5681, Question 13.03-12 (ADAMS Accession No. ML11227A063), the applicant stated that FPL delineates the training requirements for the ERO in an EPIP. (COL Plan Appendix 3 lists an administrative procedure titled “Radiological Emergency Response Training.”) The applicant also provided a detailed description of the training procedure in Enclosure 1 to its response, titled “Emergency Response Organization Training Program.” The staff reviewed Enclosure 1, and finds it

acceptable because it is consistent with NUREG-0654. Therefore, the staff considers RAI 5681, Question 13.01-12 (O-1), resolved.

Offsite training is provided to support organizations that may be called upon to provide assistance in the event of an emergency. Training for local law enforcement, fire and rescue, medical support, and principal decisionmakers for the State and county is offered annually, and is designed to acquaint the participants with the special problems potentially encountered during a nuclear plant emergency, notification procedures, and their expected emergency response roles. Training of State and local emergency management agency personnel includes a review of the EALs. Site-specific training is also offered to those organizations that must enter the site. Training of offsite EROs is also described in their respective radiological emergency plans.

In its Interim Finding Report for Reasonable Assurance, FEMA found that the offsite emergency plans are adequate for this planning standard and associated evaluation criteria in NUREG-0654.

In view of the above, the staff finds that the applicant has provided for radiological emergency response training to those who may be called on to assist in an emergency. In addition, the applicant has described the program that provides for the training of employees to ensure they are familiar with their specific emergency response duties, including exercising by periodic drills. The applicant has also described the participation in training and drill by other persons whose assistance may be needed, including specialized initial training and periodic retraining.

Conclusion

The staff concludes that the information provided in the COLA is consistent with the guidelines in NUREG-0654, Planning Standard O. Therefore, the staff finds the information acceptable and meets the relevant requirements of 10 CFR 50.47(b)(15) and 10 CFR Part 50, Appendix E, Section IV.F.1, insofar as the information describes the essential elements of advanced planning and the provisions made to cope with emergency situations.

13.3.4.16 *Responsibility for the Planning Effort—Development, Periodic Review, and Distribution of Emergency Plans*

As reflected in NUREG-0654, Planning Standard P, “Responsibility for the Planning Effort—Development, Periodic Review, and Distribution of Emergency Plans,” 10 CFR 50.47(b)(16), as reflected in the Planning Standard P, requires that responsibilities for plan development and review and for distribution of emergency plans are established and that planners are properly trained. In addition, 10 CFR Part 50, Appendix E, Section IV.G requires a description of provisions to be employed to ensure that the emergency plan, its implementing procedures, and emergency equipment and supplies are maintained up to date.

In COL Plan Section P, “Responsibility for the Planning Effort,” the applicant described the responsibilities associated with maintaining the emergency preparedness program, including the development, review, and distribution of the emergency plan. The staff reviewed this section, as well as other relevant portions of the application, to determine whether the application conforms to the applicable guidance and complies with the pertinent regulatory requirements. The staff’s primary focus was to evaluate the emergency plan compared to NUREG-0654, Planning Standard P, “Responsibility for the Planning Effort: Development, Periodic Review and Distribution of Emergency Plans.” Planning Standard P provides the detailed evaluation criteria

that the staff should consider to determine whether the emergency plan meets the applicable regulatory requirements in 10 CFR 50.47(b)(16).

COL Plan Section P.1, “Emergency Preparedness Staff Training,” states that the Emergency Preparedness staff is involved in maintaining an adequate knowledge of regulatory requirements, guidance, and accepted good practices on a regular basis. Each member of the staff is normally involved in one of the following activities:

- training courses specific or related to emergency preparedness
- observation of, or participation in, drills or exercises at other plants
- participation in industry review and evaluation programs aimed toward emergency preparedness programs/issues
- participation in regional or national emergency preparedness seminars, committees, workshops, or forums
- specific training courses in related areas, such as systems, equipment, operations, radiological protection, or problem identification and resolution

The Chief Nuclear Officer has overall authority and responsible for radiological emergency preparedness and planning, and is responsible for overall emergency plan implementation. The director, emergency preparedness and the emergency preparedness manager at the site are jointly responsible for the overall radiological emergency preparedness program, including program administration and maintenance. Specific responsibilities include staffing and training, drills and exercises, maintenance of the emergency plan and EPIPs, and operational readiness of plant facilities, communication systems, and emergency equipment and supplies.

The Turkey Point emergency preparedness manager is assisted by other staff members to ensure that the program is appropriately implemented and maintained in accordance with EPIPs, emergency plan administrative procedures (see COL Plan Appendix 3, which lists an administrative procedure titled “Maintaining Emergency Preparedness”), and plant procedures. The emergency plan and unit annexes are reviewed every year, and implementing procedures are reviewed on a continuing basis through their use in drills, exercises, and actual emergency events. The annual emergency plan review/update includes necessary changes, including those identified during audits, assessments, training, drills, and exercises.

The Turkey Point emergency preparedness manager is responsible for coordinating the annual review of the emergency plan, and determining the need for emergency plan or implementing procedure changes. Additional responsibilities include ensuring that elements of the emergency organization (e.g., FPL, local, State, and Federal) are informed of amendments and revisions to the emergency plan. The emergency plan, unit annexes, and implementing procedures are distributed as necessary on a controlled basis to the emergency response facilities and designated offsite locations, and all controlled document holders are issued revision changes upon approval. The names and telephone numbers in the EPIPs and Emergency Response Directory (listed as an administrative procedure in COL Plan Appendix 3) are reviewed and updated at least quarterly.

The Turkey Point nuclear oversight manager will perform an independent audit of the emergency preparedness program at least every 12 months, or as necessary. Results of the audits are submitted to management, and any findings that deal with offsite interfaces are reviewed with the appropriate agencies. The results of independent reviews of the emergency preparedness program, including recommendations for improvement, are retained for a period of five years.

COL Plan Section P.6, "Supporting Emergency Response Plans," contains a detailed list of supporting plans from Federal, State, and county organizations. The format for the emergency plan is outlined in the (COLA Part 5) Table of Contents, and a cross-reference of the plan to the evaluation criteria in NUREG-0654 is provided in COL Plan Appendix 6. In addition, COL Plan Appendix 3 provides a list of procedures used to implement specific sections of the emergency plan.

In its Interim Finding Report for Reasonable Assurance, FEMA found that the offsite emergency plans are adequate for this planning standard and associated evaluation criteria in NUREG-0654.

In view of the above, the staff finds that the applicant has established the responsibilities for plan development and review, including distribution of the emergency plans. In addition, the applicant has established provisions to properly train the planners (i.e., individuals responsible for the emergency planning effort), and has described the provisions to be employed to ensure that the emergency plan, its implementing procedures, and emergency equipment and supplies are maintained up-to-date.

Conclusion

The staff concludes that the information provided in the COLA is consistent with the guidelines in NUREG-0654, Planning Standard P. Therefore, the staff finds the information acceptable and meets the relevant requirements of 10 CFR 50.47(b)(16) and 10 CFR Part 50, Appendix E, Section IV.G, insofar as the information describes the essential elements of advanced planning and the provisions made to cope with emergency situations.

13.3.4.17 *Evacuation Time Estimate Analysis*

10 CFR 50.47(b)(10) requires in part that ETEs have been developed by applicants and licensees, and that licensees shall update the ETEs on a periodic basis. In addition, 10 CFR Part 50, Appendix E, Section IV, requires that the applicant provide an analysis of the time required to evacuate various sectors and distances within the plume exposure pathway EPZ for transient and permanent populations, using the most recent U.S. Census Bureau data as of the application submission date. NUREG-0654, Appendix 4, "Evacuation Time Estimates within the Plume Exposure Pathway Emergency Planning Zone," contains the detailed guidance to be used by the staff to determine whether the ETE Report meets the applicable regulatory requirements in 10 CFR Part 50, Appendix E. Additional guidance is contained in NUREG/CR-6863 and NUREG/CR-7002. ETEs are part of the required emergency planning basis and provide FPL and State and local governments with site-specific information needed for protective action decisionmaking.

In COLA Revision 7, Part 5, Supplement 1, the applicant included a corrected final report (Revision 4) of the Turkey Point Nuclear Power Plant—Development of Evacuation Time Estimate, dated April 15, 2015 (the ETE Report). This replaces the version in Revision 6 of the

application (i.e., Revision 4, dated August 22, 2014), which in turn replaced ETE Report Revision 3 (dated August 2012, ADAMS Accession No. ML13357A442). The staff had previously evaluated ETE Report Revision 3 against the applicable criteria set forth in Appendix 4 to NUREG-0654, NUREG/CR-6863, and NUREG/CR-7002. Revision 4 of the ETE Report made changes that include the addition of three new evacuation regions and ETE sensitivity studies, which were requested by Miami-Dade County, and incorporate the applicant's responses to NRC RAIs that were based on ETE Report Revision 3 (discussed below).

The Turkey Point Nuclear Plant is along the shore of Biscayne Bay within parts of Miami-Dade and Monroe Counties, approximately 40.2 km (25 mi) south of Miami, FL. Figure 3-1, "PTN EPZ," and Figure 6-1, "PTN EPZ Areas," of the ETE Report show the 10-mi EPZ (protective action) Areas and surrounding communities, and illustrate the plant's location with regard to major highways and geographic features. Appendix L of the ETE Report describes the physical boundaries of each of the 10 EPZ Areas, which are typically bounded by major roadways or the shoreline. Evacuation time estimates were determined for the 23 evacuation regions (i.e., Regions R01 through R23), which encompass all the groupings of areas considered. The evacuation regions are listed in the ETE Report in Tables 6-1 and H-1, and shown in Figures H-1 through H-23.

COL Plan Section J.8 states that an independent ETE study has been performed to provide estimates of the time required to evacuate resident and transient populations surrounding the Turkey Point site for various times of the year under favorable and adverse weather conditions. Referenced in COL Plan Appendix 5, the ETE Report is based on 2010 U.S. Census Bureau data files, local information and a telephone survey, and is included in the COLA as Supplemental Information 1 to the COL Plan. The ETE Report was prepared by KLD Engineering, P.C., in coordination with FPL personnel and emergency management personnel representing State and local governments, and provides a complete review of the evacuation road network. The EPZ Areas were used to define evacuation regions, which approximated keyhole sections within the EPZ. The ETE Report consists of these 13 sections and has detailed supporting information in Appendices A-H and J-N.

The Executive Summary of the ETE Report includes a summary of the conclusions reached in the report. Specifically, general population (i.e., permanent residents and transients) ETEs were computed for 276 unique cases, consisting of a combination of 23 unique evacuation regions (described in Table 6-1) and 12 unique evacuation scenarios (defined in Table 6-2). The 12 evacuation scenarios address different times of day, days of the week, weather conditions, a special event (i.e., NASCAR championship race at the Homestead-Miami Speedway), and one roadway impact scenario (i.e., a single lane closure on the Florida Turnpike northbound for the duration of the evacuation). The adverse weather condition is identified as rain. The highway capacity and free flow speed were each reduced to 90 percent of the good weather conditions to address the impact of adverse weather. For each evacuation scenario, an analysis was included of the applicable population segments, including permanent residents and transient populations, transit-dependent permanent residents, special facility residents, and schools. In addition, the ETEs considered a *shadow evacuation* in each analysis to reflect evacuation of residents from outside of the official evacuation area.[17] The shadow

[17] NUREG/CR-7002 includes consideration of shadow evacuation in ETE analyses, and states that a shadow evacuation occurs when people outside of any officially declared evacuation zone evacuate without having been

region covered the region between the 10-mi EPZ boundary and approximately 15-mi radius from the plant.

The telephone survey results were used to establish demographic characteristics and auto occupancy information. Section 3.1, "Permanent Residents," explains the values for the average household size of 3.13 persons per household and 1.37 vehicles per household were adapted from the survey. Table 3-2, "Permanent Resident Population and Vehicles by Area," quantifies the residents by evacuation area showing a population of 206,329 using 90,352 vehicles for a ratio of 2.28 permanent residents per vehicle. Figure 3-2, "Permanent Resident Population by Sector," shows the 206,329 residents distributed within radial sectors of the EPZ. In addition to the population segments that will be directed to evacuate, a shadow evacuation is considered in the analysis. Following the guidance in NUREG/CR-7002, the ETE study includes an assumption that 20 percent of the permanent resident population living in the region 5 mi beyond the EPZ will evacuate. The estimated shadow population by sector is shown in Figure 3-4, "Shadow Population by Sector." The transit-dependent population is evaluated separately. The process included identifying the population demand, identifying the evacuation resources and associated response times. The ETE identifies 17,463 transit-dependent residents and assumes 50 percent of these will rideshare. Population demand estimates were adjusted to account for the location of residents when the notification is received. The populations for evening and daytime scenarios as presented in Table 6-3, "Percent of Population Groups Evacuating for Various Scenarios."

Major facilities frequented by transients include lodging, marinas, campgrounds, golf courses, shopping centers, sports complexes, and museums and art centers. Population and vehicle estimates are provided for each type of facility along with the supporting basis for the estimates. Table 3-4, "Summary of Transients and Transient Vehicles," of the ETE report provides estimates by evacuation area and shows a total transient population of 33,075, which would need 13,434 vehicles to evacuate. A separate estimate, based on the Florida journey-to-work data, was developed for employee commuters who live outside the EPZ and commute to jobs within the EPZ. A vehicle occupancy factor of 1.09 employees per vehicle, developed from the telephone survey, was used to estimate the number of evacuating vehicles.

As described in Section 2.1, "Data Estimates," the special facility populations are based on county data and direct contact with facilities. Appendix E, "Special Facility Data," includes lists of schools and special facilities with demographic information provided for each institution. The location and enrollment for public and private schools is provided for Miami-Dade and Monroe Counties. To estimate the school evacuation demand, Table 8-2, "School Population Demand Estimation," identifies each school by area and shows that 38,108 students would need 615 school buses to complete evacuation. This assumes 100 percent of students are in attendance, parents do not pick up children, and high school students who drive will leave their vehicle and evacuate by bus. The location and capacity of medical facilities within the EPZ is also provided. The types of patients are listed as ambulatory, wheelchair, and bedridden to support the quantification of specialized vehicles needed to support the evacuation. The Dade Juvenile Resident Facility is identified as a correctional facility located within the EPZ. The capacity and resources needed to support an evacuation of the facility are described in Section 8.6, "Correctional Facilities," and an ETE for the facility is provided.

instructed to do so. Shadow evacuations are considered in developing the demand estimation because the additional traffic generated has the potential to impede an evacuation of the EPZ.

The computation of ETE assumes that 20 percent of the population within the EPZ, but outside the impacted region, will elect to voluntarily evacuate. In addition, 20 percent of the population in the shadow region will also elect to evacuate. These voluntary evacuees could impede those who are evacuating from within the impacted region. The impedance that could be caused by voluntary evacuees is considered in the computation of ETE for the impacted region.

An analysis of evacuation times, which is consistent with guidance in NUREG/CR-7002, is presented for the permanent resident and transient populations, transit-dependent permanent residents, special facility residents, and schools. The population of the EPZ is largely concentrated in the northwest quadrant such that all available roadways in this area need to be considered in the evacuation. In Revision 4 of the ETE study, potential locations of congestion are illustrated in Figure 7-3, "Congestion Patterns at 1 hour after the Advisory to Evacuate," through Figure 7-7, "Congestion Patterns at 9 Hours and 30 Minutes after the Advisory to Evacuation." These figures illustrate congestion patterns at various hours after the advisory to evacuate. These figures show a level of service F, which represents heavy congestion, in the northwest quadrant of the EPZ beginning immediately and lasting more than 7 hours. For the remaining quadrants of the EPZ, the roadway level of service is generally good.

The ETE statistics provide the elapsed times for 90 percent and 100 percent of the population to evacuate from within the affected region. The 90th percentile ETEs have been identified as the values that should be considered when making protective action decision. The ETEs for the general population range from 1:20 (hr:min) to 8:20 at the 90th percentile. The ETEs for the 100th percentile are significantly longer than those for the 90th percentile as a result of the traffic congestion within the EPZ, and have a maximum ETE of 11:45. U.S. Highway 1, Krome Ave., and the Florida Turnpike northbound are the most congested evacuation routes.

The ETEs for the 8-km (5-mi) region are significantly longer when evacuating additional areas beyond 5 mi because of the routing of vehicles from beyond 5 mi into the 5-mi region to access the Florida Turnpike. A NASCAR race at the Homestead-Miami Speedway was considered as the special event scenario, and has a material effect on the 100th percentile ETEs for regions that evacuate beyond 5 mi from the plant. The event occurs on a winter weekend midday under good weather conditions and represents the peak tourist condition within the EPZ. Approximately 100,000 people and 32,600 corresponding vehicles are considered in the analysis. For this event, a special traffic control plan that includes 54 traffic control points and contraflow on Speedway Boulevard is established.

The computation of ETEs considered *staged evacuation* for those regions wherein the 5-mi radius and sectors downwind to the EPZ boundary were evacuated.[18] Those people within the 5-mi region evacuated immediately, while those beyond 5 mi, but within the EPZ, shelter-in-place. Once 90 percent of the 5-mi region is evacuated, those people beyond 5 mi begin to evacuate. Staged evacuation was shown to expedite the evacuation of those evacuees from within the 5-mi region. Although Federal guidance suggests staged evacuation of the 3.2-km (2-mi) regions and sectors downwind to 5 mi, there are no EPZ residents within 2 mi and only 14 residents within 5 mi. Miami-Dade and Monroe Counties only consider

[18] NUREG/CR-7002 establishes an approach to develop ETEs for the staged evacuation protective actions, and states that evacuation research has shown that implementation of a staged keyhole evacuation can be more beneficial to the public health and safety than the normal keyhole evacuation. A staged evacuation is where one area is ordered to evacuate while adjacent areas are ordered to shelter-in-place until directed to evacuate. . The term "keyhole evacuation" is used to indicate the area around a nuclear power plant that resembles a keyhole, in that it includes a 360 degree area around the plant with a two-mile radius, and continuing in a downwind direction, typically out to five miles from the plant. The keyhole includes the downwind sector and adjoining sectors on each side.

keyhole evacuations wherein the 5-mi region and sectors downwind to the EPZ boundary evacuate. However, the current traffic management plans for Miami-Dade and Monroe Counties are sufficient, and the ETE study has not identified any necessary changes to the plans.

Separate ETEs were computed for schools, medical facilities, transit-dependent persons, homebound special needs persons, and correctional facilities. The average single-wave ETEs for these facilities are comparable to the general population ETEs at the 90th percentile. While the ETE for the full EPZ (Region R03) is sensitive to changes in population growth, a full ETE update would be needed for population growth of 6 percent or more between decennial Censuses. Because of the planned traffic treatments to be implemented during the construction of Units 6 and 7, the ETE for the 2-mi region is not materially impacted (i.e., 15 min decreases for the 90th percentile ETE). However, the 90th and 100th percentile ETEs for the full EPZ increases by 3:10 and 3:40, respectively, due to the significant increase in permanent resident and shadow populations from the extrapolation to year 2019.

The staff evaluated the ETE Report against the criteria set forth in Appendix 4 to NUREG-0654, NUREG/CR-6863, and NUREG/CR-7002. The evaluation included checking the ETE Report for internal consistency, consistency with other parts of the emergency plan, and consistency with other parts of the COLA (including the FSAR). Citations in the ETE Report were verified by comparison to the cited document text. General descriptions of the Turkey Point site region, population, and highways were verified using internet searches, aerial photographs, and field survey observations. Demographic information was gathered, a field survey of the EPZ performed, trip generation times estimated, evacuation regions defined, the procedures specified in the 2010 Highway Capacity Manual applied, the site was modeled using the DYNEV II System traffic simulation model,[19] and ETEs were generated.

ETE Report Section 5.4.3, “Trip Generation for Waterways and Recreational Areas,” states that boaters in the waters within the 10-mi EPZ will be notified of the emergency by VHF Radio and loudspeakers from boats and aircraft. As indicated in Table 5-2, “Time Distribution for Notifying the Public,” the ETE Report assumes 100 percent notification in 45 minutes, with a 2-hour timeframe for boaters, campers, and other transients to return to their vehicles and begin their evacuation trip. In Revision 3 of ETE Report Section 3.3, “Transient Population,” the applicant described visitors to Biscayne National Park, including those arriving by car and boat, and stated in Footnote 2 that waterborne vehicles are not considered in the ETE analysis.

In addition, as shown in ETE Report Figures 3-1 and 6-1, approximately one half of the total 10-mi EPZ surface area consists of the ocean and Biscayne Bay. Furthermore, the majority of this water area is not included within any of the 10 EPZ Areas, or the evacuation regions that are considered in the ETE study. Specifically, only EPZ Areas 2, 3, and 10 include water areas within the 10-mi EPZ. As such, the staff determined that it was unclear whether the evacuation of boaters—located on the water outside of the 10 EPZ Areas, but within the 10-mi EPZ—had been considered in the ETE study.

In RAI 7215, Question 13.03-18.A, August 28, 2013 (ADAMS Accession No. ML13240A502), the staff requested additional information from the applicant regarding an estimate of the number of Biscayne National Park visitors that would evacuate the EPZ by vehicle and by boat;

[19] The DYNEV traffic simulation model is a macroscopic model that describes the operations of traffic flow in terms of aggregate variables: vehicles, flow rate, mean speed, volume, density, queue length, on each link, for each turn movement, during each Time Interval (i.e., simulation time step).

including the ETE for each mode of transportation. In addition, in RAI 7215, Question 13.03-18.B, the staff asked the applicant to describe whether, and how, the ETE includes time for boaters to evacuate the EPZ waterways within 10 mi of the plant, including the Biscayne Bay area. Furthermore, in ETE Report Table 1-1, "Stakeholder Interaction," the applicant identified various interactions among the State and local government agencies, but did not specify if the ETE Report (Revision 3) had been reviewed by them. In RAI 7215, Question 13.03-18.C, the staff requested information regarding the applicant's interactions with State and local stakeholders, including the identification of the offsite agencies that have reviewed the updated (Revision 3) ETE Report.

In an October 15, 2013, response to RAI 7215, Questions 13.03-18.A-C (ADAMS Accession No. ML13290A140), the applicant provided estimated peak transient numbers of 5,050 boat visitors and 1,870 boats for the Biscayne National Park. The number of boat visitors is based on the Biscayne National Park Information Guide,[20] which states that the park attracts nearly 500,000 visitors a year, and that most of these visitors enter the park by private boat. The applicant used the peak transient numbers of 9,013 vehicle (nonboat) visitors and 2,774 vehicles in ETE Report Table E-4, "Parks/Recreational Attractions within the EPZ"—reflecting visitors to Biscayne National Park (Convoy Point), Black Point Park and Marina, and Homestead Bayfront Park—to estimate what portion of the park's 500,000 visitors are there via boat. With regard to visitors entering the park via boat, Footnote 2 of ETE Report Section 3.3 states that on a typical day, vehicle occupancy is higher than normal because campsites at the park are only accessible by boat.

Footnote 2 is significant with regard to the applicant's estimates of vehicle versus boat evacuations, in that the staff finds it reasonable to assume that most of the visitors, who arrive by vehicles and enter the park by boat, would return to their vehicles for evacuation. In contrast, those visitors arriving at (and entering) the park by boat, would evacuate by boat. Thus, the staff does not see an inconsistency with the applicant's distinction between vehicle and boat evacuations, with regard to the Information Guide's statement that most of the estimated 500,000 visitors enter the park by private boat.

The applicant described notification of the boating transients, and stated that the 2-hour mobilization time for transients presented in Table 5-8, "Trip Generation Histograms for the EPZ Population for Unstaged Evacuation," of the ETE Report is sufficient time for the boating transients to prepare to evacuate. The applicant calculated boat evacuation times using a conservative boat evacuation speed of 5 mph (4.3 knots) and approximated distances to clear the EPZ. The calculated boat (100th percentile) ETEs (including mobilization time) for the 2-mi and 5-mi regions, and the full EPZ, range from 2:12 to 4:12. The 90th percentile ETEs ranged from 1:27 to 3:27. The applicant stated that the results of the boat ETEs were either less than or in good agreement with their respective (vehicular ETE) regions in Table 7-1 (90th percentile ETEs) and Table 7-2 (100th percentile ETEs). The staff finds the applicant's estimated boat evacuation times reasonable, including consideration that their exit from the 10-mi EPZ water area would not be constrained by exit route capacities; equivalent to highway capacity limitations that affect vehicle evacuations, which are described in ETE Report Section 4, "Estimation of Highway Capacity."

The applicant also provided additional details regarding stakeholder interactions, and stated that on July 26, 2012, the results of the ETE Report (Revision 3) were presented to emergency

[20] Uhler, John W., "Biscayne National Park Information Guide," Copyright © 1995-2007, Hillclimb Media. Available at http://www.biscayne.national-park.com/info.htm, visited August 28, 2014.

planning personnel from the State of Florida, Miami-Dade County, and Monroe County. The State and counties were provided copies of the ETE before the meeting, and all feedback was discussed and addressed at the meeting on July 26, 2012. All comments were resolved in the final ETE Report (Revision 3). FPL Fleet (Turkey Point Units 3 and 4), the State of Florida, and counties subsequently used the ETE results to formulate a protective action strategy.

The applicant's response to RAI 7215, Questions13.03-18.A-C included proposed changes that were incorporated into COLA Revision 7, corrected final ETE Report Revision 4. These changes consist of a detailed description of how the applicant determined the estimated number of boat visitors, including the associated ETEs. The applicant also deleted the statement in Footnote 2 of ETE Report Section 3.3, which stated that waterborne vehicles are not considered in the ETE analysis. In addition, the applicant proposed an update to ETE Report Table 1-1 to reflect its interactions with State and local governmental authorities for ETE Report (Revision 4), including discussions of ETE methods and review results, and comments received on the draft ETE Report. The staff reviewed the proposed ETE changes, and finds them acceptable because they are consistent with 10 CFR Part 50, Appendix E, Section IV. In addition, the staff confirmed that the ETE changes were included in ETE Report, Revision 4, of COLA Revision 6. Therefore, the staff considers RAI 7215, Questions 13.03-18.A, 18.B and 18.C, resolved, with regard to emergency planning.

In Section 13, "Recommendations," suggestions are provided that have the potential to reduce the ETE. One suggestion is contacting schools before dispatching buses to get an accurate count of the number of buses required. The ETE uses a conservative estimate assuming 100 percent of the students are at the school, and reducing the number of buses to serve actual needs could eliminate the need for a second evacuation wave. A recommendation for a physical improvement is made based on scenario 12 of the ETE, which evaluated the effect of a lane closure on the Florida Turnpike. The results showed an increase in the ETE of as much as 1.5 hours for the lane closure scenario, and recommends the shoulder be used as an additional lane to increase capacity.

In view of the above, the staff finds that the applicant has developed adequate ETEs for the plume exposure pathway EPZ for transient and permanent populations using the most recent U.S. Census Bureau data (i.e., for the year 2010) as of the application revision submission date (i.e., October 14, 2015, for COLA Revision 7.) In addition, the ETEs are consistent with Appendix 4 to NUREG-0654, NUREG/CR-6863, and NUREG/CR-7002

Conclusion

The staff concludes that the ETE Report (Revision 4) is consistent with the guidelines in Appendix 4 to NUREG-0654, NUREG/CR-6863, and NUREG/CR-7002. Therefore, the staff finds the information acceptable and meets the relevant requirements of 10 CFR 50.47(b)(10) and 10 CFR Part 50, Appendix E, Section IV, insofar as the information describes the essential elements of advanced planning and the provisions made to cope with emergency situations.

13.3.4.18 *AP1000 COL Items*

COLA FSAR Table 1.8-202, "COL Item Tabulation," identifies two COL information items from AP1000 DCD Tier 2 Section 13.3.1, relating to EP. These consist of STD COL 13.3-1 and STD COL 13.3-2, which correspond to COL Action Items 13.3-1 and 13.3.3.3.5-1 (respectively) in Section 13.3 of NUREG-1793. The following addresses the resolution of these two COL information items.

- STD COL 13.3-1

STD COL Information Item 13.3-1 requires that COL applicants referencing the AP1000 certified design will address EP, including post-72 hour actions and its communications interface. In FSAR Section 13.3, the applicant addressed STD COL 13.3-1 by stating the following:

> The emergency planning information is submitted to the Nuclear Regulatory Commission as a separate licensing document and is incorporated by reference (see [FSAR] Table 1.6-201).
>
> Post-72 hour support actions, as discussed in DCD Subsections 1.9.5.4 and 6.3.4, are addressed in DCD Subsections 6.2.2, 8.3, and 9.1.3. Provisions for establishing post-72 hour ventilation for the main control room, instrumentation and control rooms, and dc [direct current] equipment rooms are established in operating procedures.

COLA FSAR Table 1.6-201, "Additional Material Referenced," lists the Turkey Point Plant Radiological Emergency Plan and references FSAR Section 13.3. The staff's evaluation of communications interfaces is addressed above in SER Section 13.3.4.6, "Emergency Communications." With regard to post-72 hour actions associated with the AP1000 DCD, the applicant referenced operating procedures and various DCD Tier 2 sections (identified above) that address post-72 hour support actions. The staff identified additional AP1000 DCD sections that address post-72 hour support actions, which include DCD Tier 2 Sections 6.4, "Habitability Systems"; 9.4, "Air-Conditioning, Heating, Cooling, and Ventilation System"; and 9.5, "Other Auxiliary Systems" (e.g., plant lighting systems described in Subsection 9.5.3).

As discussed in AP1000 DCD Tier 2 Section 1.9.5.4, post-72 hour support actions relate to an extended loss of the nonsafety-related systems for both offsite and onsite alternating current (ac) power sources for more than 72 hours. For purposes of the staff's review of EP information in the COLA, and in the context of COL Action Item 13.3-1, the reference to post-72 hour support actions is limited and indirectly related to the habitability and functionality of the TSC. Specifically, it is limited to the reliability of the electrical power supply (post-72 hours) to the TSC ventilation system and communications equipment. The evaluation of the reliability of the electrical power supplies, including the power supplies to the TSC, is addressed in the AP1000 DCD sections referenced above. The habitability and functionality of the TSC is further addressed in SER Section 13.3.4.8.

The staff finds that the applicant has addressed emergency planning (including communication interfaces—see STD COL 13.3-2, below) in support of Units 6 and 7 in the COL Plan. In addition, the applicant has addressed post-72 hour actions through reference to the AP1000 DCD sections (identified above) that specifically address an extended loss of the nonsafety-related systems for both offsite and onsite ac power sources for more than 72 hours. The staff's evaluation of those systems and power sources, including the establishment of associated operating procedures, are addressed in their respective sections of this report. Therefore, the staff finds that the COL applicant has adequately addressed STD COL 13.3-1.

- STD COL 13.3-2

STD COL 13.3-2 requires that COL applicants referencing the AP1000 certified design will address the activation of the EOF, consistent with current operating practice and NUREG-0654.

In FSAR Section 13.3, the applicant addressed STD COL 13.3-2 by stating that the emergency plan describes the plans for coping with emergency situations, including communications interfaces and staffing of the EOF.

Activation and staffing of the EOF is described in the COL Plan, and the staff's evaluation of this information is addressed above in Section 13.3.4.2, "Onsite Emergency Organization," Section 13.3.4.3, "Emergency Response Support and Resources," Section 13.3.4.5, "Notification Methods and Procedures," and Section 13.3.4.8, "Emergency Facilities and Equipment," of this report. Communication interfaces are addressed in SER Section 13.3.4.6, "Emergency Communications." Integral to EOF activation is augmentation of plant staff by corporate support personnel (addressed in License Condition (13-3)) and reliable communications systems (addressed in License Condition (13-4)), which are addressed in SER Sections 13.3.4.2 and 13.3.4.6, respectively. Therefore, subject to License Condition (13-3) and License Condition (13-4), the staff finds that the COL applicant has adequately addressed STD COL 13.3-2.

- PTN COL 9.5-9 and PTN COL 9.5-10

PTN COL 9.5-9 requires that COL applicants referencing the AP1000 certified design will address interfaces to required offsite locations, including the recommendations of BL-80-15 regarding loss of the emergency notification system due to a loss of offsite power. In addition, PTN COL 9.5-10 requires that COL applicants referencing the AP1000 certified design will address the emergency offsite communication system, including the crisis management radio system. In FSAR Section 9.5.2.2.5, the applicant addressed PTN COL 9.5-9 and PTN COL 9.5-10 together by stating that offsite interfaces and emergency offsite communications are described in the emergency plan (see also, FSAR Table 1.8-202).

The applicant described the emergency notification systems (including the ENS) in COL Plan Section E, and the emergency communications systems in COL Plan Section F. The staff's evaluation of offsite emergency notification and communications systems is addressed above in SER Sections 13.3.4.5 and 13.3.4.6, respectively. Therefore, the staff finds that the COL applicant has adequately addressed PTN COL 9.5-9 and PTN COL 9.5-10, with regard to emergency planning for Units 6 and 7. Offsite interfaces and emergency offsite communications are discussed further in SER Section 9.5.2, "Communication System."

- PTN COL 18.2-2

PTN COL 18.2-2 requires that COL applicants referencing the AP1000 certified design will provide specific information regarding EOF and TSC communications and human factors attributes. FSAR Table 1.8-202 identifies FSAR Section 18.2.1.3 as the location where PTN COL 18.2-2 is addressed. In FSAR Section 18.2.1.3, the applicant addressed PTN COL 18.2-2 by stating that the EOF and TSC communication strategies, as well as the EOF and TSC human factors attributes, are described in the emergency plan.

The applicant described EOF and TSC communications and human factors attributes in COL Plan Sections E, F, and H. The staff's evaluation is addressed above in SER Sections 13.3.4.5, 13.3.4.6, and 13.3.4.8, respectively. Therefore, the staff finds that the COL applicant has adequately addressed PTN COL 18.2-2, with regard to emergency planning for Units 6 and 7. PTN COL 18.2-1 is discussed further in SER Section 18.2, "Human Factors Engineering Program Management."

13.3.4.19 *Supplemental Information, Implementation Milestones, and ITAAC*

- STD SUP 13.3-1

Activities applicable to emergency planning that the COL holder (i.e., licensee) shall perform after the COL is issued consist of the implementation milestones and license conditions listed below. The applicant provided supplemental information in STD SUP 13.3-1, which states that FSAR Table 13.4-201 provides milestones for emergency planning implementation. Table 13.4-201 identifies the emergency planning program as operational program (Item) No. 14, and includes the three associated implementation milestones listed below (see also, SER Table 13.3-1, ITAAC 8.1 and ITAAC 9.1). The staff reviewed Table 13.4-201, and finds that the identified implementation milestones associated with the emergency planning program are acceptable because they are consistent with the relevant guidance and acceptance criteria in NUREG-0800, and therefore meet the respective requirements in 10 CFR Part 50, Appendix E. Implementation milestones associated with emergency planning are also addressed below under *License Condition 6*, and in SER Section 13.4, "Operational Programs."

Implementation Milestones

- Full participation exercise conducted within 2 years of the scheduled date for initial loading of fuel, as required by 10 CFR Part 50, Appendix E, Section IV.F.2(a)(ii).

- Onsite exercise conducted within 1 year before the scheduled date for initial loading of fuel, as required by 10 CFR Part 50, Appendix E, Section IV.F.2(a)(ii).

- Applicant's detailed implementing procedures for its emergency plan submitted at least 180 days prior to the scheduled date for initial loading of fuel, as required by 10 CFR Part 50, Appendix E, Section V.

License Condition 6

Part 10 of the COLA proposes License Condition 6, which provides for submission of a schedule that supports NRC's inspections of operational programs. With regard to emergency planning, the schedule shall address EPIPs (Item 6.a), an ERDS implementation program plan (Item 6.e), and responding to explosions or fire (Item 6.g). Specifically, the applicant proposed the following:

> The licensee shall submit to the appropriate director of the NRC, a schedule, no later than 12 months after issuance of the COL, that supports planning for and conduct of NRC inspections of operational programs listed in the operational program FSAR Table 13.4-201. The schedule shall be updated every six months until 12 months before scheduled fuel loading, and every month thereafter until either the operational programs in the FSAR table have been fully implemented or the plant has been placed in commercial service, whichever comes first. This schedule shall also address:
>
> a. the emergency planning implementation procedures to the NRC consistent with 10 CFR Part 50, Appendix E, Section V
>
> e. an emergency response data system (ERDS) implementation program plan consistent with 10 CFR Part 50, Appendix E, Section [VI]

g. full implementation of the operational and programmatic elements of responding to an event associated with a loss of large areas of the plant due to explosions or fire, prior to initial fuel load

The schedule for submission of the EPIPs to the NRC (Item 6.a) is also addressed above in STD SUP 13.3-1 and Implementation Milestones, and in ITAAC 9.1. The ERDS program, including implementation (Item 6.e), is addressed above in SER Sections 13.3.4.5, 13.3.4.6, 13.3.4.8 and 13.3.4.14, and in ITAAC 3.2. With regard to Item 6.g, 10 CFR Part 50, Appendix E, Section IV, addresses various aspects of the emergency preparedness program related to hostile actions toward the site, which are addressed above in SER Sections 13.3.4.1, 13.3.4.3, 13.3.4.4, 13.3.4.8, 13.3.4.10, and 13.3.4.14. The staff reviewed proposed License Condition 6, and finds that the identified implementation milestones associated with the emergency planning program (i.e., Items 6.a, 6.e, and 6.g) are acceptable because they are consistent with the relevant guidance and acceptance criteria in NUREG-0800 and SECY-05-0197, and therefore meet the respective requirements in 10 CFR Part 50, Appendix E. The staff's review of operational program readiness, including proposed License Condition 6, is addressed further in SER Section 13.4. In addition, implementation milestones associated with emergency planning for source, byproduct, and special nuclear materials are addressed in SER Section 1.5.5.[21]

ITAAC and License Condition 1

- PTN SUP 14.3-1

In COLA Part 2, Subsection 14.3.2.3.1, the applicant provided supplemental information in PTN SUP 14.3-1, which states:

> EP-ITAAC have been developed to address implementation of elements of the Emergency Plan. Site-specific EP-ITAAC are based on the generic ITAAC provided in Appendix C.II.1-B of Regulatory Guide 1.206. These ITAAC have been tailored to the specific reactor design and emergency planning program requirements.

As stated above in SER Section 13.3.2, proposed License Condition 1 states that the ITAAC identified in the tables in COLA Part 10 Appendix B are hereby incorporated into the COL. Appendix B includes Table 3.8-1 (EP ITAAC) and incorporates by reference the AP1000 DCD ITAAC. The DCD ITAAC include the six AP1000 design-related EP ITAAC in DCD Tier 1 Table 3.1-1. Four of these EP ITAAC in DCD Table 3.1-1 duplicate or overlap similar EP ITAAC in Part 10 Table 3.8-1 (e.g., TSC floor space). The remaining two EP ITAAC in DCD Table 3.1-1 address the availability of various plant parameters in the TSC and a habitable workspace environment for the CSA. DCD Table 3.1-1 also addresses the AP1000 locations of the OSC and TSC, which are changed by COLA Departures PTN DEP 18.8-1 and PTN DEP 18.8-2, respectively, and evaluated above in SER Section 13.3.4.8.

[21] Section 1.5.5, "Receipt, Possession, and Use of Source, Byproduct, and Special Nuclear Material Authorized by 10 CFR Part 52 [Subpart C] Combined Licenses," of this report addresses implementation milestones for the various operational programs (including emergency planning) relating to byproduct, source, and special nuclear material—in accordance with 10 CFR Part 30, "Rules of General Applicability to Domestic Licensing of Byproduct Material"; 10 CFR Part 40, "Domestic Licensing of Source Material"; and 10 CFR Part 70, "Domestic Licensing of Special Nuclear Material."

The staff reviewed the complete set of EP ITAAC for Turkey Point Units 6 and 7, which consists of the EP ITAAC in COLA Part 10 Table 3.8-1, plus the (EP-related) ITAAC in AP1000 DCD Tier 1 Table 3.1-1, and finds that they are adequate because they conform to the respective generic EP ITAAC and acceptance criteria in NUREG-0800, Section 14.3.10.[22] Specific EP ITAAC in Part 10 Table 3.8-1 and DCD Table 3.1-1 are also identified above in SER Section 13.3.4, as they relate to the staff's evaluation of the various planning standards. Therefore, the staff finds that the EP ITAAC in Part 10 Table 3.8-1 (reflected below in SER Table 13.3-1) and DCD Table 3.1-1 are acceptable because they are consistent with NUREG-0800 and RG 1.206.

13.3.5 Post Combined License Activities

The license condition language in this section has been clarified from previously considered language. In a letter dated April 8, 2016 (ADAMS Accession No. ML16103A507), the applicant did not identify any concerns with the clarified license condition language. The changes do not affect the staff's above analysis of the conditions, and therefore, for the reasons discussed in the technical evaluation section above, the staff finds the following ITAAC and license conditions acceptable:

The licensee shall perform and satisfy the acceptance criteria of the EP ITAAC set forth in SER Table 13.3-1 and AP1000 DCD Tier 1 Table 3.1-1.

- License Condition (13-3) - No later than eighteen (18) months before the latest date set forth in the schedule submitted in accordance with 10 CFR 52.99(a) for completing the inspections, tests, and analyses in the ITAAC, Florida Power & Light Company shall have performed an assessment of the on-site and augmented staffing capability for response to a multi-unit event. The staffing assessment shall be performed in accordance with NEI 12-01, "Guideline for Assessing Beyond Design Basis Accident Response Staffing and Communications Capabilities," Revision 0.

  No later than one hundred eighty (180) days before the date scheduled for initial fuel load, as set forth in the notification submitted in accordance with 10 CFR 52.103(a), Florida Power & Light Company shall revise the Emergency Plan to include the following:

  (a) Incorporation of corrective actions identified in the staffing assessment required by this license condition; and

  (b) Identification of how the augmented staff will be notified, given degraded communications capabilities.

  (See SER Section 13.3.4.2.)

- License Condition (13-4) - No later than eighteen (18) months before the latest date set forth in the schedule submitted in accordance with 10 CFR 52.99(a) for completing the inspections, tests, and analyses in the ITAAC, Florida Power & Light Company shall have performed an assessment of on-site and off-site communications systems and equipment relied upon during an emergency event to ensure communications

[22] The generic EP ITAAC in Table C.II.1-B1 of Appendix B to Regulatory Guide (RG) 1.206 are identical to the generic EP ITAAC in Table 14.3.10-1 of Section 14.3.10 to NUREG-0800.

capabilities can be maintained during an extended loss of alternating current power. The communications capability assessment shall be performed in accordance with NEI 12-01, "Guideline for Assessing Beyond Design Basis Accident Response Staffing and Communications Capabilities," Revision 0.

No later than one hundred eighty (180) days before the date scheduled for initial fuel load set forth in the notification submitted in accordance with 10 CFR 52.103(a), Florida Power & Light Company shall have completed implementation of corrective actions identified in the communications capability assessment, including revisions to the Emergency Plan.

(See SER Sections 13.3.4.2 and 13.3.4.6.)

- License Condition (13-5) - No later than eighteen (18) months before the latest date set forth in the schedule submitted in accordance with 10 CFR 52.99(a) for completing the inspections, tests, and analyses in the ITAAC, Florida Power & Light Company shall have performed a detailed staffing analysis, in accordance with NEI 10-05, "Assessment of On-Shift Emergency Response Organization Staffing and Capabilities," Revision 0.

  No later than one hundred eighty (180) days before the date scheduled for initial fuel load set forth in the notification submitted in accordance with 10 CFR 52.103(a), Florida Power & Light Company shall have revised the Emergency Plan to incorporate any changes identified in the staffing analysis that are needed to bring staffing to the required levels.

  (See SER Section 13.3.4.2.)

- License Condition (13-6) - No later than one hundred eighty (180) days before the date scheduled for initial fuel load set forth in the notification submitted in accordance with 10 CFR 52.103(a), Florida Power & Light Company shall submit to the Director of NRO, or the Director's designee, in writing, a fully developed set of plant-specific emergency action levels (EALs), in accordance with NEI 07-01, "Methodology for Development of Emergency Action Levels—Advanced Passive Light Water Reactors," Revision 0, with no deviations. The EALs shall have been discussed and agreed upon with State and local officials.

  (See SER Section 13.3.4.4.)

13.3.6 Conclusions

As described in detail above, the staff reviewed the application, including applicable portions of the referenced AP1000 DCD. The staff confirmed that the applicant addressed the required information relating to emergency planning, and there is no additional information needed to support the Turkey Point Units 6 and 7 COLA. The results of the staff's technical evaluation of the information incorporated by reference in the application are documented in NUREG-1793 and its supplements for the AP1000 DCD.

The EP ITAAC that are applicable to Turkey Point Units 6 and 7 are provided below in SER Table 13.3-1, which reflects the ITAAC in COLA Part 10 Table 3.8-1, and in DCD Tier 1 Table 3.1-1. The staff concludes that, pursuant to 10 CFR 52.80(a), the applicant included in

the Turkey Point COLA 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 met, the facility has been constructed and will operate in conformity with the license, the provisions of the Atomic Energy Act of 1954, as amended, and the NRC's rules and regulations in regard to emergency planning.

As part of its review of the Turkey Point Units 6 and 7 COLA, FEMA provided its findings and determinations concerning the adequacy of offsite emergency planning and preparedness, which are based on its review of State and local emergency plans. FEMA concluded that the offsite State and local emergency plans are adequate to cope with an incident at the Turkey Point site, and there is reasonable assurance that these plans can be implemented. On the basis of its review of the FEMA findings and determinations, the staff concludes that the State and local emergency plans are adequate, and there is reasonable assurance that they can be implemented.

Based on its evaluation, as set forth above, the staff concludes that the onsite emergency plan establishes an adequate planning basis for an acceptable state of onsite emergency preparedness, and there is reasonable assurance that the plan can be implemented.

The staff concludes that the emergency plans provide an adequate expression of the overall concept of operation and describe the essential elements of advanced planning and the provisions made to cope with emergency situations. Therefore, the staff concludes that the overall state of onsite and offsite emergency preparedness, when fully implemented, will meet the requirements of 10 CFR 50.33(g), 10 CFR 50.47, Appendix E to 10 CFR Part 50, 10 CFR 50.72, 10 CFR 52.79(a)(21), 10 CFR 52.79(a)(22)(i), 10 CFR 52.80, 10 CFR 52.83, and 10 CFR 100.21.

Furthermore, pursuant to 10 CFR 50.47(a), the staff concludes that, subject to the required conditions and limitations of the full-power license and satisfactory completion of the ITAAC, there is reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency at the new units, and that emergency preparedness at Turkey Point Units 6 and 7, is adequate to support full-power operations.

Table 13.3-1 Turkey Point Units 6 and 7 ITAAC

Planning Standard	EP Program Elements	Inspections, Tests, Analyses	Acceptance Criteria
1.0 Emergency Classification System			
10 CFR 50.47(b)(4)—A standard emergency classification and action level scheme, the bases of which include facility system and effluent parameters, is in use by the nuclear facility licensee, and State and local response plans call for reliance on information provided by facility licensees for determinations of minimum initial offsite response measures.	1.1 A standard emergency classification and emergency action level (EAL) scheme exists, and identifies facility system and effluent parameters constituting the bases for the classification scheme. [D.1**] [**D.1 corresponds to NUREG-0654/ FEMA-REP-1 evaluation criteria.]	1.1.1 An inspection of the main control room, Technical Support Center (TSC), and Emergency Operations Facility (EOF) will be performed to verify that they have displays for retrieving facility system and effluent parameters as specified in the Emergency Classification and EAL technical basis document for the unit, and the displays are functional.	1.1.1 The specified parameters are retrievable in the main control room, TSC and EOF, and the ranges of the displays encompass the values specified in the Emergency Classification and EAL technical basis document for the unit.
		1.1.2 An analysis of the EAL technical bases will be performed to verify as-built, site-specific implementation of the EAL scheme.	1.1.2 The ranges available in the main control room, TSC, and EOF envelop the values for the specific parameters identified in the EALs in Emergency Plan, Annex 2 and 3, Attachment 1.
2.0 Notification Methods and Procedures			
10 CFR 50.47(b)(5)—Procedures have been established for notification, by the licensee, of State and local response organizations and for notification of emergency personnel by all organizations; the content of initial and follow-up messages to response organizations and the	2.1 The means exist to notify responsible State and local organizations within 15 minutes after the licensee declares an emergency. [E.1]	2.1 A test will be performed to demonstrate the capabilities for providing initial notification to the offsite authorities after a simulated emergency classification.	2.1 The State of Florida and the counties of Miami-Dade, and Monroe received notification within 15 minutes after the declaration of an emergency in the main control room and the EOF.

Planning Standard	EP Program Elements	Inspections, Tests, Analyses	Acceptance Criteria
public has been established; and means to provide early notification and clear instruction to the populace within the plume exposure pathway Emergency Planning Zone (EPZ) have been established.			
	2.2 The means exists to notify emergency response personnel. [E.2]	2.2 A test of the primary and backup emergency response organization (ERO) notification systems will be performed.	2.2 A test of the primary and backup ERO notification systems results in: • ERO personnel received the notification message; • Mobilization communication was validated by personnel response to the notification system or by telephone • Response to electronic notification and plant page system was demonstrated during normal working hours, and off hours.
	2.3 The means exists to notify and provide instructions to the populace within the plume exposure emergency planning zone (EPZ). [E.6]	2.3 A full test of the alert and notification system and emergency alert system capabilities will be conducted.	2.3 Notification and clear instructions to the public are accomplished in accordance with the emergency plan requirements.
3.0 Emergency Communications			
10 CFR 50.47(b)(6)—Provisions exist for prompt communications among principal response organizations to	3.1 The means exists for communications between the main control room, TSC, EOF, principal State and local emergency operations centers (EOCs), and field	3.1 A test will be performed of the capabilities. The test for the contact with the principal EOCs and the field monitoring teams will be from the main control room and the EOF. The TSC	3.1 Communications (both primary and secondary methods/systems) are established among the main control room and the EOF with the State of Florida Division of Emergency Management warning point and EOC,

Planning Standard	EP Program Elements	Inspections, Tests, Analyses	Acceptance Criteria
emergency personnel and to the public.	monitoring teams. [F.1.d]	communication with the main control room and the EOF will be performed.	Miami-Dade County warning point and EOC, and Monroe County warning point and EOC. Communications are established between the main control room and the EOF with the Turkey Point Nuclear Plant (PTN) field monitoring teams.
	3.2 The means exists for communications from the main control room, TSC and EOF to the Nuclear Regulatory Commission (NRC) headquarters and regional office EOCs (including establishment of the emergency response data system (ERDS) or its successor system between the onsite computer system and the NRC operations center). [F.1.f]	3.2 A test is performed of the capabilities to communicate using the emergency notification system from the main control room, TSC and EOF to the NRC headquarters and regional office EOCs. The health physics network is tested to ensure communications between the TSC and EOF with the NRC operations center. The ERDS is established, or its successor system, between the onsite computer systems and the NRC operations center.	3.2 Communications are established from the main control room, TSC and EOF to the NRC headquarters and regional office EOCs using the emergency notification system. The TSC and EOF demonstrated communications with the NRC operations center using the health physics network. The access port for ERDS, or its successor system, is provided and successfully completes a transfer of data from the unit to the NRC operations center.
4.0 Public Education and Information			
10 CFR 50.47(b)7)—Information is made available to the public on a periodic basis on how they will be notified and what their initial actions should be in an emergency (e.g., listening to a local broadcast station and remaining indoors), the principal points of contact with the news media for dissemination of	4.1 The licensee has provided space that may be used for a limited number of news media. [G.3.b]	4.1 An inspection of the facility/area provided for the news media will be performed in the emergency news center (ENC). The space provides adequate equipment to support the ENC operation, including communications with the site and with the EOCs in the State and counties as well as a	4.1 The ENC includes equipment to support the ENC operations, including communications with the EOF and State and county EOCs. Designated space is available for news media briefings.

Planning Standard	EP Program Elements	Inspections, Tests, Analyses	Acceptance Criteria
information during an emergency (including the physical location or locations) are established in advance, and procedures for coordinated dissemination of information to the public are established.		limited number of news media.	
5.0 Emergency Facilities and Equipment			
10 CFR 50.47(b)(8)—Adequate emergency facilities and equipment to support the emergency response are provided and maintained.	5.1 The licensee has established a TSC and onsite operations support center (OSC). [H.1]	5.1 An inspection of the TSC and OSC will be performed, including a test of their capabilities.	5.1.1 The TSC has at least 3,000 square feet of floor space consistent with NUREG-0696 (75 square feet/person) and is large enough for required systems, equipment, records and storage. 5.1.2 The TSC is located outside the Protected Area, and procedures are in place to enhance passage through security checkpoints expeditiously. 5.1.3 Communications equipment is installed and voice transmission and reception are accomplished between the main control room, the OSC, and EOF. 5.1.4 The TSC ventilation system includes a high-efficiency particulate air (HEPA), and charcoal filter and radiation monitors are installed. Controls and displays exist in the TSC to control and monitor the status of the TSC ventilation system including heating and cooling, and the activation of the HEPA and charcoal filter system

Planning Standard	EP Program Elements	Inspections, Tests, Analyses	Acceptance Criteria
			upon detection of high radiation in the TSC. 5.1.5 The TSC has the means to receive, store, process, and display plant and environmental information, as listed in design control document (DCD) Table 7.5-1 and Final Safety Analysis Report (FSAR) Table 7.5-201, and to initiate emergency measures and conduct emergency assessment. 5.1.6 A reliable and backup electrical power supply is available for the TSC. 5.1.7 There is an OSC located inside the Protected Area. It is separate from the main control room. 5.1.8 Communications equipment is installed, and voice transmission and reception are accomplished between the OSC and OSC teams, the TSC and the main control room.
	5.2 The licensee has established an EOF. [H.2]	5.2 An inspection of the EOF will be performed, including a test of the capabilities.	5.2.1 The EOF working space is a minimum of 5625 square feet consistent with NUREG-0696 (75 square feet/person) and is large enough for required systems, equipment, records, and storage. 5.2.2 Communications equipment is installed, and voice transmission and reception are accomplished between the main control room, TSC, EOF, field monitoring teams, NRC,

Planning Standard	EP Program Elements	Inspections, Tests, Analyses	Acceptance Criteria
			State and county agencies, and ENC. 5.2.3 Radiological data identified in each Plan Annex, meteorological data, and plant system data pertinent to determining offsite protective measures as listed in DCD Table 7.5-1 and FSAR Table 7.5-201 are available and displayed in the EOF, when activated.
6.0 Accident Assessment			
10 CFR 50.47(b)(9)—Adequate methods, systems, and equipment for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition are in use.	6.1 The means exist to provide initial and continuing radiological assessment throughout the course of an accident. [I.2]	6.1 A test will be performed to demonstrate that the means exist to provide initial and continuing radiological assessment throughout the course of an accident through the plant computer or communications with the main control room, TSC, and EOF during the course of drills and/or exercises.	6.1 The means are available to provide initial and continuing radiological assessment through displays of instrumentation indicators in the main control room, TSC and EOF during the course of drills and/or exercises.
	6.2 The means exist 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]	6.2 A test will be performed to demonstrate that the means exist 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.	6.2 Emergency plan implementing procedures (EPIPs), through use in training and drills, provide direction to accurately calculate the source terms and the magnitude of the release of postulated accident scenario releases.
	6.3 The means exist to continuously assess the impact of the release of	6.3 A test will be performed to provide evidence that the impact of a radiological	6.3 Demonstrate that the means exist to continuously assess the impact of the release of

Planning Standard	EP Program Elements	Inspections, Tests, Analyses	Acceptance Criteria
	radioactive materials to the environment, accounting for the relationship between effluent monitor readings, and onsite and offsite exposures and contamination for various meteorological conditions. [I.4]	release to the environment is able to be assessed by using the relationship between effluent monitor readings, and onsite and offsite exposures and contamination for various meteorological conditions.	radioactive materials to the environment, accounting for the relationship between effluent monitor readings, and onsite and offsite exposures and contamination for various meteorological conditions under drill conditions.
	6.4 The means exist to acquire and evaluate meteorological information. [I.5]	6.4 A test will be performed to acquire and evaluate meteorological data/ information.	6.4 Meteorological data exists at the EOF, TSC, main control room, offsite NRC operations center, and the State of Florida, and that this data is in the format needed for the appropriate EPIPs.
	6.5 The means exist to determine the release rate and projected doses if the instrumentation used for assessment is off-scale or inoperable. [I.6]	6.5 A test will be performed of the capabilities to determine the release rate and projected doses if the instrumentation used for assessment is off-scale or inoperable.	6.5 The release rate and projected doses can be determined with off-scale or inoperable instrumentation during training or a drill.
	6.6 The means exist for field monitoring within the plume exposure EPZ. [I.7]	6.6 A test will be performed of the capabilities for field monitoring within the plume exposure EPZ.	6.6 The field monitoring teams were dispatched and demonstrated ability to locate and monitor a radiological release within the plume exposure EPZ.
	6.7 The means exist to make rapid assessments of actual or potential magnitude and locations of radiological hazards through liquid or gaseous release pathways, including activation, notification means, field team composition, transportation,	6.7 A test will be performed of the capabilities to make rapid assessments of actual or potential magnitude and locations of radiological hazards through liquid or gaseous release pathways, including activation, notification means, field team composition,	6.7 The field monitoring teams were activated. They demonstrate an ability to make rapid assessment of actual or potential magnitude and locations of any radiological hazards through simulated liquid or gaseous release pathways. A qualified field monitoring team was notified, activated, briefed, and dispatched from the

Planning Standard	EP Program Elements	Inspections, Tests, Analyses	Acceptance Criteria
	communication, monitoring equipment, and estimated deployment times. [I.8]	transportation, communication, monitoring equipment, and estimated deployment times.	EOF during a radiological release scenario. The team demonstrated the procedural guidance in team composition, use of monitoring equipment, communication from the field, and locating specific sampling locations.
	6.8 The capability exists to detect and measure radioiodine concentrations in air in the plume exposure EPZ, as low as 10^{-7} µCi/cc (microcuries per cubic centimeter) under field conditions. [I.9]	6.8 A test will be performed of the capabilities to detect and measure radioiodine concentrations in air in the plume exposure EPZ, as low as 10^{-7} µCi/cc under field conditions.	6.8 A field monitoring team was dispatched during a radiological release scenario and demonstrated the use of sampling and detection equipment for air concentrations in the plume exposure EPZ, as low as 10^{-7} µCi/cc.
	6.9 The means exist to estimate integrated dose from the projected and actual dose rates, and for comparing these estimates with the Environmental Protection Agency (EPA) protective action guides. [I.10]	6.9 A test will be performed of the capabilities to estimate integrated dose from the projected and actual dose rates, and for comparing these estimates with the EPA protective action guides.	6.9 The means are available to estimate integrated dose from the dose assessment program and the field monitoring team reading during a radioactive release scenario. The results were compared with the EPA protective action guides.
7.0 Protective Response			
10 CFR 50.47(b)(10)—A range of protective actions has been developed for the plume exposure EPZ for emergency workers and the public. In developing this range of actions, consideration has been given to evacuation, sheltering, and, as a supplement to these, the prophylactic use	7.1 The means exist to warn and advise onsite individuals of an emergency, including those in areas controlled by the operator, including: [J.1] • employees not having emergency assignments • visitors	7.1 A test will be performed of the capabilities to warn and advise onsite individuals of an emergency, including those in the Owner-Controlled Area, and the immediate vicinity.	7.1 Means exist to successfully warn and advise onsite individuals including: • nonessential employees • visitors • contractor and construction personnel • other personnel within the Owner-Controlled Area, and the immediate vicinity.

Planning Standard	EP Program Elements	Inspections, Tests, Analyses	Acceptance Criteria
of potassium iodide (KI), as appropriate. Guidelines for the choice of protective actions during an emergency, consistent with Federal guidance, are developed and in place, and protective actions for the ingestion exposure EPZ appropriate to the locale have been developed.	• contractor and construction personnel • other persons who may be in the public access areas, on or passing through the site, or within the Owner-Controlled Area.		
8.0 Exercises and Drills			
10 CFR 50.47(b)(14)— Periodic exercises are (will be) conducted to evaluate major portions of emergency response capabilities, periodic drills are (will be) conducted to develop and maintain key skills, and deficiencies identified as a result of exercises or drills are (will be) corrected.	8.1 Licensee conducts a full participation exercise to evaluate major portions of emergency response capabilities, which includes participation by the State and local agency within the plume exposure EPZ, and the State within the ingestion control EPZ. [N.1]	8.1 A full participation exercise (test) will be conducted within the specified time periods of Appendix E to 10 CFR Part 50.	8.1.1 The exercise is completed within the specified time periods of 10 CFR Part 50, Appendix E; onsite exercise objectives listed below have been met, and there are no uncorrected onsite exercise deficiencies. A. *Accident Assessment and Classification* 1. Demonstrate the ability to identify initiating conditions, determine emergency action level (EAL) parameters, and correctly classify the emergency throughout the exercise. Standard Criteria: a. Determine the correct highest emergency classification level based on events which were in progress, considering past events and their impact on the current conditions, within 15 minutes from the time the initiating condition(s) or EAL is identified.

Planning Standard	EP Program Elements	Inspections, Tests, Analyses	Acceptance Criteria
			B. *Notifications* 1. Demonstrate the ability to alert, notify and mobilize site emergency response personnel. Standard Criteria: a. Complete the designated checklist and perform the announcement concerning the initial event classification of Alert or higher. b. Activate the emergency recall system within 5 minutes of the initial event classification for an Alert or higher. 2. Demonstrate the ability to notify responsible State and local government agencies within 15 minutes and the NRC within 60 minutes after declaring an emergency. Standard Criteria: a. Transmit information using the designated checklist in accordance with approved EPIPs within 15 minutes of event classification. b. Transmit information using the designated checklist in accordance with approved EPIPs within 60 minutes of last transmittal for a follow-up notification to State and local authorities. c. Transmit information using designated checklist within 60 minutes of event classification for an initial notification of the NRC. 3. Demonstrate the ability to warn or advise onsite

Planning Standard	EP Program Elements	Inspections, Tests, Analyses	Acceptance Criteria
			individuals of emergency conditions. Standard Criteria: a. Initiate notification of onsite individuals (via plant page or telephone) using designated checklist. 4. Demonstrate the capability of the Alert and Notification System (ANS) for the public, to operate properly when required. Standard Criteria: a. ≥94 percent of the sirens operate properly as indicated by the siren feedback system. C. *Emergency Response* 1. Demonstrate the capability to direct and control emergency operations. Standard Criteria: a. Command and control is demonstrated by the main control room in the early phase of the emergency and by the TSC within 60 minutes from notification of an Alert or higher event classification with at least minimum staffing. 2. Demonstrate the ability to transfer emergency direction from the main control room (simulator) to the TSC. Standard Criteria: a. Evaluation of briefings that were conducted prior to turnover responsibility. Personnel document transfer of duties.

Planning Standard	EP Program Elements	Inspections, Tests, Analyses	Acceptance Criteria
			3. Demonstrate the ability to prepare for 24-hour staffing requirements. Standard Criteria: a. Complete 24-hour staff assignments. 4. Demonstrate the ability to perform assembly and accountability for all personnel in the Protected Area within 30 minutes of an emergency requiring Protected Area assembly and accountability. Standard Criteria: a. Protected Area personnel assembly and accountability completed within 30 minutes of an emergency requiring Protected Area assembly and accountability. D. *Emergency Response Facilities* 1. Demonstrate activation of the OSC and the TSC and EOF within 60 minutes of event classification with at least minimum staffing. Standard Criteria: a. The TSC and OSC are activated within 60 minutes from notification of an Alert or higher event classification with at least minimum staffing. b. The EOF is activated within 60 minutes from notification of a Site Area Emergency or higher event classification with at least minimum staffing. 2. Demonstrate the adequacy of equipment, security provisions, and

Planning Standard	EP Program Elements	Inspections, Tests, Analyses	Acceptance Criteria
			habitability precautions for the TSC, OSC, EOF and ENC, as appropriate. Standard Criteria: a. Evaluation of the adequacy of the emergency equipment in the emergency response facilities including availability and general consistency with the EPIPs. b. The security manager implements and follows applicable EPIPs. c. The radiation protection manager (TSC) implements the designated checklist if an onsite/offsite release has occurred. d. Demonstrate the capability of TSC and EOF equipment and data displays to clearly identify and reflect the affected unit. 3. Demonstrate the adequacy of communications for all emergency support resources. Standard Criteria: a. Emergency response communications listed in the EPIPs are available and operational. b. Communications systems are tested in accordance with the TSC, OSC, EOF and ENC activation checklists. c. Emergency response facility personnel are able to operate all specified communications systems.

Planning Standard	EP Program Elements	Inspections, Tests, Analyses	Acceptance Criteria
			d. Clear primary and backup communications links are established and maintained for the duration of the exercise. E. *Radiological Assessment and Control* 1. Demonstrate the ability to obtain onsite radiological surveys and samples. Standard Criteria: a. Radiation Protection Technicians demonstrate the ability to obtain appropriate instruments (range and type) and perform surveys. b. Airborne samples are taken when the conditions indicate the need for the information. 2. Demonstrate the ability to continuously monitor and control radiation exposure to emergency workers. Standard Criteria: a. Emergency workers are issued self-reading dosimeters when radiation levels require, and exposures are controlled to 10 CFR Part 20 limits (unless the emergency coordinator authorizes emergency limits for onsite ERO personnel and the emergency offsite manager authorizes emergency exposures for offsite ERO personnel). b. Exposure records are available either from the Site database or a hard copy dose report.

Planning Standard	EP Program Elements	Inspections, Tests, Analyses	Acceptance Criteria
			c. Emergency workers include Security and personnel within all emergency facilities. 3. Demonstrate the ability to assemble and dispatch field monitoring teams within 60 minutes from the decision to do so. Standard Criteria: a. One field monitoring team is ready to be deployed within 60 minutes of being requested and no later than 90 minutes from the declaration of an Alert or higher. 4. Demonstrate the ability to satisfactorily collect and disseminate field team data. Standard Criteria: a. Field team data to be collected is dose rate or counts per minute (cpm) from the plume, both open and closed window, and air sample (gross/net cpm) for particulate and iodine, if applicable. b. Radiological data is satisfactorily disseminated from the field team to the dose assessment coordinator. 5. Demonstrate the ability to develop dose projections. Standard Criteria: a. The on-shift Chemistry Technician performs timely and accurate dose projections, in accordance with the EPIPs. 6. Demonstrate the ability to develop appropriate

Planning Standard	EP Program Elements	Inspections, Tests, Analyses	Acceptance Criteria
			Protective Action Recommendations (PARs), and notify appropriate authorities within 15 minutes of a General Emergency declaration or changes in parameters that affect the previously issued PARs. Standard Criteria: a. Total Effective Dose Equivalent (TEDE) and Committed Dose Equivalent (CDE) dose projections from the dose assessment computer code or a backup method are established in accordance with the EPIPs. b. PARs are developed within 15 minutes of data availability. c. PARs are transmitted via voice, fax, or electronically within 15 minutes as required by the EPIPs.
			8.1.2 Onsite emergency response personnel were mobilized in sufficient numbers to fill emergency response positions identified in the Radiological Emergency Plan, Part 2, Section B, Emergency Response Organization, and they successfully performed their assigned responsibilities.
			8.1.3 The exercise was completed within the specified time periods of Appendix E to 10 CFR Part 50, offsite exercise objectives were met, and there were no

Planning Standard	EP Program Elements	Inspections, Tests, Analyses	Acceptance Criteria
			uncorrected offsite exercise deficiencies, or a license condition requires offsite deficiencies to be corrected prior to operation above 5 percent of rated power.
9.0 Implementing Procedures			
10 CFR Part 50, Appendix E.V—No less than 180 days prior to the scheduled issuance of an operating license for a nuclear power reactor or a license to possess nuclear material, the applicant's detailed implementing procedures for its emergency plan shall be submitted to the Commission.	9.1 The licensee has submitted detailed implementing procedures for its emergency plan no less than 180 days prior to fuel load.	9.1 Confirm that the submittal letter was submitted on time.	9.1 The date of the submittal letter from the licensee demonstrates that the detailed EPIPs for the onsite emergency plan were submitted no less than 180 days prior to fuel load.

13.4 Operational Programs (Related to RG 1.206, Section C.III.1, Chapter 13, C.I.13.4, "Operational Program Implementation")

13.4.1 Introduction

In SECY-05-0197, the staff detailed its plan for reviewing operational programs in a COLA. The Commission approved the staff's plan in the related Staff Requirements Memorandum (SRM), dated February 22, 2006. Although numerous programs support the operation of a nuclear power plant, SECY-05-0197 focused on those programs that meet the following three criteria:

1. Required by regulation
2. Reviewed in a COLA
3. Inspected to verify program implementation as described in the FSAR

The programs that meet the above criteria are collectively referred to as "operational programs" and most are identified in SECY-05-0197.

13.4.2 Summary of Application

Section 13.4 of the Turkey Point Units 6 and 7 COL FSAR, Revision 8, incorporates by reference Section 13.4 of the AP1000 DCD, Revision 19.

In addition, in Turkey Point Units 6 and 7 COL FSAR Section 13.4 and in Part 10 of the Turkey Point Units 6 and 7 COLA, "Proposed License Conditions and ITAAC," the applicant provided the following:

AP1000 COL Information Item

- STD COL 13.4-1

The applicant provided additional information in STD COL 13.4-1 to address COL Information Item 13.4-1 and COL Action Item 13.4-1, identified in Appendix F of NUREG-1793 and its supplements. This item states that COL applicants referencing the AP1000 certified design will address each operational program.

License Conditions

- Part 10, License Condition 3, "Operational Program Implementation"
- Part 10, License Condition 6, "Operational Program Readiness"

Both license conditions are related to STD COL 13.4-1. License Condition 3 addresses implementation milestones for those operational programs whose implementation is not addressed in the regulations. License Condition 6 includes the timing of information related to operational programs to support NRC inspection activities.

13.4.3 Regulatory Basis

The regulatory basis of the information incorporated by reference is addressed in NUREG-1793 and its supplements.

In addition, the regulatory basis for acceptance of the supplementary information presented in this application is identified in the individual chapters of this SER that address the evaluations of the specific operational programs, which are itemized in the next section, as clarified by the regulatory guidance in SECY-05-0197 and RG 1.206.

13.4.4 Technical Evaluation

The staff reviewed Section 13.4 of the Turkey Point Units 6 and 7 COL FSAR and checked the referenced DCD to ensure that the combination of the DCD and the COLA represents the complete scope of information relating to this review topic.[1] The staff's review confirmed that the information in the application and incorporated by reference addresses the required information relating to operational programs. The results of the staff's evaluation of the information incorporated by reference in the Turkey Point Units 6 and 7 COLA are documented in NUREG-1793 and its supplements.

Section 1.2.3 of this SER provides a discussion of the strategy used by the NRC to perform one technical review for each standard issue outside the scope of the DC and use this review in evaluating subsequent COLAs. To ensure that the staff's findings on standard content that were documented in the SER for the reference COLA (VEGP Units 3 and 4) were equally applicable to the Turkey Point Units 6 and 7 COLA, the staff undertook the following reviews:

- The staff compared the VEGP COL FSAR, Revision 5 to the Turkey Point Units 6 and 7 COL FSAR. In performing this comparison, the staff considered changes made to the Turkey Point Units 6 and 7 COL FSAR (and other parts of the COLA, as applicable) resulting from RAIs.

- The staff confirmed that all responses to RAIs identified in the corresponding standard content evaluation were endorsed.

- The staff verified that the site-specific differences were not relevant.

The staff has completed its review and has verified that the Turkey Point Units 6 and 7 application incorporates the standard content information included in the Vogtle application. Accordingly, the staff finds the evaluation performed for the standard content to be directly applicable to the Turkey Point Units 6 and 7 COLA. This standard content material is identified in this SER by use of italicized, double-indented formatting. Section 1.2.3 of this SER provides an explanation of why the standard content material from the SER for the reference COLA (VEGP) includes evaluation material from the SER for the Bellefonte Nuclear Plant (BLN) Units 3 and 4 COLA. In addition, the Staff did not pose any RAIs to FPL regarding the standard content described above, and there was no need to evaluate any information in addition to the standard content.

The following portion of this technical evaluation section is reproduced from Section 13.4.4 of the VEGP SER:

> *Although the staff concluded that the evaluation performed for the standard content is directly applicable to the VEGP COL application, there were differences in the response provided by the VEGP applicant from that provided by the BLN applicant regarding the standard content material. These differences affect the two license conditions and the table listing the operational programs. These differences are evaluated by the staff below, following the standard content material.*
>
> *<u>AP1000 COL Information Item</u>*
>
> - *STD COL 13.4-1*
>
> *The applicant provided supplemental information by adding the following statement to Section 13.4 of the VEGP COL FSAR:*
>
> *Operational programs are specific programs that are required by regulations. Table 13.4-201 lists each operational program, the regulatory source for the program, the section of the FSAR in which the operational program is described, and the associated implementation milestone(s).*
>
> *Each operational program is evaluated by the staff in the applicable SER chapters.*

License Conditions

- *License Condition 3, "Operational Program Implementation"*
- *License Condition 6, "Operational Program Readiness"*

These two proposed license conditions are evaluated by the NRC staff as part of its evaluation of each of the operational programs in the applicable SER chapters.

The following portion of this technical evaluation section provides the staff's general evaluation of the operational programs and associated license conditions and is reproduced from Section 13.4.4 of the BLN SER:

The NRC staff's review of the acceptability of the supplemental information added by STD COL 13.4-1 and the proposed license conditions is based on four considerations. The first consideration is the acceptability of the individual operational programs, including the implementation of the different phases of these operational programs. The second consideration is whether the applicant correctly identified those operational programs whose implementation requirements are not addressed in the regulations, and, therefore, need to be included in License Condition 3. The third consideration is whether the applicant correctly specified in License Condition 6 the timing of information related to operational programs to support NRC inspection activities. The fourth consideration is whether the list of operational programs in BLN COL FSAR Table 13.4-201 is complete.

In regard to the first consideration, the SER sections referenced in the above table address the NRC staff's regulatory evaluation of the individual operational programs. For each of these operational programs, the staff has either concluded that the applicant has satisfied the applicable regulatory guidance (including the implementation requirements when specified in the regulations), or the staff's review is still ongoing. For those operational program reviews that are ongoing, the staff's final conclusions will be provided in the SER sections referenced in the above table at a later date.

In regard to the second consideration, the NRC staff verified that those operational programs, whose implementation requirements are not specified in the regulations, are captured in License Condition 3.

In regard to the third consideration, the NRC staff compared License Condition 6 to the recommended license condition in SECY-05-0197 related to the timing of information to support NRC inspection activities of operational programs. The staff finds that the applicant used language similar to the recommended license condition specified in SECY-05-0197 to develop License Condition 6. It should be noted that License Condition 6 addresses additional scheduler requirements (Sections b. through d.) that are not related to the operational programs evaluated in this section of the SER, and, therefore, are not evaluated in this SER section.

In regard to the fourth consideration, the NRC staff compared the operational programs provided by the applicant in BLN COL FSAR Table 13.4-201 (included

in the above table) to the operational programs specified in SECY-05-0197. The staff finds that the applicant has included all the operational programs specified in SECY-05-0197, including the two operational programs (Motor-Operated Valve Testing Program and the Safeguards Contingency Program) added by the NRC to the list of operational programs provided by the NEI in its letter dated August 31, 2005.

There are differences between BLN COL FSAR Table 13.4-201 and the table of operational programs in SECY-05-0197 with respect to implementation milestone information. The first difference is the SECY paper states that there are no required implementation milestones in the regulations for the Maintenance Rule Program and the Quality Assurance Program (Operation), while BLN COL FSAR Table 13.4-201 references regulations that require implementation milestones for these two programs. The staff has reviewed the regulation references provided by the applicant and concludes that they do provide appropriate requirements for implementation milestones. Further support for this conclusion is the regulatory guidance in Section C.I.13.4 of RG 1.206. The example table located in this section of the RG references the same implementation regulatory guidance for the Maintenance Rule Program and the Quality Assurance Program (Operation) as does BLN COL FSAR Table 13.4-201.

The second difference is that the SECY paper states that 10 CFR Part 50, Appendix J, specifies implementation requirements for the Containment Leakage Rate Testing Program, while BLN COL FSAR Table 13.4-201 states that the implementation milestones for this program will be controlled by a license condition. The staff has reviewed the implementation milestone proposed in License Condition 3 for the Containment Leakage Rate Testing Program, and finds that it is more stringent than the regulatory guidance in Appendix J. Therefore, the staff finds this difference to be acceptable.

The applicant added an operational program to BLN COL FSAR Table 13.4-201, the Initial Test Program, which is not in the list of operational programs specified in SECY-05-0197. The option of adding operational programs to this list is specifically allowed by SECY-05-0197. Further support for the acceptability of adding the Initial Test Program is that the example table located in Section C.I.13.4 of RG 1.206 also lists this operational program.

Therefore, the NRC staff concludes that the additional information (STD COL 13.4-1) provided by the applicant in BLN COL FSAR Section 13.4, in conjunction with the conditions specified in BLN COL FSAR, Part 10, License Conditions 3 and 6, complies with the applicable regulatory guidance provided in SECY-05-0197.

Evaluation of Site-specific Response to Standard Content

The staff notes that the VEGP applicant separated the fitness-for-duty (FFD) program from the overall security program and added a new operational program, Cyber Security, to the list of operational programs in FSAR Table 13.4-201. The implementation requirements for these additional operational programs comply with the considerations identified above in the standard content material, and are, therefore, acceptable. In addition, the VEGP

applicant also made minor changes to operational program implementation details in License Condition 3 and also modified Sections a. through d. associated with License Condition 6. The changes to these two license conditions are evaluated by the staff in the applicable SER chapters and do not affect the evaluation of operational programs covered in this section of the SER. Therefore, the conclusions reached by the NRC staff related to STD COL 13.4-1 are directly applicable to the VEGP COL application.

The BLN SER text refers to an SER table listing operational programs. This table was not reproduced for the VEGP SER since it duplicates the information in VEGP COL FSAR Table 13.4-201.

The staff notes that standard format License Condition 6, "Operational Program Readiness" identified above (under "*License Conditions*") was modified in the Vogtle Unit 3 and 4 licenses to cover all operational programs in a single license condition. For the reasons discussed in the technical evaluation section above, the substance of the requirements of License Condition 6 acceptable, and the substance of those requirements will be included in the license in a more general condition that covers the implementation of all programs as follows:

- License Condition 6:

No later than 12 months after issuance of the COL, FPL shall submit to the Director of NRO, or the Director's designee, a schedule for implementation of the operational programs listed in FSAR Table 13.4-201, including the associated estimated date for initial loading of fuel. The schedule shall be updated every 6 months until 12 months before scheduled fuel loading, and every month thereafter until all the operational programs listed in FSAR Table 13.4-201 have been fully implemented.

The NRC will conform the above license condition to the general format (numbering, etc.) of a license, if any, issued for Turkey Point Units 6 and 7. The staff also notes that the Turkey Point Units 6 and 7 applicant added the operational program, Special Nuclear Material Control and Accounting Program, to the list of operational programs in FSAR Table 13.4-201. The implementation requirements for this additional operational program comply with the considerations identified above in the standard content material and is therefore acceptable.

13.4.5 Post Combined License Activities

The license conditions for each of the operational programs are discussed in the applicable SER chapters. Therefore, there are no post-COL activities related to this section. As discussed above, however, the form and content of these license conditions may need to be modified to conform to the general format of any license that may be issued.

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 relevant information relating to this section, and no outstanding information related to this section remains to be addressed in the Turkey Point Units 6 and 7 COL FSAR. The results of the staff's technical evaluation of the information incorporated by reference in the Turkey Point Units 6 and 7 COLA are documented in NUREG-1793 and its supplements.

The staff concludes that the relevant information presented in the Turkey Point Units 6 and 7 COL FSAR is acceptable based on the regulatory guidance in SECY-05-0197, in conjunction with the applicable regulations specified in the individual sections of this SER that evaluated each of the operational programs discussed above. The staff based its conclusion on the following:

- STD COL 13.4-1, as related to operational programs, is acceptable because each of the operational programs in Turkey Point Units 6 and 7 COL FSAR Table 13.4-201 has been found acceptable by the staff in other sections of this SER, as noted in Section 13.4.4 above. In addition, the guidance in SECY-05-0197 and RG 1.206 was used to verify that the applicant's list of operational programs is complete.

13.5 Plant Procedures

13.5.1 Introduction

Descriptions of the administrative and operating procedures that the applicant uses to ensure routine operating, off-normal, and emergency activities are conducted in a safe manner are provided. The applicant, in its plant procedures, provided a brief description of the nature and content of the procedures and a schedule for the preparation of appropriate written administrative and operating procedures. The applicant delineated in the description of the procedures the functional position for procedural revision and approval prior to implementation. Inspection of procedures will occur as part of the construction inspection program.

13.5.2 Summary of Application

Section 13.5 of the Turkey Point Units 6 and 7 COL FSAR, Revision 8, incorporates by reference Section 13.5 of the AP1000 DCD, Revision 19.

In addition, in Turkey Point Units 6 and 7 COL FSAR Section 13.5, the applicant provided the following:

AP1000 COL Information Item

- STD COL 13.5-1

The applicant provided additional information in STD COL 13.5-1 to resolve COL Information Item 13.5-1 (COL Action Item 13.5-1), which addresses plant procedures.

- PTN COL 13.5-1

The applicant provided additional information in PTN COL 13.5-1 to address standing orders to shift personnel and to address the nuclear shift manager's administrative duties.

The applicant also provided additional information in PTN COL 13.5-1 to address a process for implementing 10 CFR 73.58, "Safety/Security Interface Requirements for Nuclear Power Reactors," while the security procedures and the emergency plan implementing procedures are being developed and implemented. This information is reviewed in Section 13.6.4.1.17 of the SER.

13.5.3 Regulatory Basis

The regulatory basis of the information incorporated by reference is addressed in NUREG-1793 and its supplements.

In addition, the acceptance criteria associated with the relevant requirements of the Commission regulations for plant procedures are given in Sections 13.5.1.1 and 13.5.2.1 of NUREG-0800.

The applicable regulations are as follows:

- 10 CFR 50.34(a), "Preliminary safety analysis report"
- 10 CFR 50.34(b), "Final safety analysis report"
  - The applicable regulatory guidance is as follows:

- RG 1.33, "Quality Assurance Program Requirements (Operation)"

13.5.4 Technical Evaluation

The staff reviewed Section 13.5 of the Turkey Point Units 6 and 7 COL FSAR and checked the referenced DCD to ensure that the combination of the DCD and the COLA represents the complete scope of information relating to this review topic.[1] The staff's review confirmed that the information in the application and incorporated by reference addresses the required information relating to plant procedures. The results of the staff's evaluation of the information incorporated by reference in the Turkey Point Units 6 and 7 COLA are documented in NUREG-1793 and its supplements.

Section 1.2.3 of this SER provides a discussion of the strategy used by the NRC to perform one technical review for each standard issue outside the scope of the DC and use this review in evaluating subsequent COLAs. To ensure that the staff's findings on standard content that were documented in the SER for the reference COLA (VEGP Units 3 and 4) were equally applicable to the Turkey Point Units 6 and 7 COLA, the staff undertook the following reviews:

- The staff compared the VEGP COL FSAR, Revision 5 to the Turkey Point Units 6 and 7 COL FSAR. In performing this comparison, the staff considered changes made to the Turkey Point Units 6 and 7 COL FSAR (and other parts of the COLA, as applicable).

- The staff confirmed that all responses to VEGP COL FSAR RAIs identified in the corresponding standard content evaluation were endorsed.

- The staff verified that the site-specific differences were not relevant.

The staff has completed its review and has verified that the Turkey Point Units 6 and 7 application incorporates the standard content information included in the Vogtle application. Accordingly, the staff finds the evaluation performed for the standard content to be directly applicable to the Turkey Point Units 6 and 7 COLA. This standard content material is identified in this SER by use of italicized, double-indented formatting. Section 1.2.3 of this SER provides an explanation of why the standard content material from the SER for the reference COLA (VEGP) includes evaluation material from the SER for the BLN Units 3 and 4 COLA.

The following portion of this technical evaluation section is reproduced from Section 13.5.4 of the VEGP SER:

AP1000 COL Information Item

- *STD COL 13.5-1, addressing plant procedures*

The applicant provided the following additional information to resolve COL Information Item 13.5-1, which addresses the plant procedures of the COL applicant. COL Information Item 13.5-1 states:

> *Combined License applicants referencing the AP1000 certified design will address plant procedures including the following:*
>
> - *Normal operation*
> - *Abnormal operation*
> - *Emergency operation*
> - *Refueling and outage planning*
> - *Alarm response*
> - *Maintenance, inspection, test and surveillance*
> - *Administrative*
> - *Operation of post-72 hour equipment*

The commitment was also captured as COL Action Item 13.5-1 in Appendix F of the staff's FSER for the AP1000 DCD (NUREG-1793).

The applicant provided additional text in BLN COL FSAR Section 13.5 to describe the administrative, operating and maintenance procedures that the operating organizational staff uses to conduct routine operating, abnormal, and emergency activities in a safe manner.

In BLN COL FSAR Section 13.5, the applicant described the different classifications of procedures that the operators will use, including normal, abnormal, emergency, refueling and outage, and alarm response procedures. The staff finds this information acceptable because it meets the criteria in NUREG-0800, Chapter 13.5.2.1.

In BLN COL FSAR Section 13.5, the applicant stated that the format and content of procedures are controlled by the applicable AP1000 writer's guideline. The DCD, Section 13.5.1, describes a referenced document, APP-GW-GLR-040, "Plant Operations Maintenance and Surveillance Procedures," dated August 23, 2007, which includes the AP1000 writer's guidelines. The staff finds this acceptable because the applicant-provided procedure format and content are consistent with the guidance in NUREG-0800, Section 13.5.2.1.

In BLN COL FSAR Section 13.5.1, the applicant describes the nature and content of administrative procedures for both Category (A) - Controls, and Category (B) - Specific Procedures. The staff finds this acceptable because the listed procedures are consistent with the guidance in NUREG-0800, Section 13.5.1.1.

In BLN COL FSAR Section 13.5.2, the applicant stated that EP procedures are discussed in the Emergency Plan and that security procedures are discussed in the Security Plan. The evaluation of EP procedures may be found in Section 13.3 of this SER. The evaluation of security procedures is found in Section 13.6 of this SER.

In BLN COL FSAR Section 13.5.2, the applicant stated the Quality Assurance Program description (QAPD) provides a description of procedural requirements for maintenance, instrument calibration and testing, inspection, and material control. The evaluation of QAPD procedures is found in Section 17.5 of this SER.

In BLN COL FSAR, Section 13.5.2.1, the applicant stated that information related to EOPs is addressed in the DCD. The DCD, Section 13.5.1, describes the program for developing and implementing EOPs and the required content of EOPs procedures in the referenced document, APP-GW-GLR-040. In addition, this information clarifies the procedure development program (PDP) as described in the procedures generation package (PGP) for EOPs, provides a description of the EOP [emergency operating procedures] *verification and validation (V&V) program, and describes the program for training operators on EOPs, including an explanation of how the recommendations of TMI Action Plan, Item I.C.1, will be met. The staff finds the program for developing and implementing EOPs acceptable because it meets the criteria in NUREG-0800, Section 13.5.2.1.*

Evaluation of Plant Procedure Issues Not Address in the Standard Content Evaluation

In VEGP COL FSAR Table 1.9-202, "Conformance with SRP Acceptance Criteria," the applicant identified two exceptions to the criteria of NUREG-0800, Section 13.5, which recommend[s] *providing a schedule for procedure development in the FSAR, and including a description of procedures to be used by operators in the FSAR. The staff notes that the BLN COL FSAR Table 1.9-202 includes these same two exceptions to the criteria of Section 13.5 of NUREG-0800. The guidance of NUREG-0800, Section 13.5.2.1, states that while the submittal should describe the different classifications of procedures that operators will use, it is not necessary that each applicant's procedures conform precisely. In addition, the procedures, regardless of title or classification, are to be available to accomplish the functions identified in RG 1.33. NUREG-0800 makes allowance for "general areas." The staff finds the two exceptions to the criteria of NUREG-0800, Section 13.5 to be acceptable because the applicant's procedure classification follows the guidance in NUREG-0800, Section 13.5.*

In RAI [request for additional information] *13.6-36, the staff requested the VEGP applicant address the requirements of 10 CFR 73.58, "Safety/security requirements for nuclear power plants." In its response dated May 14, 2010, the applicant stated that management controls and processes used to establish and maintain an effective interface between nuclear safety and physical security are addressed by administrative controls. The VEGP applicant committed to revise FSAR Section 13.5.1 to include the safety/security interface implementation process in the list of procedural instructions provided in plant administrative procedures. The NRC staff's review of this safety/security procedural issue,*

which includes tracking the incorporation of the relevant material into the VEGP COL application, is addressed in Section 13.6.4.1.17 of this SER.

Supplemental Information

- PTN COL 13.5-1

The staff reviewed PTN COL 13.5-1 related to the applicant providing procedural instructions for standing orders for shift personnel, including the authority and responsibility of the shift manager, unit supervisor, reactor control operator, and shift technical advisor. The staff finds these changes acceptable as they are only changes of position title and meet the guidance of NUREG-0800, Section 13.5.1.1.

The applicant provided additional information in FSAR Section 13.5.1 related to the process for implementing the safety/security interface requirements of 10 CFR 73.58. This information is reviewed in Section 13.4.1.17 of the SER.

The Turkey Point Units 6 and 7 application incorporates the standard content information included in the Vogtle application and there is no additional Turkey Point specific information that required evaluation by the staff and as such the Staff did not pose any RAIs to FPL on this section as described above. The staff finds the evaluation performed for the standard content to be directly applicable to the Turkey Point Units 6 and 7 COLA.

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. The staff's review confirmed that the applicant has addressed the relevant information relating to this section, and no outstanding information related to this section remains to be addressed in the Turkey Point Units 6 and 7 COL FSAR. The results of the staff's technical evaluation of the information incorporated by reference in the Turkey Point Units 6 and 7 COLA are documented in NUREG-1793 and its supplements.

In addition, the staff concludes that the relevant information presented in the Turkey Point Units 6 and 7 COL FSAR is acceptable and meets the recommendations of NUREG-0800, Sections 13.5.1.1 and 13.5.2.1. The staff based its conclusion on the following:

- STD COL 13.5-1, as related to plant procedures, is acceptable because it describes the procedures used by the applicant's operating organizational staff to conduct routine administrative, operating, abnormal, and emergency activities in a safe manner, in accordance with the regulatory guidance in NUREG-0800, Sections 13.5.1.1 and 13.5.2.1.

- In Turkey Point Units 6 and 7 COL FSAR Table 1.9-202, the applicant identified two exceptions to the criteria of NUREG-0800, Section 13.5, related to providing FSAR descriptions of, and a development schedule for, procedures to be used by operators. The guidance of NUREG-0800, Section 13.5.2.1, makes allowances for "general areas,"

stating that while the FSAR submittal should describe the different classifications of procedures used by operators, it is not expected that each applicant's procedures conform precisely. The staff finds the two exceptions to be acceptable because the applicant's procedure classification follows the guidance in RG 1.33.

13.6 Physical Security

13.6.1 Introduction

The COLA for the Turkey Point Units 6 and 7 describes the COL applicant's physical protection program, which is intended to meet NRC regulations for protection against the design-basis threat (DBT) of radiological sabotage as stated in 10 CFR 73.1, "Purpose and Scope," and provide a 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.

The physical protection program includes the design of a physical protection system that ensures the capabilities to detect, assess, interdict, and neutralize threats of radiological sabotage are maintained at all times. The applicant incorporates by reference the standard AP1000 design that includes design of physical protection systems within the design of the vital island and vital structures, as described in the Westinghouse DC document for the AP1000 standard design Tier 1 and Tier 2 information, including TR-49, "AP1000 Enhancement Report"; TR-94; "AP1000 Safeguards Assessment Report"; and TR-96, "Interim Compensatory Measures Report." Part 8 of the COLA consists of the Turkey Point Units 6 and 7 Physical Security Plan (PSP), Training and Qualification Plan (T&QP), and Safeguards Contingency Plan (SCP). Section 13.6 of the Turkey Point COL FSAR describes the physical protection program and the physical protection system that are not addressed within the scope of the standard AP1000 design for meeting NRC performance and prescriptive requirements for physical protection stated in 10 CFR Part 73, "Physical Protection of Plants and Material." The staff evaluation of the physical protection program is provided in detail in the safeguards information version of the Turkey Point Units 6 and 7 COLA Section 13.6 SER, and includes a complete set of the staff bases for its findings regarding the program. Because of security constraints, the staff 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 need-to-know may view the safeguards information version of the Turkey Point COLA Section 13.6 SER, which is located in the NRC's Secure Local Area Network.

13.6.2 Summary of Application

Section 13.6 of the Turkey Point Units 6 and 7 COL FSAR, Revision 8, incorporates by reference Section 13.6 of the AP1000 DCD, Revision 19.

Part 8—Safeguards/Security Plans

In a letter dated June 30, 2009, FPL, submitted a Security Plan to the NRC as part of the COLA for proposed Turkey Point Units 6 and 7. In a letter dated September 3, 2010, FPL submitted Revision 1 to the Security Plan. In a letter dated December 21, 2010, FPL submitted Revision 2 to its Security Plan. In a letter dated December 16, 2011, FPL submitted Revision 3 to its Security Plan.

In addition, in Turkey Point Units 6 and 7 COL FSAR Section 13.6, the applicant provided the following:

AP1000 COL Information Items

- STD COL 13.6-1

The applicant provided additional information in STD COL 13.6-1 to address COL Information Item 13.6-1, which provides information related to the security plan. The security plan consists of three parts, the PSP, T&QP, and SCP.

- STD COL 13.6-5

The applicant provided additional information in STD COL 13.6-5 to address COL Information Item 13.6-5, which provides information related to the cyber security program. This COL item is evaluated in Section 13.8 of this SER.

License Conditions

- Part 10, License Condition 3, Items C.5, D.3, and G.9

The applicant proposed a license condition in Part 10 of the Turkey Point Units 6 and 7 COLA, which provides the milestones for implementing applicable portions of the Security Program.

- Part 10, License Condition 5

The applicant proposed a license condition in Part 10 of the Turkey Point Units 6 and 7 COLA, which proposed the maintenance of the PSP, T&QP, and the SCP when nuclear fuel is onsite (protected area), and continuing until all nuclear fuel is permanently removed from the site.

- Part 10, License Condition 6

The applicant proposed a license condition to provide a schedule to support the NRC's inspection of operational programs including the PSP, T&QP, and the SCP.

13.6.3 Regulatory Basis

The regulatory basis of the information incorporated by reference is addressed in NUREG-1793, 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.

The applicable regulatory requirements for physical protection are as follows:

- The provisions of 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. The provisions of 10 CFR 52.79(a)(36)(i) through (v), require that the application include an SCP in accordance with the criteria set forth in Appendix C, "Nuclear Power Plant Safeguards Contingency Plans" to 10 CFR Part 73, and 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 that the applicant protect the PSP, T&QP and SCP, and other related safeguards information in accordance with the requirements of 10 CFR 73.21, "Protection of Safeguards Information: Performance Requirements" and 10 CFR 73.22, "Protection of Safeguards Information: Specific requirements."

- The provisions of 10 CFR Part 73 include performance-based and prescriptive regulatory requirements that, when adequately met and implemented, 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. A COL applicant must describe how it will meet the regulatory requirements of 10 CFR Part 73 that are applicable to nuclear power plants.

- The provisions of 10 CFR 52.79(a)(41) require an evaluation of the facility against the SRP in effect 6 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 NUREG-0800 Section 13.6.1, Revision 1, dated October 2010, to complete the physical security COL review.

Regulatory guidance documents, technical reports (TRs), 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," May 1980

- RG 5.12, "General Use of Locks in the Protection and Control of Facilities and Special Nuclear Materials," November 1973.

- RG 5.44, Revision 3 "Perimeter Intrusion Alarm Systems," October 1997.

- RG 5.62, Revision 1 "Reporting of Safeguards Events," November 1987.

- RG 5.65, "Vital Area Access Controls, Protection of Physical Protection Security Equipment and Key and Lock Controls," September 1986.

- RG 5.66, Revision 1, "Access Authorization Program for Nuclear Power Plants," July 2009.

- RG 5.68, "Protection Against Malevolent Use of Vehicles at Nuclear Power Plants," August 1994.

- RG 5.74, "Managing the Safety/Security Interface," March 2009.

- RG 5.75, "Training and Qualification of Security Personnel at Nuclear Power Reactor Facilities," June 2009.

- NRC letter dated April 9, 2009, NRC Staff Review of NEI 03-12, "Template for Security Plan, Training and Qualification, Safeguards Contingency Plan, [and Independent Spent Fuel Storage Installation Security Program]" (Revision 6) (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 include security-related or safeguards information 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," June 2006.

- RG 5.76, "Physical Protection Programs at Nuclear Power Reactors," July 2009.

- RG 5.77, "Insider Mitigation Program" March 2009

- 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," March 27, 2003.

13.6.4 Technical Evaluation

The staff reviewed Section 13.6 of the Turkey Point Units 6 and 7 COL FSAR and checked the referenced DCD to ensure that the combination of the DCD and the COLA represents the complete scope of information relating to this review topic.[1] The staff's review confirmed that the information in the application and incorporated by reference addresses the required information relating to physical security. The results of the staff's evaluation of the information incorporated by reference in the Turkey Point Units 6 and 7 COLA are documented in NUREG-1793 and its supplements.

Section 1.2.3 of this SER provides a discussion of the strategy used by the NRC to perform one technical review for each standard issue outside the scope of the DC and use this review in evaluating subsequent COLAs. To ensure that the staff's findings on standard content that were documented in the SER for the reference COLA (VEGP Units 3 and 4) were equally applicable to the Turkey Point Units 6 and 7 COLA, the staff undertook the following reviews:

- The staff compared the VEGP COL FSAR, Revision 5 to the Turkey Point Units 6 and 7 COL FSAR. In performing this comparison, the staff considered changes made to the Turkey Point Units 6 and 7 COL FSAR (and other parts of the COLA, as applicable) resulting from RAIs.

- The staff compared the VEGP PSP, T&QP, and SCP to the corresponding Turkey Point Units 6 and 7 programs. The staff has determined that these plans are sufficiently similar to warrant standard content treatment.

- The staff confirmed that all responses to RAIs identified in the corresponding standard content evaluation were endorsed.

- The staff verified that the site-specific differences were not relevant.

The staff has completed its review and found the evaluation performed for the standard content to be directly applicable to the Turkey Point Units 6 and 7 COLA, with the exception discussed in the following paragraph. This standard content material is identified in this SER by use of italicized, double-indented formatting. One clarification to the standard content material presented below is that the staff's detailed evaluation of the physical protection program, which is site-specific, is provided in the safeguards information version of the Turkey Point Units 6 and 7 COL application Section 13.6 SER.

There were site-specific RAIs issued to the Turkey Point Units 6 and 7 applicant that resulted in site-specific evaluations for several of the Security Plan review areas. There were also site-specific RAIs issued to the VEGP applicant that were not applicable to the Turkey Point Units 6 and 7 application. In addition, there are several Security Plan review areas with site-specific characteristics requiring a specific review by the staff. For these cases, the staff provides the Turkey Point Units 6 and 7 evaluation in the same location as provided in the VEGP SER, but without the use of italicized, double-indented formatting.

The following portion of this technical evaluation section is reproduced from Section 13.6.4 of the VEGP SER:

AP1000 COL Information Item

- *STD COL 13.6-1*

The NRC staff reviewed STD COL 13.6-1 related to COL Information Item 13.6-1, which identified the need for a COL applicant to address the security plan. STD COL 13.6-1 supplemented Section 13.6 of the VEGP COL FSAR by stating the following text is to be added after Section 13.6 of the VEGP ESP SSAR:

> *The Security Plan consists of the Physical Security Plan, the Training and Qualification Plan, and the Safeguards Contingency Plan. The Security Plan is submitted to the Nuclear Regulatory Commission as a separate licensing document in order to fulfill the requirements of 10 CFR 52.79(a)(35) and 52.79(a)(36). The Security Plan meets the requirements contained in 10 CFR Part 73 and will be maintained in accordance with the requirements of 10 CFR 52.98. The Plan is categorized as Security Safeguards Information and is withheld from public disclosure pursuant to 10 CFR 73.21.*

Section 13.6 of the VEGP COL FSAR also refers to FSAR Table 13.4-201, "Operational Programs Required by NRC Regulations," as providing the milestones for implementing the security program and cyber security program.

The NRC staff's evaluation of the PSP is documented in Section 13.6.4.1 of this SER. The NRC staff's evaluation of the T&QP is documented in Section 13.6.4.2 of this SER. The NRC staff's evaluation of the SCP is documented in Section 13.6.4.3 of this SER. The NRC staff's evaluation of the safety/security interface is documented in Section 13.6.4.1.17 of this SER. Section 13.6.5 of this SER includes the post-combined license activities. Section 13.6.6 of this SER includes the NRC staff's overall conclusions regarding each of the plan submissions.

The NRC staff's evaluation of the physical protection program is provided in detail in the safeguards information version of the VEGP COL application Section 13.6 SER, which is located in the NRC's Secure Local Area Network, document number ES1000015157. Due to security restraints, the NRC staff's evaluation of the physical 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 need-to-know may view the safeguards information version of the VEGP COL application Section 13.6 SER.

License Conditions

- *Part 10, License Condition 3, Items C.5, D.3, and G.9*

The applicant provided a license condition in Part 10 of the VEGP COL application, which provides the milestones for implementing applicable portions of the Security Program. Specifically, the applicant proposed the following:

> *C. Receipt of Materials – The licensee shall implement each operational program identified below prior to initial receipt of byproduct, source, or special nuclear materials onsite (excluding Exempt Quantities as described in 10 CFR 30.18).*
>
> *C.5 – Security Program (applicable portions)*
>
> *D. Fuel Receipt – The licensee shall implement each operational program identified below prior to initial receipt of fuel onsite.*
>
> *D.3 – Security Program (applicable portions)*

G. Fuel Loading – The licensee shall implement each operational program identified below prior to initial fuel load.

G.9 – Physical Security

- *Part 10, License Condition 5*

The applicant provided a license condition in Part 10 of the VEGP COL application, which proposed the maintenance of the PSP, T&QP, and the SCP when nuclear fuel is onsite, and continuing until all nuclear fuel is permanently removed from the site. Specifically, the applicant proposed the following:

> *The licensee shall maintain in effect the provisions of the physical security plan, security personnel training and qualification plan, and safeguards contingency plan, and all amendments made pursuant to the authority of 10 CFR 50.90, 50.54(p), 52.97, and Section VIII of Appendix D to Part 52 when nuclear fuel is onsite, and continuing until all nuclear fuel is permanently removed from the site.*

In a letter dated October 22, 2010, the applicant proposed to revise the [security plan] *milestone included in VEGP COL FSAR Table 13.4-201 to implement the* [security plan] *prior to receipt of fuel onsite (protected area.) The NRC staff finds the implementation milestone for the security ~~program~~*[security plan] *(~~security~~ prior to receipt of fuel onsite (protected area)) appropriate and in accordance with the requirement in 10 CFR 73.55. Therefore the staff finds that the proposed License Condition 3, Items C.5, D.3, and G.9 and License Condition 5 are not necessary. The incorporation of proposed changes to the VEGP COL FSAR are tracked as* ***Confirmatory Item 13.6-1.***

Resolution of Standard Content Confirmatory Item 13.6-1

Confirmatory Item 13.6-1 is an applicant commitment to revise its FSAR Table 13.4-201 regarding the implementation milestones for the security program. The staff verified that the VEGP COL FSAR was appropriately revised. As a result, Confirmatory Item 13.6-1 is now closed.

In a letter dated April 20, 2011, the applicant proposed to revise the security plan milestone included in Turkey Point Units 6 and 7 COL FSAR Table 13.4-201 to implement the security plan before receipt of fuel onsite (protected area.) The staff verified that the Turkey Point Units 6 and 7 COL FSAR Table 13.4-201 was appropriately revised in Revision 3. As a result Confirmatory Item 13.6-1 is now closed.

- *Part 10, License Condition 6*

The applicant proposed a license condition to provide a schedule to support the NRC's inspection of operational programs including the PSP, T&QP, and the SCP. Specifically, the applicant proposed the following:

> *The licensee shall submit to the appropriate Director of the NRC, a schedule, no later than 12 months after issuance of the COL,*

that supports planning for and conduct of NRC inspections of operational programs listed in the operational program FSAR Table 13.4-201. The schedule shall be updated every 6 months until 12 months before scheduled fuel loading, and every month thereafter until either the operational programs in the FSAR table have been fully implemented or the plant has been placed in commercial service, whichever comes first.

The staff reviewed the above proposed license condition against the recommendations in SECY-05-0197 as endorsed by the related SRM dated February 22, 2006. The staff concludes these proposed license conditions conform to the guidance in SECY-05-0197 and is [sic], therefore, acceptable.

***13.6.4.1** Physical Security Plan*

The applicant submitted Part 8 of the COL application for the VEGP PSP, T&QP and SCP, to meet the requirements of 10 CFR 52.79(a)(35) and (36). Part 2, FSAR, Chapter 13, Section 13.6 references the VEGP PSP, T&QP, and SCP in describing the licensing basis for establishing a physical protection program, design of a physical protection system, and security organization, which will have, as its 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. The VEGP submitted PSP makes references to 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).

The requirements are provided in 10 CFR 73.55(c), and (d) to 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 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 development, implementation, revision, and oversight of security implementing procedures. The approval process for implementing security procedures will be documented.

The NRC staff has reviewed the applicant's description in PSP Section 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 description in the PSP is consistent with the acceptance criteria in NUREG-0800, Section 13.6.1, the staff finds that the description provided 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 52.79(a)(35):

(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;

(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 FFD program required by 10 CFR Part 26 and its implementation.

Requirements are established in 10 CFR 73.55(c)(2) to ensure protection of safeguards information (SGI) against unauthorized disclosure in accordance with 10 CFR 73.21. The applicant's submittal acknowledges that the PSP, the TQ&P and the SCP discuss specific features of the physical security system or response procedures and are SGI.

Section 1 of the PSP describes the applicant's commitment to satisfying 10 CFR 50.34(c), 10 CFR 50.34(d) and 10 CFR Part 73 by submitting a PSP, and to controlling the PSP and appendices as Safeguards Information according to 10 CFR 73.21.

The provisions of 10 CFR Part 73, Appendix C, Section II.B.3.b, requires a description of the physical layout of the site.

Section 1.1 of the PSP provides descriptions of location, site layout, and facility configuration. The PSP describes the physical structures and their locations on the site, description of the protected area, and a description of the site in relation to nearby town, roads, and other environmental features important to the coordination of response operations. The plant layout

includes identification of main and alternate entry routes for law enforcement assistance forces and the location of control points for marshalling and coordinating response activities.

In addition, FSAR, Chapter 2, "Site Characteristics" of the Turkey Point Units 6 and 7 COLA, provides general plant descriptions that include details of the 10- to 50-mile radius of the geographical area of the Turkey Point Units 6 and 7 site, a site area map, and general plant and site descriptions. Turkey Point Units 6 and 7 COL FSAR, Chapter 1, references the AP1000 DCD for the principal design and operating characteristics for the design and construction of the Turkey Point Units 6 and 7. Part 1, "General Information," of the Turkey Point Units 6 and 7 COLA describes the name of the applicant and principal business locations.

The staff has reviewed the facility physical layout provided in Section 1.1 of the PSP and as supplemented by Turkey Point Units 6 and 7 COL FSAR. The staff determined that the applicant included site-specific conditions that affect the applicant's capability to satisfy the requirements of a comprehensive PSP. The applicant has adequately described the physical structures and their locations onsite and the site in relation 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 forces and the location of control points for marshaling and coordinating response activities in the site-specific law enforcement response plan. The staff concludes that the applicant's security plans have met the requirements for content of a PSP as stated above. Therefore, the staff finds the "Facility Layout" described in the PSP and the Turkey Point Units 6 and 7 COL FSAR is adequate.

The following portion of this technical evaluation section is reproduced from Section 13.6.4.1 of the VEGP SER:

> ***13.6.4.1.2 Performance Objectives***
>
> *The provisions of 10 CFR 73.55(b)(1) requires, in part, that the applicant 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. The provisions of 10 CFR 73.55(b)(2) establish, in part, the requirement to protect a nuclear power reactor against the DBT 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 designed to ensure the capabilities to detect, assess, interdict, and neutralize threats up to and including the DBT of radiological sabotage as stated in 10 CFR 73.1, are maintained at all times, provide defense-in-depth, supporting processes, and implementing procedures, which ensure the effectiveness of the physical protection program.*
>
> *Section 2 of the PSP outlines the requirements 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 shall incorporate 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 DBT 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 paragraph (a) through (r). VEGP Units 3 and 4 uses the corrective action program to track, trend, correct and prevent recurrence of failures and deficiencies in the physical protection program.

The NRC staff has reviewed the applicant's description in PSP Section 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 description in the PSP is consistent with the acceptance criteria in NUREG-0800, Section 13.6.1, the staff finds that the description provided 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 are established in 10 CFR 73.55(b)(4) through (b)(11) for the applicant to analyze and identify site-specific conditions, establish programs, plans, and procedures that address performance evaluations, access authorization, cyber security, insider mitigation, fitness for duty (FFD), corrective actions, and operating procedures. 10 CFR 73.55(b)(6) prescribes specific requirements to establish, maintain, and implement a performance evaluation program in accordance with 10 CFR Part 73, Appendix B, Section VI for implementation of the plant protective strategy.

Section 3.0 of the PSP describes that drills and exercises, as discussed in the T&QP, 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, 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 facility procedures and the deficiencies identified are managed through the corrective action program.

Section 3.0 of the PSP references Section 4.0 of the T&QP, which provides additional details related to the performance evaluation of security personnel in accordance with 10 CFR Part 73, Appendix B, Section VI. Section 4.0 of the T&QP includes the requirements to conduct security force tactical ~~dills~~ [drills] *and force-on-force exercises to evaluate security systems effectiveness and response performances of security personnel. In addition, Section 17 of the PSP describes additional detail regarding the applicant's processes for reviews, evaluations and audits that will complement the performance evaluation program.*

The NRC staff has reviewed the applicant's description in PSP Section 3, and the T&QP Section 4 (evaluated separately) 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, Section 13.6.1, the staff finds that the description provided in the PSP meets the requirements of 10 CFR 73.55(b)(6), and is, therefore, acceptable.

13.6.4.1.4 Establishment of 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, 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.

Section 4.0 of the PSP describes how the applicant meets the requirements of 10 CFR 73.55(d)(1).

Security Organization Management

Section 4.1 of the PSP describes 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 DBT of radiological sabotage. The security organization may be proprietary, contractor, or other qualified personnel.

The PSP describes that the 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 describes the roles and responsibilities of the Security Organization. The PSP provides that at least one full-time, Security Shift Supervisor that has the authority for command and control of all security operations is onsite at all times.

The security force implementing the security functions as described in this section of the plan will be either a proprietary force, contractor, or other qualified personnel. The training qualification requirements are described in the T&QP.

The staff has reviewed the applicant's description in PSP Sections 4 and 4.1 for the implementation of the site-specific physical protection program in accordance with Commission regulations and NUREG-0800 acceptance criteria. Because the applicant's description in the PSP is consistent with the acceptance criteria in NUREG-0800, Section 13.6.1, the staff finds that the description provided in the PSP provides reasonable assurance that the licensee will meet the requirements of 10 CFR 73.55(d) and is, therefore, acceptable.

The following portion of this technical evaluation section is reproduced from Section 13.6.4.1 of the VEGP SER:

> ***13.6.4.1.5 Qualification for Employment in Security***
>
> *The requirements of 10 CFR 73.55(d)(3) state, in part, that the applicant 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 applicant's T&QP.*
>
> *Section 5 of the PSP describes that employment qualifications for members of the security force are delineated in the T&QP.*

The NRC staff has reviewed the applicant's description in PSP Section 5 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, Section 13.6.1, the staff finds that the description provided 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 requirements in 10 CFR 73.55(d)(3),10 CFR 73.56 and 10 CFR Part 73, Appendix B, Section VI.C.1, all personnel who are authorized unescorted access to the applicant'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 escort are trained and qualified in accordance with the T&QP to perform these duties and responsibilities and to ensure that each individual has the minimum knowledge, skills, and abilities required for effective performance of assigned duties and responsibilities.

Section 6 of the PSP describes the training provided for all personnel who have been granted unescorted access to the applicant's PA.

The NRC staff has reviewed the applicant's description in PSP Section 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 NUREG-0800, Section 13.6.1, the staff finds that the description provided 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 that all security personnel are trained and qualified in accordance with 10 CFR Part 73, Appendix B, Section VI prior to performing their duties.

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

The NRC staff has reviewed the applicant's description in PSP Section 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 PSP is consistent with the acceptance criteria in NUREG-0800, Section 13.6.1, the staff finds that the description provided in the PSP meets the requirements of 10 CFR 73.55(d), and is, therefore, acceptable. The NRC staff's review of the licensee T&QP is located in Section 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 provides a detailed discussion of its ongoing relationship with local law enforcement agencies (LLEAs). The plans addressing response, communication methodologies and protocols, command and control structures and marshaling locations are located in the operations procedures, 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 NRC staff has reviewed the applicant's description in PSP Section 8 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, Section 13.6.1, the staff finds that the description provided 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, the applicant 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 of 10 CFR Part 73, Appendix B, Section VI.G.2(a), state, in part, that the applicant must ensure that each individual is equipped 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. The provisions of 10 CFR Part 73, Appendix B, Sections VI.G.2(b) and (c), delineate the minimum equipment requirements for security personnel and armed response personnel.

Section 9 of the PSP describes the equipment, including armament, ammunition, and communications equipment that is provided to security personnel in order to ensure that security personnel are capable of performing the function stated in the Commission-approved security plans, applicant's protective strategy, and 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, Section 13.6.1, the staff finds that the description provided in the PSP provides reasonable assurance that the licensee will meet the requirements of 10 CFR 73.55(d)(3) and Appendix B, Section VI.G.2, and is, therefore, acceptable.

The following portion of this technical evaluation section is reproduced from Section 13.6.4.1 of the VEGP SER:

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. 10 CFR 26.205 establishes requirements for work hours. 10 CFR 26.205(a) requires that any individual who performs duties identified in 10 CFR 26.4(a)(1) through (a)(5) shall be subject to the requirements of this section.

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

The NRC staff's review of the fitness-for-duty program is found 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 applicant 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 applicant 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." The regulation 10 CFR 73.55(b)(3)(ii) states, "Provide defense-in-depth through the integration 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 provides a general description of how the applicant has implemented its program for physical barriers, and that this implementation is in accordance with the performance objectives and requirements of 10 CFR 73.55(b).

<u>OCA Barriers</u>

Section 11.1 of the PSP describes Turkey Point Units 6 and 7 use of OCA barriers at the site.

<u>Vehicle Barriers</u>

PSP Subsections 11.2.1 and 11.2.2 provides for vehicle control measures to protect against the DBT of radiological sabotage. The staff has verified that such measures are in accordance with site-specific analysis. Furthermore, the staff has determined that these measures integrate systems, technologies, programs, supporting processes, and implementing procedures to provide defense-in-depth against the DBT land vehicle bomb assault. The staff has also determined that such measures provide for a vehicle barrier system at a stand-off distance adequate to protect personnel, equipment, and systems necessary to prevent significant core damage and spent fuel sabotage against the effects of such an assault. Furthermore, the staff confirmed that the applicant's PSP provides that the inspection, monitoring, and maintenance of the vehicle barrier system are included in facility procedures. In view of the above, the staff

concludes that the PSP identifies measures taken to provide high assurance that a land vehicle bomb assault can be defended against.

Accordingly, the staff concludes that the proposed vehicle control 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).

Waterborne Threat Measures

The provisions of 10 CFR 73.55(e)(10)(ii) require the applicant to "[i]dentify 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."

Section 11.2.3 of the PSP describes that a site-specific analysis for a water-borne DBT has been conducted and documented. However, there is no waterborne access to Turkey Point Units 6 and 7.

Protected Area Barriers

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

Section 11.3 of the PSP describes 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 as required in 10 CFR 73.55(e)(8)(i)(c).

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

These descriptions meet the definitions of physical barrier and PA in 10 CFR 73.2 and the requirements of 10 CFR 73.55(e)(8).

Vital Area Barriers

The provisions of 10 CFR 73.55(e)(9) require that "[v]ital 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 certain vital areas shall be bullet resisting.

Section 11.4 of the PSP describes that vital areas are 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 describes that the reactor control room, 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 finds Section 11.4 describes that the reactor control room, CAS, SAS and the location within which the last access control function for access to the PA is performed must be bullet resisting. Accordingly, the staff finds all vital areas are constructed in accordance with established regulatory requirements.

Target Set Equipment

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

> 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. The licensee shall consider cyber attacks in the development and identification of target sets. 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. 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 describes 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.

The staff identified several RAIs relating to target sets for the purpose of reviewing the Westinghouse physical protection program. Westinghouse provided design details as background information to assist an applicant with the development of site-specific target set analyses. The staff evaluated the applicant's responses, and found them to be acceptable for the DC review of the AP1000 physical protection program. Westinghouse stated, in Technical Report TR-94, APP-GW-GLR-066, "AP1000 Safeguards Assessment Report," that target sets were created to aid in the development of the AP1000 physical security system, and that final target sets will be developed by the COL applicant prior to fuel onsite (inside PA).

The staff has reviewed the applicant's description in Sections 11.5 and 14.5 of the PSP, Section 7 of the SCP and information in Westinghouse TR-94 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 Sections 11.5 and 14.5 of the PSP, Section 7 of the SCP, and the information in Westinghouse TR-94 are consistent with the acceptance criteria in NUREG-0800, Section 13.6.1, the staff finds that the description provided in Sections 11.5 and 14.5 of the PSP and Section 7 of the SCP meets the requirements of 10 CFR 73.55(f)(1), (3), and (4), and is, therefore, acceptable. The target sets, target set analysis, and site protective strategy are in the facility implementing procedures, which were not subject to an NRC staff review as part of this COLA, 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).

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 applicant physical protection program. The PSP describes the use of delay barriers at Turkey Point Units 6 and 7.

Section 11.6 of the PSP includes a description of the use of Delay Barriers to meet requirement of 10 CFR 73.55(e).

The staff has reviewed the applicant's description in PSP Sections 11, 11.1, 11.2, 11.2.1, 11.2.2, 11.2.3, and Sections 11.3 through 11.6 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 NUREG-0800, Section 13.6.1, the staff finds that the description provided in the PSP provides reasonable assurance that the licensee will meet the requirements of 10 CFR 73.55(e), and are, therefore, acceptable.

The following portion of this technical evaluation section is reproduced from Section 13.6.4.1 of the VEGP SER:

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 PA is performed, must be bullet-resisting.

Section 12 of the PSP describes that security posts and structures are qualified to a level commensurate with their application within the site protective strategy, and that these positions are constructed of bullet resisting materials.

The NRC staff has 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 NUREG-0800, Section 13.6.1, the staff finds that the description provided 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

It is stated in 10 CFR 73.55(g)(1) that, consistent with the function of each barrier or barrier system, the applicant 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 as stated: "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 describes that the applicant uses 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 describes the control of security related locks. Section 13.2.2 of the PSP describes the controls associated with the changes to and replacements of access control devices and the accountability and inventory control process, and the circumstances that require changes in security-related locks. The applicant uses facility procedures to produce, control, and recover keys, locks, and combinations for all areas and equipment, which serve to reduce the probability of compromise. The issue of access control devices is limited to individuals who have unescorted access authorization and require access to perform official duties and responsibilities. Keys and locks are accounted for through a key inventory control process as described in facility procedures.

The NRC staff has reviewed the applicant's description in PSP Sections 13, 13.1, 13.2, 13.2.1, and 13.2.2 for the implementation of the site-specific physical protection program in accordance with Commission regulations and NUREG-0800 acceptance criteria. Because the applicant's description in the PSP is consistent with the acceptance criteria in NUREG-0800, Section 13.6.1, the staff finds that the description provided 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 the applicant to establish, maintain, and implement an access authorization program in accordance with 10 CFR 73.56 and to describe the program in the PSP. The provisions of 10 CFR Part 26 require the applicant to establish and maintain a FFD program.

Section 14.1 of the PSP describes that the access authorization program implements regulatory requirements utilizing the provisions in RG 5.66. The staff finds that RG 5.66, is an acceptable method for meeting the requirements of 10 CFR 73.55(b)(7).

The staff has reviewed the applicant's description in PSP Section 14.1 for the implementation of the site-specific physical protection program in accordance with Commission regulations and NUREG-0800 acceptance criteria. Because the applicant's description in the PSP is consistent with the acceptance criteria in NUREG-0800, Section 13.6.1, the staff finds that the description provided in the PSP provides reasonable assurance that the licensee will meet 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 applicant 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, and implement defense-in-depth methods to minimize the potential for an insider to impede, either directly or indirectly, the applicant'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 describes how the applicant will establish, maintain, and implement an insider mitigation program using the guidance in RG 5.77. The insider mitigation program requires elements from the access authorization program described in 10 CFR 73.56; 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 describes the integration of the programs mentioned above to form a cohesive and effective insider mitigation program. The applicant addresses the observations for the detection of tampering. The staff finds that this approach is an acceptable method for meeting the requirements 10 CFR 73.55(b)(9).

The staff has reviewed the applicant's description in PSP Section 14.2 for the implementation of the site-specific physical protection program in accordance with Commission regulations and NUREG-0800 acceptance criteria. Because the applicant's description in the PSP is consistent with the acceptance criteria in NUREG-0800, Section 13.6.1, the staff finds that the description provided in the PSP provides reasonable assurance that the licensee will meet the requirements of 10 CFR 73.55(b)(9) and is, therefore, acceptable.

Picture Badge Systems

Requirements for badges are stated in 10 CFR 73.55(g)(6)(ii). "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 that individuals not employed by the applicant but who require frequent or extended unescorted access to the protected area and/or vital areas to perform duties and responsibilities required by the applicant at irregular or intermittent intervals, shall satisfy the access authorization requirements of 10 CFR 73.56 and 10 CFR Part 26 of this chapter, and shall be issued a nonemployee 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 that no escort is required.

Section 14.3 of the PSP describes the site picture badge system, as follows: Identification badges will be displayed while individuals are inside the protected area 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 exit and positively confirm the individual's true

identity and authorization for unescorted access prior to entry into the protected area. Records are maintained to include the name and areas to which unescorted access is granted of all individuals to whom photo identification badges have been issued.

The staff has reviewed the applicant's description in PSP Section 14.3 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 PSP is consistent with the acceptance criteria in NUREG-0800, Section 13.6.1, the staff finds that the description provided in the PSP provides reasonable assurance that the licensee will meet the requirements of 10 CFR 73.55(g)(6)(ii) and (7)(ii) and is, therefore, acceptable.

Searches

The provisions of 10 CFR 73.55(h) require, in part, that applicants meet the objective 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, applicant's shall search individuals, vehicles, and materials consistent with the physical protection program design requirements in paragraph (b) of this section, and the function to be performed at each access control point or portal before granting access.

Section 14.4 of the PSP provides an overview description of the search process for vehicle, 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 unauthorized materials are discovered are found in implementing procedures.

Vehicle Barrier Access Control Point

The provisions of 10 CFR 73.55(h)(2)(ii) through (v) provide the requirements for an applicant to search vehicles at the owner-controlled area and 10 CFR 73.55(h)(3) provides requirements for searches of personnel, vehicles and materials prior to entering the protected area.

Section 14.4.1 of the PSP describes the process for the search of personnel, vehicles and materials at predetermined locations prior to granting access to designated facility areas identified by the applicant as needed to satisfy the physical protection program. The applicant states that it has developed specific implementing procedures to address vehicle and materials searches at these locations. Hence the staff finds this acceptable.

PA Packages and Materials Search

Section 14.4.2 of the PSP describes the process for conducting searches of packages and materials for firearms, explosives, incendiary devices, or other items, which could be used to commit radiological sabotage using equipment capable of detecting these items or through visual and physical searches, or both, to ensure that all items are clearly identified before these items can enter the Turkey Point Units 6 and 7 protected area. Detailed requirements for conducting these searches are found in applicant implementing procedures and include the search and control of bulk materials and products. Applicant 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 describes the process for the search of vehicles for firearms, explosives, incendiary devices, or other items, which could be used to commit radiological sabotage using equipment capable of detecting these items or through visual and physical searches, or both, to ensure that all items are clearly identified at the protected area. Detailed requirements for conducting these searches are found in the applicant's implementing procedures. The applicant's implementing procedures also address the search methodologies for vehicles that must enter the protected area under emergency conditions.

PA Personnel Searches

Section 14.4.4 of the PSP describes the process for searches of all personnel requesting access into protected areas. The PSP describes the search for firearms, explosives, incendiary devices, or other items, which could be used to commit radiological sabotage using equipment capable of detecting these items or through visual and physical searches or both to ensure that all items are clearly identified prior to granting access into the protected area. All persons except official Federal, State, and LLEA personnel on official duty are subject to these searches upon entry to the protected area. Detailed discussions of observation and control measures are found in implementing procedures.

PA Access Controls

Section 14.4.5 of the PSP describes the process for controlling access at all points where personnel or vehicles could gain access into the applicant's protected area. The plan notes that principal personnel access to the protected area is through a lockable portal. Personnel are only permitted into the PA after positive ID verification, access authorization verification, and a search is performed per Section 14.4 of the PSP. Vehicles are controlled through positive control methods described in the facility procedures.

Escort and Visitor Requirements

The provisions of 10 CFR 73.55(g)(7) and (8) state in part, that the applicant 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 of this chapter. Regulations in 10 CFR 73.55(g)(8) discuss escort requirements. Applicants are required to implement procedures for processing, escorting and controlling visitors. Procedures shall address confirmation of identity of visitors, maintenance of a visitor control register, visitor badging and escort controls including, training, communications, and escort ratios.

Section 14.4.6 of the PSP describes the process for control of visitors. The PSP affirms that procedures address the identification, processing, and escorting of visitors and the maintenance of a visitor control register. Training requirements for escorting visitors includes 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 that an escort is required.

The staff has reviewed the applicant's description 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 NUREG-0800,

Section 13.6.1, the staff finds that the description provided in the PSP provides reasonable assurance that the licensee will 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 applicants control access into vital areas consistent with established access authorization lists. In response to a site-specific credible threat or other credible information, applicants 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 applicant to establish, implement, and maintain a list of individuals who are authorized to have unescorted access to specific nuclear power plant vital areas during nonemergency 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 applicant manager or supervisor who is responsible for directing the work activities of the individual who is granted unescorted access to each vital area, and updated and re-approved no less frequently than every 31 days.

Section 14.5 of the PSP describes vital areas and states that the applicant maintains vital areas 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, which is reassessed and reapproved at least once every 31 days. Additional access control measures are described in the facility procedures.

The staff has reviewed the applicant's description in PSP Section 14.5 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, Section 13.6.1, the staff finds that the description provided in the PSP provides reasonable assurance that the licensee will meet the requirements of 10 CFR 73.55(g)(4) and is, therefore, acceptable.

The following portion of this technical evaluation section is reproduced from Section 13.6.4.1 of the VEGP SER:

> ***13.6.4.1.15 Surveillance Observation and Monitoring***
>
> *The provisions of 10 CFR 73.55(i)(1) require that the applicant establish and maintain intrusion detection systems that satisfy the design requirements of 10 CFR 73.55(b) and provide, at all times, the capability to detect and assess unauthorized persons and facilitate the effective implementation of the 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, measured horizontally at ground level, in the isolation zones and appropriate exterior areas within the PA. Alternatively, the applicant 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 applicant 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 describes that all isolation zones and appropriate exterior areas within the PA 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. A discussion of the implementation of technology using fixed and non-fixed low light level cameras or alternative technological means is provided. The applicant has addressed the potential for loss of lighting and the compensatory actions that would be taken if that event were to occur.

Surveillance Systems

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

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

Intrusion Detection Equipment

Section 15.3 of the PSP describes 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; are monitored with assessment equipment designed to satisfy the requirements of 10 CFR 73.55(i) and provide real-time and play-back/recorded video images of the detected activities before and after each alarm annunciation. The PSP describes how the applicant will meet regulatory requirements for redundancy, tamper indication and uninterruptable power supply.

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

The provisions of 10 CFR 73.55(i)(4) provide requirements for alarm stations. It is required, in 10 CFR 73.55(i)(4)(i), that both alarm stations must be designed and equipped to ensure that a single act, in accordance with the DBT of radiological sabotage defined in 10 CFR 73.1, cannot disable both alarm stations. The applicant 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. 10 CFR 73.55(i)(4)(iii) requires that alarm stations must be equal and redundant.

Section 15.4 of the PSP describes 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 provides that each alarm station is properly manned and that no activities are permitted that would interfere with the operator's ability to execute assigned duties and responsibilities.

Security Patrols

Owner Controlled Area (OCA) Surveillance and Response

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

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

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 pathways, 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 describes the process employed by the applicant to meet the above requirements. The PSP describes the areas of the facility that will be patrolled and observed, as well as the frequency of these patrols and observations. The applicant has addressed the observations for the detection of tampering in Section 14.2 of the PSP and in the facility procedures.

The NRC staff has reviewed the applicant's description 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 description in the PSP is consistent with the acceptance criteria in NUREG-0800, Section 13.6.1, the staff finds that the description provided in the PSP meets 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 establishment and maintenance of continuous communication capabilities 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 escorts, and personnel escorts must maintain timely communication with security personnel. Continuous communication capabilities must terminate in both alarm stations, between LLEA and the control room. Non-portable communications must remain operable from independence power sources. The applicant must identify areas where communications could be interrupted or not maintained.

Notifications (Security Contingency Event Notifications)

Section 16.1 of the PSP describes that the applicant have 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 describes the establishment and maintenance of the communications system. Detailed descriptions of security systems are included in the facility procedures. VEGP has access to both hard wired and alternate communications systems. Site security personnel are assigned communications devices with which to maintain continuous communications with the CAS and SAS. All personnel and vehicles are assigned communications resources with which to maintain continuous communications. Continuous communication protocols are available between the CAS, SAS and the control room.

The NRC staff has reviewed the applicant's description 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 description in the PSP is consistent with the acceptance criteria in NUREG-0800, Section 13.6.1, the staff finds that the description provided in the PSP meets the requirements of 10 CFR 73.55(j)(1) through (6), and are, therefore, acceptable.

13.6.4.1.17 Review, Evaluation and Audit 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. An initial review is required within 12 months after original plan implementation, or a change in personnel, procedures, equipment or facilities, which could have a potentially adverse affect on security, or as necessary based on site-specific analysis assessments, or other performance indicators. Reviews must be conducted by individuals independent of the security program and must include the plans, implementing procedures and local law enforcement commitments. Results of reviews shall be presented to senior management above the level of the security manager and findings must be entered in the site corrective action program.

Section 17 of the PSP describes 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 upon site-specific analyses, assessments, or other performance indicators and as soon as reasonably practical, but no longer than 12 months, after changes occur in personnel, procedures, equipment, or facilities that potentially could adversely affect safety/security.

The results and recommendations of the physical security program review, management's finding on whether the physical security program is currently effective and any actions taken as a result of recommendations from prior program reviews are documented in a report to plant management and to appropriate corporate management at least one level higher than that having responsibility for the day-to-day plant operation. These reports are maintained in an auditable form and maintained for inspection.

Findings from the onsite physical security program reviews are entered into the facility corrective action program.

In RAI 13.6-36, the NRC staff requested that the applicant address the requirements of 10 CFR 73.58, "Safety/security requirements for nuclear power reactors." In its response dated May 14, 2010, the applicant stated that management controls and processes used to establish and maintain an effective interface between nuclear safety and physical security are addressed by administrative procedures. The applicant committed to revise VEGP COL FSAR Section 13.5.1 to include the safety/security interface implementation process in the list of procedural instructions provided in plant administrative procedures.

On the basis of its review, the NRC staff finds that since the applicant will revise VEGP COL FSAR Section 13.5.1 to incorporate the requirements for safety/security interfaces, the response to RAI 13.6-36 meets the requirements of 10 CFR 73.58 and is, therefore, acceptable. The incorporation of changes to the VEGP COL FSAR Section 13.5.1 is being tracked as ***Confirmatory Item 13.6-2****.*

Resolution of Standard Content Confirmatory Item 13.6-2

Confirmatory Item 13.6-2 is an applicant commitment to revise its FSAR Section 13.5 regarding the requirements of safety/security interfaces. The staff verified that the VEGP COL FSAR was appropriately revised. As a result, Confirmatory Item 13.6-2 is now closed.

In Revision 6, of Turkey Point Units 6 and 7, COL FSAR, Section 13.5.1, the applicant provided additional information for clarifications of how the applicant, once licensed, would analyze and

identify changes in the site-specific conditions related to the AP1000's structures, systems, and components (SSCs) (described in certain technical reports), resulting from changes made to the Turkey Point Units 6 and 7 COL between issuance of the COL and the security program implementation milestones provided in FSAR Table 13.4-201 to ensure that the security plan continues to meet 10 CFR 73.55(b)(4):

> A process is in effect at the time of issuance of the combined license and was developed using NRC endorsed industry guidance. 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 description in PSP Section 17 for the implementation of the site-specific physical protection program in accordance with Commission regulations and NUREG-0800 acceptance criteria. As set forth above, the applicant's description in the FSAR Section 13.5.1 in Revision 6 and the PSP provides reasonable assurance that the licensee will meet the requirements of 10 CFR 73.55(b)(4), and 10 CFR 73.55(m), and therefore is acceptable.

13.6.4.1.18 Response Requirements

The provisions of 10 CFR 73.55(k) require, in part, that the applicant establish and maintain a properly trained, qualified, and equipped security force required to interdict and neutralize threats up to and including the DBT defined in 10 CFR 73.1, to prevent significant core damage and spent fuel sabotage. To meet this objective, the applicant must ensure that necessary equipment is in sufficient supply, in working condition, and readily available. The applicant must ensure training has been 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 10 CFR Part 73, Appendix C. The applicant must have facility procedures to reconstitute armed response personnel and have established working agreement(s) with LLEA. The applicant must have implemented a threat warning system to accommodate heightened security threats and coordination with NRC representatives.

Section 18 of the PSP describes an armed response team, responsibilities, training, and equipment, and requires an adequate number of armed response force personnel immediately available at all times to implement each site's protective strategy. The applicant ensures that training is conducted in accordance with the requirements of 10 CFR Part 73, Appendix B that 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. Procedures are in place to manage the threat warning system.

In RAI 4899, Questions 13.06-23 and 13.06-24 the staff requested that the applicant clarify PSP, Section 18, which details the minimum number of armed responders continuously in the protected area. The staff requested the applicant explain how this number correlates with the expected number detailed in Westinghouse TR-94, AP1000 Safeguards Assessment Report.

In a letter dated September 6, 2011 (ADAMS Accession No. ML11251A165), the applicant provided an explanation of how they determined the minimum numbers of armed responders needed for the Turkey Point Units 6 and 7 Site. The applicant also provided a metric showing the staffing relationship between Westinghouse TR 94, AP1000 Safeguards Assessment Report, and staffing positions and responsibility for Turkey Point Site Units 6 and 7.

On the basis of its review, the staff finds the response to RAI 4899, Questions 13.06-23 and 13.06-24 to be acceptable. The applicant's metric provided the needed clarification on the minimum number of armed responders continuously in the protected area and the expected number detailed in Westinghouse TR-94.

The staff has reviewed the applicant's description in PSP Section 18 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, Section 13.6.1, the staff finds that the description provided in the PSP provides reasonable assurance that the licensee will meet the requirements of 10 CFR 73.55(k) and is, therefore, acceptable.

The following portion of this technical evaluation section is reproduced from Section 13.6.4.1 of the VEGP SER:

13.6.4.1.19 Special Situations Affecting Security

The provisions of 10 CFR 73.58 require that each operating nuclear power reactor applicant with a license issued under 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities" or 10 CFR Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants" shall comply with the following requirements: the applicant 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 applicant shall communicate them to appropriate personnel and take compensatory and/or mitigative actions to maintain safety and security under applicable Commission regulations, requirements, and license conditions.

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

<u>Refueling/Major Maintenance</u>

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

<u>Construction and Maintenance</u>

Section 19.2 of the PSP describes that during periods of construction and maintenance when temporary modifications are necessary, that 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 included in the facility procedures.

The NRC staff has reviewed the applicant's description 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 description in the PSP is consistent with the acceptance criteria in NUREG-0800, Section 13.6.1, the staff finds that the description provided 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

In accordance with 10 CFR 73.55(n), the applicant is required 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, maintained in operable condition, and have the capability of performing their intended functions. The regulation requires that the applicant describe their maintenance testing and calibrations program in the PSP, and that the implementing procedures describe the details and intervals for conducting these activities. Applicant procedures must identify criteria for documenting deficiencies in the corrective action program and ensuring data protection in accordance with 10 CFR 73.21. The applicant must conduct periodic operability testing of the intrusion alarm system and must conduct performance testing in accordance with the PSP and implementing procedures. Communication equipment must be tested not less than 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 recommended testing procedures described in RG 5.44," Perimeter Intrusion Alarm System". 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 NRC staff has reviewed the applicant's description in PSP Section 20 and 20.1 through 20.6 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 NUREG-0800, Section 13.6.1, the staff finds that the description provided in the PSP meets 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 applicant shall identify criteria and measures to compensate for degraded or inoperable equipment, systems, and components to meet the requirements of this section. Compensatory measures must provide a level of protection that is equivalent to the protection that was provided by the degraded or inoperable, equipment, system, or components. Compensatory measures must be implemented within specific time frames necessary to meet the appropriate portions of 10 CFR 73.55(b) and 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. Sections 21.1 through 21.12 of the PSP address PA and vital area barriers, intrusion detection and alarm systems, lighting, fixed and non-fixed 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 NRC staff has reviewed the applicant's description in PSP Sections 21 and 21.1 through 21.12, 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 NUREG-0800, Section 13.6.1, the staff finds that the description provided in the PSP meets 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.H., Appendix C, Section II.C and 10 CFR 73.70, require that the applicant 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, and shall maintain superseded portions of these records for at least three years after the record is superseded, unless otherwise specified by the Commission. The applicant is required to keep records of contracts with any contracted security force that implements any portion of the onsite physical protection program for the duration of the contract. The applicant must make all records, required to be kept by the Commission, available to the Commission and the Commission may inspect, copy, retain and remove all such records, reports and documents, whether kept by the applicant or a contractor. Review and audit reports must be maintained and available for inspection for a period of three years.

Section 22.0 of the PSP addresses the requirements to maintain 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 mention regulations: access authorization records; suitability, physical and psychological qualification records for security personnel; PA and vital area access control records; PA

visitor access records; PA vehicle access; vital area access transaction records; vitalization and de-vitalization records; vital area 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 engineering analysis for the vehicle barrier system.

The NRC staff has reviewed the applicant's description in PSP Sections 22 and 22.1 through 22.13 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, Section 13.6.1, the staff finds that the description provided in the PSP meets 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 its PSP that it has implemented the requirements of 10 CFR 73.54 and maintains a cyber security plan that describes how it has provided high assurance that safety, security, and emergency preparedness functions are protected against the DBT.

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

13.6.4.1.24 Temporary Suspension of Security Measures

The provisions of 10 CFR 73.55(p) allow the applicant to "suspend implementation of affected requirements of this section under the following conditions: 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. 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."

<u>Suspension of Security Measures in Accordance with 10 CFR 50.54(x) and (y)</u>

Section 24.1 of the PSP addresses suspension of security measures in accordance with 10 CFR 50.54(x) and 10 CFR 50.54(y). Specifically, the plan provides a description of the conditions under which suspension is permissible,

the authority for suspension, and the requirements for reporting such a suspension.

Suspension of Security Measures during Severe Weather or Other Hazardous Conditions

As required in 10 CFR 73.55(p), suspension of security measures are reported and documented in accordance with the provisions of 10 CFR 73.71. 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. Suspended security measures must be reinstated as soon as conditions permit.

Section 24.2 of the PSP provides 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 NRC staff has reviewed the applicant's description 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 description in the PSP is consistent with the acceptance criteria in NUREG-0800, Section 13.6.1, the staff finds that the description provided in the PSP meets the requirements of 10 CFR 73.55(p), and are, therefore, acceptable.

13.6.4.1.25 Appendix A Glossary of Terms and Acronyms

Appendix A, "Glossary of Terms and Acronyms," was reviewed and found to be consistent with the NRC endorsed NEI 03-12, Revision 6 template.

13.6.4.1.26 Conclusions on the Physical Security Plan

On the basis of the NRC staff's review described in Sections 13.6.4.1.1 through 13.6.4.1.25 of this SER, 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 staff review as part of this COL application and are, therefore, subject to future NRC inspection in accordance with 10 CFR 73.55(c)(7)(iv) and 10 CFR Part 73, Appendix C, Section II.B.5(iii). The NRC staff concludes that complete and procedurally correct implementation of the PSP will 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.

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 applicant establish, maintain, implement, and follow a T&QP that describes 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 applicant 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 their assigned duties and responsibilities in accordance with 10 CFR Part 73, Appendix B and the T&QP. Non-security personnel may be assigned duties and responsibilities required to implement the physical protection program and shall:

(i) Be trained through established applicant training programs to ensure 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.D.2(a) states armed and unarmed individuals shall be requalified at least annually in accordance with the requirements of the Commission-approved T&QP.

The T&QP describes that it is written to address the requirements found in 10 CFR Part 73, Appendix B, Section VI. 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 in implementing the security requirements and protective strategy, are properly trained, equipped and qualified. Deficiencies identified during the administration of T&QP requirements are documented in the site corrective action program.

The NRC staff has reviewed the introduction section in the T&QP and has 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 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 requirements for mental qualifications, documentation, and physical requalification for security personnel (applicant employee and contractor) are described in the following T&QP sections.

Suitability

The provisions of 10 CFR Part 73, Appendix B, Section VI.B.1(a) require, 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) attained the age of 21 for an armed capacity or the age of 18 for an unarmed capacity; (3) not have any felony convictions that reflect on the individual's reliability; and (4) individuals in an armed capacity would not be disqualified from possessing or using firearms or ammunition in accordance with applicable State or Federal law, to include 18 U.S.C. 922. Applicants shall use information that has been obtained during the completion of the individual's background investigation for unescorted access to determine suitability. Satisfactory completion of a firearms background check for the individual under 10 CFR 73.19 of this part will also fulfill this requirement. The provisions of 10 CFR Part 73, Appendix B, Section VI.B.1(b) require 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 requirements of qualifications for employment in the security organization that follows the regulation in 10 CFR Part 73, Appendix B, Section VI.B.1(a).

Physical Qualifications

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

Section 2.2 of the T&QP details those individuals that are directly associated with implementation of the security plans. Protective strategy and procedures may not have any physical conditions that would adversely affect their performance of assigned security duties and responsibilities. All individuals that are found on the critical task matrix shall demonstrate the necessary physical qualifications prior to duty.

Physical Examination

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

The provisions of 10 CFR Part 73, Appendix B, Section VI.B.2(a)(3) state, in part, that the physical examination must be administered by a licensed health professional with the final determination being 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, Section VI.B.2(b) through (e) provide the minimum requirements that individuals must meet, and include requirements for vision, hearing, review of existing medical conditions, and examination for potential addictions.

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

Section 2.3 of the T&QP describes the physical examinations for armed and unarmed individuals assigned security duties, as well as other individuals that implement parts of the physical protection program. Minimum requirements exist for physical examinations of vision, hearing, existing medical conditions, addiction or other physical requirements.

The NRC staff has reviewed the applicant's description in T&QP Sections 2.1, 2.2, and 2.3 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 NUREG-0800, Section 13.6.1, the staff finds that the description provided in the T&QP meets the requirements of 10 CFR Part 73 Appendix B, Sections VI.B.1 and VI.B.2, and are, therefore, acceptable.

Medical Examinations and Physical Fitness Qualifications

The provisions of 10 CFR Part 73, Appendix B, Section VI.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 that the applicant 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.B.4(b) require, in part, that before 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 conditions 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 NRC staff has 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 NUREG-0800, Section 13.6.1, the staff finds that the description provided in the T&QP meets the requirements of 10 CFR Part 73, Appendix B, Section VI.B.4(a) and 10 CFR Part 73, Appendix B, Section VI.B.4(b), and is, therefore, acceptable.

Psychological Qualifications

General Psychological Qualifications

The provisions of 10 CFR Part 73, Appendix B, Section VI.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 possess the acuity of senses and ability of expression sufficient to permit accurate communication by written, spoken, audible, visible, or other signals required by assigned duties and responsibilities.

Section 2.5.1 of the T&QP details that individuals whose security tasks and jobs 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.B.3(a).

Professional Psychological Examination

The provisions of 10 CFR Part 73, Appendix B, Section VI.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 requirement stated in paragraph (a) of this section, have no emotional instability that would interfere with the effective performance of assigned duties and responsibilities.

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

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

The NRC staff has reviewed the applicant's description 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 description in the T&QP is consistent with the acceptance criteria in NUREG-0800, Section 13.6.1, the staff finds that the description provided in the T&QP meets the requirements of 10 CFR Part 73, Appendix B, Sections VI.B.3(a), (b) and (c), and are, therefore, acceptable.

Documentation

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

Section 2.6 of the T&QP describes that qualified training instructors create the documentation of training activities and that security supervisors attest to these records as required. Records are retained in accordance with Section 22 of the PSP.

The NRC staff has 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 NUREG-0800, Section 13.6.1, the staff finds that the description provided in the T&QP meets the requirements of 10 CFR Part 73, Appendix B, Section VI.H.1 and is, therefore, acceptable.

Physical Requalification

The provisions of 10 CFR Part 73, Appendix B, Section VI.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 applicant'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 describes that physical requalification is conducted at least annually, and documented as described in the PSP.

The NRC staff has 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 NUREG-0800, Section 13.6.1, the staff finds that the description provided in the T&QP meets the requirements of 10 CFR Part 73, Appendix B, Section VI.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.C.1 provide 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. These areas of training include performing assigned duties and responsibilities in accordance with the requirements of the T&QP and the PSP, and 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 assigned duties must be trained in their duties, meet minimum qualifications, and be trained and qualified in all equipment or devices required to perform their duties.

The staff has reviewed the applicant's description 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 description in the T&QP is consistent with the acceptance criteria in NUREG-0800, Section 13.6.1, the staff finds that the description provided in the T&QP provides reasonable assurance that the licensee will meet the requirements of 10 CFR Part 73, Appendix B, Section VI.C.1, and is, therefore, acceptable.

On-the-job Training

The provisions of 10 CFR Part 73, Appendix B, Sections VI.C.2(a) through (c), provides requirements for on-the-job training. On-the-job training must include individual demonstration of the knowledge, skills and abilities provided during the training process. 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) re-deployment, (8) communications (primary and alternate), (9) use of assigned equipment, (10) target sets, (11) table top drills, (12) command and control duties, and (13) applicant's protective strategy.

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

The staff has 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 and NUREG-0800 acceptance criteria. Because the applicant's description in the T&QP is consistent with the acceptance criteria in NUREG-0800, Section 13.6.1, the staff finds that the description provided in the T&QP provides reasonable assurance that the licensee will meet the requirements of 10 CFR Part 73, Appendix B, Sections VI.C.2(a) through (c), and is, therefore, acceptable.

Critical Task Matrix

The provisions of 10 CFR Part 73, Appendix B, Section VI.C.1(b) require, in part, that each individual who is assigned duties and responsibilities identified in the Commission-approved security plans, licensee protective strategy, and implementing procedures shall, before assignment, demonstrate proficiencies in implementing the knowledge, skills and abilities to perform assigned duties.

The T&QP includes 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.

The staff has 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 NUREG-0800, Section 13.6.1, the staff finds that the description provided in the T&QP provides reasonable assurance that the licensee will meet the requirements of 10 CFR Part 73, Appendix B, Section VI.C.1(b), and is, therefore, acceptable.

Initial Training and Qualification Requirements

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

The provisions of 10 CFR Part 73, Appendix B, Section VI.D.1 and (2), provide the requirements for demonstration of qualification.

Section 3.4 of the T&QP details that individuals are trained and qualified prior to performing security-related duties within a 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.D.1(b)(1) provide that written exams must include those elements listed in the Commission-approved T&QP to demonstrate an acceptable understanding of assigned duties and responsibilities, to include the recognition of potential tampering involving both safety and security equipment and systems.

Subsection 3.4.1 of the T&QP describe the measures that are implemented by the applicant to meet the requirements in 10 CFR Part 73, Appendix B, Section VI.D.1(b)(1).

Hands on Performance Demonstration

The provisions of 10 CFR Part 73, Appendix B, Section VI.D.1(b)(2) require that armed and unarmed individuals shall demonstrate hands-on performance for assigned duties and responsibilities by performing a practical hands-on demonstration for required tasks. The hands-on demonstration must ensure that 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.

Section 3.4.2 of the T&QP describe the measures that are implemented by the applicant that meet the requirements in 10 CFR Part 73, Appendix B, Section VI.D.1(b)(2).

The staff has reviewed the applicant's description in T&QP Sections 3.4, 3.4.1, and 3.4.2 for the implementation of the site-specific physical protection program in accordance with Commission regulations and NUREG-0800 acceptance criteria. Because the applicant's description in the T&QP is consistent with the acceptance criteria in NUREG-0800, Section 13.6.1, the staff finds that the description provided in the T&QP provides reasonable assurance that the licensee will meet the requirements of 10 CFR Part 73, Appendix B, Sections VI.C.1(b)(1) and D.1(b)(2), and is, therefore, acceptable.

Continuing Training and Qualification

The provisions of 10 CFR Part 73, Appendix B, Section VI.D.2 state, in part, that armed and unarmed individuals shall be re-qualified 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 by a security supervisor.

Section 3.5 of the T&QP provides discussion regarding the management of the requalification program to ensure that each individual is trained and qualified. In part, the applicant's plan provides that annual requalification may be completed up to 3 months before or 3 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 has reviewed the applicant's description in T&QP Section 3.5 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 NUREG-0800, Section 13.6.1, the staff finds that the description provided in the T&QP provides reasonable assurance that the licensee will meet the requirements of 10 CFR Part 73, Appendix B, Section VI.D.2, and is, therefore, acceptable.

Annual Written Examination

The provisions of 10 CFR Part 73, Appendix B, Section VI.D.(b)(3), provide 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 provides that each individual will be tested, in part, with an annual written exam that, at a minimum, covers: the role of security personnel; use of deadly force; the requirements in 10 CFR 73.21; authority of private security personnel; power of arrest; search and seizure; offsite law enforcement response; tactics and tactical deployment and engagement.

The staff has reviewed the applicant's description in T&QP Section 3.5.1 for the implementation of the site-specific physical protection program in accordance with Commission regulations and NUREG-0800 acceptance criteria. Because the applicant's description in the T&QP is consistent with the acceptance criteria in NUREG-0800, Section 13.6.1, the staff finds that the description provided in the T&QP provides reasonable assurance that the licensee will meet the requirements of 10 CFR Part 73, Appendix B, Section VI.D.1.(b)(3), and is, therefore, acceptable.

Demonstration of Knowledge Skills and Abilities

The provisions of 10 CFR Part 73, Appendix B, Sections VI, A., B., C., and D., (A.4, C.3(d), D.1(a), and 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 provides that all knowledge, skills and abilities will be demonstrated in accordance with a systematic approach to training (SAT) program, similar to what is described in RG 5.75.

The staff has reviewed the applicant's description in T&QP Section 3.5.2 for the implementation of the site-specific physical protection program in accordance with Commission regulations and NUREG-0800 acceptance criteria. Because the applicant's description in the T&QP is consistent with the acceptance criteria in NUREG-0800, Section 13.6.1, the staff finds that the description provided in the T&QP provides reasonable assurance that the licensee will meet the requirements of 10 CFR Part 73, Appendix B, Sections VI.A., B., C., and D. and is, therefore, acceptable.

Weapons Training and Qualification

General Firearms Training

The provisions of 10 CFR Part 73, Appendix B, Section VI.E, provide 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 3 years. Applicants shall conduct annual firearms familiarization, and armed members of the security organization must participate in weapons range activities on a nominal 4-month period.

Section 3.6.1 of the T&QP addresses the requirements in 10 CFR Part 73, Appendix B, Sections VI.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 4-month period. 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 has reviewed the applicant's description in T&QP Section 3.6.1 for the implementation of the site-specific physical protection program in accordance with Commission regulations and NUREG-0800 acceptance criteria. Because the applicant's description in the T&QP is consistent with the acceptance criteria in NUREG-0800, Section 13.6.1, the staff finds that the description provided in the T&QP provides reasonable assurance that the licensee will meet the requirements of 10 CFR Part 73, Appendix B, Section VI.E.1, and is, therefore, acceptable.

General Weapons Qualification

The provisions of 10 CFR Part 73, Appendix B, Section VI.F.1, Weapons Qualification and Requalification Program 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 provides that all armed personnel are qualified and re-qualified with assigned weapons. All weapons qualification and re-qualification must be documented and retained as a record.

The staff has reviewed the applicant's description in T&QP Section 3.6.2 for the implementation of the site-specific physical protection program in accordance with Commission regulations and NUREG-0800 acceptance criteria. Because the applicant's description in the T&QP is consistent with the acceptance criteria in NUREG-0800, Section 13.6.1, the staff finds that the description provided in the T&QP provides reasonable assurance that the licensee will meet the requirements of 10 CFR Part 73, Appendix B, Section VI.F.1, and is, therefore, acceptable.

Tactical Weapons Qualification

The provisions of 10 CFR Part 73, Appendix B, Section VI.F.2, require that the applicant conduct tactical weapons qualification. The applicant T&QP must describe the firearms used, the firearms qualification program, and other tactical training required to implement the Commission-approved security plans, applicant protective strategy, and implementing procedures. Applicant-developed tactical qualification and requalification courses must describe the performance criteria needed to include the site specific conditions (such as lighting, elevation, fields-of-fire) under which assigned personnel shall be required to carry out their assigned duties.

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

The staff has reviewed the applicant's description in T&QP Section 3.6.3 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 NUREG-0800, Section 13.6.1, the staff finds that the description provided in the T&QP provides reasonable assurance that the licensee will meet the requirements of 10 CFR Part 73, Appendix B, Section VI.F.2 and is, therefore, acceptable.

Firearms Qualification Courses

The provisions of 10 CFR Part 73, Appendix B, Section VI.F.3, state, in part, that the applicant 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.F.4, describe required courses of fire.

Section 3.6.4 of the T&QP provides a description of the firearms qualification courses used to ensure armed members of the security organization are properly trained and qualified. Courses of fire are used individually for handguns, shotguns and semiautomatic rifles, and enhanced weapons.

The staff has reviewed the applicant's description in T&QP Section 3.6.4 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 NUREG-0800, Section 13.6.1, the staff finds that the description provided in the T&QP provides reasonable assurance that the licensee will meet the requirements of 10 CFR Part 73, Appendix B, Section VI.F.3, and 10 CFR Part 73, Appendix B, Section VI.F.4, and is, therefore, acceptable.

Firearms Requalification

The provisions of 10 CFR Part 73, Appendix B, Section VI.F.5, provide that armed members of the security organization shall be re-qualified 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 in 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 describes that armed members of the security organization re-qualify at least annually with each weapon assigned, using the courses of fire provided in the T&QP.

The staff has reviewed the applicant's description in T&QP Section 3.6.5 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 NUREG-0800, Section 13.6.1, the staff finds that the description provided in the T&QP provides reasonable assurance that the licensee will meet the requirements of 10 CFR Part 73, Appendix B, Section VI.F.5, and is, therefore, acceptable.

Weapons, Personal Equipment and Maintenance

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

Section 3.7 of the T&QP describes that personnel are provided with weapons and personal equipment necessary to meet the plans and the protective strategy. The equipment provided 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 has reviewed the applicant's description in T&QP Section 3.7 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 NUREG-0800, Section 13.6.1, the staff finds that the description provided in the T&QP provides reasonable assurance that the licensee will meet 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 applicant shall retain all reports, records, or other documentation required by this appendix in accordance with the requirements of 10 CFR 73.55(q). The applicant shall retain each individual's initial qualification record for three (3) years after termination of the individual's employment and shall retain each re-qualification record for three (3) years after it is superseded. The applicant 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 (3) years from the date of obtaining and recording these results.

Section 3.8 of the T&QP provides that records are retained in accordance with Section 22 "Records" of the PSP. PSP, Section 22.11 describes how the applicant will retain each individual's initial qualification record for three (3) years after termination of the individual's employment and shall retain each re-qualification record for three (3) years after it is superseded.

The staff has reviewed the applicant's description in T&QP Section 3.8 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 NUREG-0800, Section 13.6.1, the staff finds that the description provided in the T&QP provides reasonable assurance that the licensee will meet the requirements of 10 CFR Part 73, Appendix B, Section VI.H and is, therefore, acceptable.

The following portion of this technical evaluation section is reproduced from Section 13.6.4.2 of the VEGP SER:

13.6.4.2.4 Performance Evaluation Program

10 CFR Part 73, Appendix B, Section VI.C.3, Performance Evaluation Program

(a) Applicants shall develop, implement and maintain a performance evaluation program that is documented in procedures, which describes how the applicant 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 applicant's T&QP.

(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 applicant's physical protection program, protective strategy and contingency event response by all individuals with responsibilities for implementing the SCP. 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 applicant 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 details the performance evaluation program consistent with the requirements of 10 CFR Part 73, Appendix B, Sections VI.C.3(a) through (m). Additional details of the performance evaluation program are described in the facility procedures.

The NRC staff has reviewed the applicant's description in T&QP Section 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 NUREG-0800, Section 13.6.1, the staff finds that the description provided in

the T&QP meets the requirements of 10 CFR Part 73, Appendix B, Section VI.C.3 and is, therefore, acceptable.

13.6.4.2.5 Definitions

The provisions of 10 CFR Part 73, Appendix B, Section VI.J state, in part, that terms defined in 10 CFR Part 50, 10 CFR Part 70, "Domestic Licensing of Special Nuclear Material," and 10 CFR Part 73 have the same meaning when used in this appendix. Definitions are found in the PSP, Appendix A, "Glossary of Terms and Acronyms." [On the basis of its review, the NRC staff finds that the definitions sections of the PSP 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 has not been included in this SER.

The NRC staff has reviewed the applicant's description in 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 NUREG-0800, Section 13.6.1, the staff finds that the description provided in the T&QP meets the requirements of 10 CFR Part 73, Appendix B, and are, therefore, acceptable.

13.6.4.2.6 Conclusion on the Training and Qualification Plan

On the basis of the NRC 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 target sets, Target Set Analysis and Site Protective Strategy are in the facility implementing procedures, which were not subject to NRC staff review as part of this COL application and are, therefore, subject to future NRC inspection in accordance with 10 CFR 73.55(c)(7)(iv) and 10 CFR Part 73, Appendix C, Section II.B.5(iii). The NRC staff concludes that complete and procedurally correct implementation will 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.

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.B.1.b state that the applicant should discuss general goals, objectives and operational concepts underlying the implementation of the SCP.

Section 1.1 of the SCP describes the purpose and goals of the SCP, including 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.B.1.c delineate the types of incidents that should be 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, for achieving and maintaining safe shutdown.

Perceived Danger

The provisions of 10 CFR Part 73, Appendix C, Section II.B.1 require that, consistent with the DBT specified in 10 CFR 73.1(a)(1), the applicant 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, provides a purpose of the plan, and describes the scope of the plan.

Definitions

Section 1.4 of the SCP describes 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.B.1.d is found in Appendix A of the PSP.

The NRC staff has 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 NUREG-0800, Section 13.6.1, the staff finds that the description provided in the SCP meets the requirements of 10 CFR Part 73, Appendix C, Section II.B and are, 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 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 details 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 the applicant's personnel. Applicants shall ensure detection of unauthorized activities and shall respond to all alarms or other indications signaling a security event, such as penetration of a PA, vital area, or unauthorized barrier penetration (vehicle or personnel); tampering, bomb threats, or other threat warnings—either verbal, such as telephoned threats, or implied, such as escalating civil disturbances.

The provisions of 10 CFR Part 73, Appendix C, Section II.B.2.b require, in part, that the plan define 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 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.B.2.c require, in part, that the applicant identify the data, criteria, procedures, mechanisms and logistical support necessary to achieve the objectives identified.

Section 2.2 of the SCP describes in detail the specific situations covered by the SCP, including objectives and information required for each.

The NRC staff has reviewed the applicant's description in SCP Sections 2, 2.1 and 2.2 for the implementation of the site-specific physical protection program in accordance with Commission regulations and NUREG-0800 acceptance criteria. Because the applicant's description in the SCP is consistent with the acceptance criteria in NUREG-0800, Section 13.6.1, the staff finds that the description provided in the SCP meets 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 the applicant's organizations and/or personnel in response to safeguards contingency events. To achieve this result the applicant must address the following.

- The provisions of 10 CFR Part 73, Appendix C, Section II.B.4.a, require, in part, that the applicant 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 applicant's SCP.

- The provisions of 10 CFR Part 73, Appendix C, Section II.B.4.b, require, in part, that the responsibility matrix procedures shall be based on the events outlined in the applicant's generic planning base and include specific objectives to be accomplished, description of responsibilities for decisions and actions for each event, and overall description of response actions each responding entity.

- The provisions of 10 CFR Part 73, Appendix C, Section II.B.4.c, require, in part, that responsibilities are to be assigned in a manner that precludes 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.B.4.d, require, in part, that the applicant ensure that predetermined actions can be completed under the postulated conditions.

Section 3 of the SCP includes the responsibility matrix, as required by Appendix C, Section II.B.4a. The responsibility matrix integrates the response capabilities of the security organization (described in Section 4 of the SCP) with the background information relating to decision/actions and organizational structure (described in Section 1 of the SCP), as required by Appendix C, Section II.B.4a. The responsibility matrix provides an overall description of the response actions and their interrelationships, as required by Appendix C, Section II.B.4b. 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 DBT of radiological sabotage as required by Appendix C, Section II.B.4c. The applicant has described how it will ensure that predetermined actions can be completed under the postulated conditions as required by Appendix C, Section II.B.4.d.

The staff has reviewed the applicant's description in SCP Section 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 SCP is consistent with the acceptance criteria in NUREG-0800, Section 13.6.1, the staff finds that the description provided 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, require, in part, that the applicant planning base include factors affecting the SCP 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 communications 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.B.3.a.

Security Chain of Command/Delegation of Authority

Section 4.1.2 of the SCP details the chain of command and delegation of authority during normal operations is discussed in the PSP. The chain of command and delegation of authority during contingency events is also described in the responsibility matrix portions of the SCP. The chain of command and delegation of authority during normal operations is discussed in the PSP. 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.B.3.a.

Physical Layout

The provisions of 10 CFR Part 73, Appendix C, Section II.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 upon 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 OCA, PA, vital areas, 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.B.3.b, and described above.

Safeguards Systems

The provisions of 10 CFR Part 73, Appendix C, Section II.B.3.c, require, in part, that the SCP include a description of the physical security systems that support and influence how the applicant will respond to an event in accordance with the DBT 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 describes 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 describes how physical security systems will be used to respond to a threat at the site, as required by Appendix C, Section II.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 to protect target set equipment..

Law Enforcement Assistance

The provisions of 10 CFR Part 73, Appendix C, Section II.B.3.d, require in part, that the applicant provide a listing of available law enforcement agencies and a general description of their response capabilities and their criteria for response and a discussion of working agreements or arrangements for communicating with these agencies.

Section 4.4 of the SCP states in detail the role of LLEA in the site protective strategy. In accordance with Appendix C, Section II.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.B.3.e, require in part, that the SCP include a discussion of State laws, local ordinances, and company policies and practices that govern applicant response to incidents and must include, but is not limited to, the following: 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 details the site security policies, including the use of deadly force and authority to request offsite assistance, as required by Appendix C, Section II.B.3.e.

Administrative and Logistical Considerations

The provisions of 10 CFR Part 73, Appendix C, Section II.B.3.f, require in part, that the applicant provide descriptions of applicant practices, which 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 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, security shift team leader, facility procedures and administrative forms.

The staff has reviewed the applicant's description in SCP Sections 4, 4.1, 4.1.1, 4.1.2, and 4.2 through 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 SCP is consistent with the acceptance criteria in NUREG-0800, Section 13.6.1, the staff finds that the description provided in the SCP meets the requirements of 10 CFR Part 73, Appendix C, Section II.B.3 and is, therefore, acceptable.

13.6.4.3.5 Response Capabilities

This section outlines the response by the applicant to threats to the facility. As set forth below, the applicant describes in details how they protect against the DBT with onsite and offsite organizations, in accordance with the regulation of 10 CFR 50.54(p)(1) and (hh)(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. In addition, Appendix C, "Introduction," states, in part, it is important to note that an applicant's SCP is intended to be complementary to 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 52.79 "Contents of Applications; Technical Information and Final Safety Analysis Report."

Response to Threats

Section 5.1 of the SCP describes how the protective strategy is designed to defend the facility against all aspects of the DBT. Each organization has defined roles and responsibilities.

Armed Response Team

Section 5.2 of the SCP notes individuals from the Responsibility Matrix and their role in the site protective strategy. This section also notes the minimum number of individuals and their contingency equipment for implementation of the protective strategy. The applicant described the armed response team 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.

Supplemental Security Officer

Section 5.3 of the SCP details the role of supplemental security officers in the site protective strategy. The applicant described the use of supplemental security officers, 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 site protective strategy, including responsibilities, strategies, and conditions for operator actions as discussed in 10 CFR 50.54(hh)(I).

Emergency Plan Response

Section 5.5 of the SCP notes the integration of the Emergency Plan with the site's protective strategy, and gives some examples of how the Emergency Plan can influence the protective strategy as discussed in 10 CFR 73.55(b)(11).

Local Law Enforcement Agencies (LLEA)

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. Furthermore, Section 5.6 provides a general description of the LLEA response capability and meets the corresponding portions of 10 CFR 73.55(k)(9).

State Response Agencies

Section 5.7 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 State response agencies that will respond to the site as a part of the protective strategy. Furthermore, Section 5.7 provides a general description of the LLEA response capability and meets the corresponding portions of 10 CFR 73.55(k)(9).

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 provides a general description of the LLEA response capability and meets the corresponding portions of 10 CFR 73.55(k)(9).

Response to ISFSI Events

Section 5.9 is not applicable for Turkey Point Units 6 and 7 since there is no ISFSI associated with this application.

The staff has reviewed the applicant's description in SCP Sections 5.0 through 5.9 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 SCP is consistent with the acceptance criteria in NUREG-0800, Section 13.6.1, the staff finds that the description provided in the SCP meets the requirements of 10 CFR 50.54(p)(1) and (hh), 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 is, therefore, acceptable. In addition, Appendix C, "Introduction" states, in part, that it is important to note that an applicant's SCP is intended to be complementary to any emergency plans developed pursuant to Appendix E to 10 CFR Part 50 and 10 CFR 52.17.

The following portion of this technical evaluation section is reproduced from Section 13.6.4.3 of the VEGP SER:

13.6.4.3.6 Defense-In-Depth

Section 6 of the SCP lists site physical security characteristics, programs, and the strategy elements that illustrate the defense-in-depth nature of the site protective strategy as required in 10 CFR 73.55(b)(3).

The NRC staff has reviewed the applicant's description in SCP Section 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 SCP is consistent with the acceptance criteria in NUREG-0800, Section 13.6.1, the staff finds that the description provided 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 details the primary security functions of the site, and their roles in the site protective strategy. It also notes the development of target sets, and their function in the development of the site's protective strategy.

The NRC staff has reviewed the applicant's description in SCP Section 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 SCP is consistent with the acceptance criteria in

NUREG-0800, Section 13.6.1, the staff finds that the description provided in the SCP meets the requirements of 10 CFR 10 CFR 73.55(b) and is, therefore, acceptable.

13.6.4.3.8 Protective Strategy

The provisions of 10 CFR Part 73, Appendix C, Section II.B.3.c(v), require that applicants 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) include measures that limit the exposure of security personnel to possible attack, (4) include 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 describes the site protective strategy.

The staff has reviewed the applicant's description in SCP Section 8 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 NUREG-0800, Section 13.6.1, the staff finds that the description provided in the SCP provides reasonable assurance that the licensee will meet the requirements of 10 CFR Part 73, Appendix C, Section II.B.3.c(v) and is, therefore, acceptable.

The following portion of this technical evaluation section is reproduced from Section 13.6.4.3 of the VEGP SER:

13.6.4.3.9 Conclusions on the Safeguards Contingency Plan

On the basis of the NRC 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 DBT of radiological sabotage as stated in 10 CFR 73.1. The target sets, Target Set Analysis and Site Protective Strategy are in the facility implementing procedures, which were not subject to NRC staff review as part of this COL application and are, therefore, subject to future NRC inspection in accordance with 10 CFR 73.55(c)(7)(iv) and 10 CFR Part 73, Appendix C, Section II.B.5(iii). The NRC staff concludes that complete and procedurally correct implementation of the SCP will 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.

13.6.5 Post Combined License Activities

For the reasons discussed in the technical evaluation section above, the staff finds the following license condition acceptable:

- License Condition (13-7) - No later than 12 months after issuance of the COL, FPL shall submit to the Director of NRO, or the Director's designee, a schedule for implementation of the operational programs listed in FSAR Table 13.4-201, including the associated estimated date for initial loading of fuel. The schedule shall be updated every 6 months

until 12 months before scheduled fuel loading, and every month thereafter until all the operational programs listed in FSAR Table 13.4-201 have been fully implemented.

13.6.6 Conclusion

The staff reviewed the application and checked the referenced DCD. The staff's review confirmed that the applicant has addressed the relevant information relating to this section, and no outstanding information related to this section remains to be addressed in the Turkey Point Units 6 and 7 COL FSAR. The results of the staff's technical evaluation of the information incorporated by reference in the Turkey Point Units 6 and 7 COLA are documented in NUREG-1793 and its supplements.

The staff concludes that the relevant information presented in the Turkey Point Units 6 and 7 COL FSAR is acceptable based on the applicable regulations specified in Section 13.6.4 of this SER. The staff based its conclusion on the following:

- STD COL 13.6-1, as related to the physical protection program, is acceptable based on the following discussion. The staff's review of the Turkey Point Units 6 and 7 PSP, T&QP, and SCP has focused on ensuring the necessary programmatic elements are included in these plans 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.

- As described in this section, the staff has determined that these plans include 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 is dependent on the procedures and practices the applicant develops to satisfy the programmatic elements of its PSP, T&QP, and SCP. The target set analysis and site protective strategy are in facility implementing procedures which were not subject to NRC staff review as part of this COLA and are therefore subject to future NRC inspection 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 provides 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 testing and evaluation, the NRC's baseline inspections and force-on-force exercises, enhancements to the applicant's PSP, T&QP, and SCP may be required to ensure the overall protective strategy can be effectively implemented. As such, staff 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 applicant shall correct the plans to address these deficiencies in a timely manner and to notify the NRC of these plan changes in accordance with the requirements of 10 CFR 50.54(p) or 10 CFR 50.90, "Application for amendment of license, construction permit, or early site permit."

  The COL applicant's security plan information is withheld from public disclosure in accordance with the provisions of 10 CFR 73.21.

13.6.A Site-Specific ITAAC for Physical Security

13.6.A.1 Introduction

Part 10, "Proposed License Conditions and ITAAC," Appendix B, "Inspections, Tests, Analysis, and Acceptance Criteria" of the Turkey Point Units 6 and 7 COLA describes the license conditions for the plant's physical protection systems or features to provide physical protection of the site-specific protective strategy and elements of a site security program. The COLA incorporates by reference Tier 1 Section 2.6.9 of the AP1000 DCD, including plant layout and configurations of barriers, and lists ITAAC related to the site-specific design for achieving detection, assessment, communications, delay, and response for physical protection against potential acts of radiological sabotage and theft of special nuclear material.

The design bases or supporting security analyses and assumptions related to the design descriptions of security-related features incorporated by reference from the AP1000 DCD are in Westinghouse TR-94. Descriptions of site-specific security structures, programs and contingency measures are in the Turkey Point Units 6 and 7 PSP, which includes the site PSP, T&QP and the SCP.

13.6.A.2 Summary of Application

Section 14.3 of the Turkey Point Units 6 and 7 COL FSAR, Revision 8 incorporates by reference Section 14.3 of the AP1000 DCD, Revision 19. Part 10, Revision 8 of the Turkey Point Units 6 and 7 COLA incorporates by reference DCD Tier 1 Section 2.6.9, which includes the physical security-inspections, tests, analyses, and acceptance criteria (PS-ITAAC) that are within the scope of the AP1000 standard design. Site-specific PS-ITAAC that are outside the scope of AP1000 DCD Tier 1 Section 2.6.9 are provided in Table 2.6.9-2 of Appendix B to Part 10 of the Turkey Point Units 6 and 7 COLA.

In addition, in Turkey Point Units 6 and 7 COL FSAR Section 14.3, the applicant provided the following:

Supplemental Information

- STD SUP 14.3-1

The applicant provided supplemental information related to physical security in STD SUP 14.3-1 in PTN COL FSAR Section 14.3.2.3.2.

License Condition

- Part 10, License Condition 1

The applicant provided a license condition in Part 10 of the Turkey Point Units 6 and 7 COLA, Revision 6, which will incorporate the ITAAC identified in the tables in Appendix B. The staff evaluates this license condition in Chapter 1 of this SER.

13.6.A.3 Regulatory Basis

The regulatory basis of the information incorporated by reference is addressed in NUREG-1793 and its supplements.

In addition, the acceptance criteria associated with the relevant requirements of the Commission regulations are given in 10 CFR Part 73. The regulation includes specific security and performance requirements that, when adequately implemented, are designed to protect nuclear power reactors against acts of radiological sabotage, prevent the theft or diversion of special nuclear material, and protect safeguards information against unauthorized release.

The provisions of 10 CFR 52.80, Subpart A, require that information submitted for a COL include the proposed ITAAC that the licensee shall perform, and the acceptance criteria that are necessary and sufficient to provide reasonable assurance that, if the ITAAC are met, the facility has been constructed and will operate in conformity with the COL, the provisions of the Atomic Energy Act, and the NRC's regulations.

The Turkey Point Units 6 and 7 design descriptions, commitments, and acceptance criteria for the security features, including the plant's layout and determination of vital equipment and areas, for a certified design are based on physical protection systems or hardware provided for meeting requirements of the following Commission regulations:

- 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities"10 CFR Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants"10 CFR 73.1(a)(1), "Radiological Sabotage"

- 10 CFR 73.55, "Requirements for physical protection of licensed activities in nuclear power reactors against radiological sabotage," Appendix B, "General Criteria for Security Personnel"; Appendix C, "Nuclear Power Plant Safeguards Contingency Plans"; Appendix G, "Reportable Safeguards Events"; and Appendix H, "Weapons Qualification Criteria"

- 10 CFR Part 74, "Material control and accounting of special nuclear material"

- 10 CFR 100.21(f), "Non-Seismic Siting Criteria"

Regulatory requirements and acceptance criteria related to physical protection systems or hardware are identified in Section 14.3.12 of NUREG-0800.

Regulatory guidance documents that are applicable to this evaluation are:

- RG 1.91, "Evaluations of Explosions Postulated to Occur at Transportation Routes Near Nuclear Power Plants," Revision 1

- RG 1.206, "Combined License Applications for Nuclear Power Plants'

- RG 4.7, "General Site Suitability Criteria for Nuclear Power Stations," Revision 2

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

- RG 5.12, "General Use of Locks in the Protection and Control of Facilities and Special Nuclear Materials

- RG 5.44, "Perimeter Intrusion Alarm Systems," Revision 3

- RG 5.62, "Reporting of Safeguards Events," Revision 1
- RG 5.65, "Vital Area Access Controls, Protection of Physical Protection System Equipment and Key and Lock Controls"
- RG 5.66, "Access Authorization Program for Nuclear Power Plants"
- Information Notice 86-83, "Underground Pathways into Protected Areas, Vital Areas, and Controlled Access Areas," September 19, 1986
- Regulatory Information Summary (RIS) 2005-04, "Guidance on the Protection of Unattended Openings that Intersect a Security Boundary or Area," April 14, 2005. (Exempt from public disclosure in accordance with 10 CFR 2.390, "Public inspections, exemptions, requests for withholding.")

The COL applicant is required to describe commitments for establishing and maintaining a physical protection system (engineered and administrative controls), organization, programs, and procedures for implementing a site-specific strategy that, if adequately implemented, provide high assurance for protection of the plant against the DBT. The site-specific physical protection system described must be reliable and available and implement the concept of defense-in-depth protection in order to provide a high assurance of protection. The security operational programs and the physical protection system are required to meet the specific performance requirements of 10 CFR Part 26; 10 CFR 73.54, "Protection of Digital Computer and Communication Systems and Networks"; 10 CFR 73.55; 10 CFR 73.56, "Personnel access authorization requirements for nuclear power plants"; 10 CFR 73.57, "Requirements for criminal history records checks of individuals granted unescorted access to a nuclear power facility or access to Safeguards Information"; and 10 CFR 73.58. Physical protection hardware within the scope of the AP1000 design is addressed in the AP1000 DCD.

13.6.A.4 Technical Evaluation

The staff reviewed Section 14.3 of the Turkey Point Units 6 and 7 COL FSAR and checked the referenced DCD to ensure that the combination of the DCD and the COLA represents the complete scope of information relating to this review topic.[1] The staff's review confirmed that the information in the application and incorporated by reference addresses the required information relating to ITAAC for physical security. The results of the staff's evaluation of the information incorporated by reference in the Turkey Point Units 6 and 7 COLA are documented in NUREG-1793 and its supplements.

Section 1.2.3 of this SER provides a discussion of the strategy used by the NRC to perform one technical review for each standard issue outside the scope of the DC and use this review in evaluating subsequent COLAs. To ensure that the staff's findings on standard content that were documented in the SER for the reference COLA (VEGP Units 3 and 4) were equally applicable to the Turkey Point Units 6 and 7 COLA, the staff undertook the following reviews:

- The staff compared the VEGP COL FSAR, Revision 5 to the Turkey Point Units 6 and 7 COL FSAR. In performing this comparison, the staff considered changes made to the Turkey Point Units 6 and 7 COL FSAR (and other parts of the COLA, as applicable) resulting from RAIs.

- The staff confirmed that all responses to RAIs identified in the corresponding standard content evaluation were endorsed.

- The staff verified that the site-specific differences were not relevant.

The staff has completed its review and found the evaluation performed for the standard content to be directly applicable to the Turkey Point Units 6 and 7 COLA. This standard content material is identified in this SER by use of italicized, double-indented formatting. The staff confirmed that the November 15, 2010, FPL letter L-2010-258 (ADAMS Accession No. ML103210407) contained the same technical information provided in the June 11, 2010, VEGP letter discussed in the standard content material below.

The following portion of this technical evaluation section is reproduced from Section 13.6.A.4 of the VEGP SER:

Supplemental Information

- *STD SUP 14.3-1*

STD SUP 14.3-1 adds the following after DCD Section 14.3.2.2 as new Section 14.3.2.3.2:

> *Generic PS-ITAAC have been developed in a coordinated effort between the NRC and the Nuclear Energy Institute (NEI) as outlined in Appendix C.II.I-C of Regulatory Guide 1.206. These generic ITAAC have been tailored to the AP1000 design and site-specific security requirements.*

In Part 10, Appendix B of the VEGP Units 3 and 4 COL application, SNC describes the ITAAC for the plant's physical protection systems or features to provide physical protection of the site-specific protective strategy and elements of a site security program. The COL application incorporates by reference Tier 1 Section 2.6.9 of the AP1000 DCD, including plant layout and configurations of barriers, and listed ITAAC related to the site-specific design for achieving detection, assessment, communications, delay, and response for physical protection against potential acts of radiological sabotage and theft of special nuclear material. DCD Tier 1 Section 2.6.9 includes the physical security ITAAC that are in the scope of the AP1000 standard design. Site-specific physical security ITAAC that are outside the scope of AP1000 DCD Tier 1 Section 2.6.9 are provided in Table 2.6.9-2 of Appendix B to Part 10 of the VEGP COL application.

The NRC staff's evaluation of the PS-ITAAC (STD SUP 14.2-1) is documented in the Sections 13.6.A.4.1 through 13.6.A.4.3 of this SER.

13.6.A.4.1 Detection and Assessment Hardware

The applicant submitted the following ITAAC for detection and assessment hardware in their letter dated June 11, 2010, "Response to Request for Additional Information Letter No. 047, Supplement 2, Physical Security Inspections, Tests,

Analyses, and Acceptance Criteria," This letter was used to complete the evaluation below.

1. *The external walls, doors, ceiling, and floors in the location within which the last access control function for access to the protected area is performed are bullet resistant to at least Underwriters Laboratory Ballistic Standard 752, Level 4. (Item 6 in Appendix A to Section 14.3.12 of NUREG-0800.)*

2. *Physical barriers for the protected area perimeter are not part of vital area barriers. (Item 2.a in Appendix A to Section 14.3.12 of NUREG-0800.)*

3.

   a) *Isolation zones exist in outdoor areas adjacent to the physical barrier at the perimeter of the protected area that allows 20 feet of observation on either side of the barrier. (Item 3.a in Appendix A to Section 14.3.12 of NUREG-0800.)*

   b) *Where permanent buildings do not allow a 20-foot observation distance on the inside of the protected area, the building walls are immediately adjacent to, or an integral part of, the protected area barrier. (Item 3.c in Appendix A to Section 14.3.12 of NUREG-0800.) The isolation zones are monitored with intrusion detection equipment that provides the capability to detect and assess unauthorized persons. (Item 3.b in Appendix A to Section 14.3.12 of NUREG-0800.)*

4. *The intrusion detection and assessment equipment at the protected area perimeter:*

   a) *Detects penetration or attempted penetration of the protected area barrier and concurrently alarms in both the Central Alarm Station and Secondary Alarm Station. (Item 4.a in Appendix A to Section 14.3.12 of NUREG-0800.)*

   b) *The intrusion detection and assessment equipment at the protected area perimeter remains operable from an uninterruptible power supply in the event of the loss of normal power. (Item 4.c in Appendix A to Section 14.3.12 of NUREG-0800.)*

6. *An access control system with numbered picture badges is installed for use by individuals who are authorized access to protected areas without escort. (Item 9 in Appendix A to Section 14.3.12 of NUREG-0800.)*

8.

   a) *Penetrations through the protected area barrier are secured and monitored. (Item 2.b in Appendix A to Section 14.3.12 of NUREG-0800.)*

b) Unattended openings (such as underground pathways) that intersect the protected area boundary or vital area boundary will be protected by a physical barrier and monitored by intrusion detection equipment or provided surveillance at a frequency sufficient to detect exploitation. (Item 2.c in Appendix A to Section 14.3.12 of NUREG-0800.)

On the basis of its review the NRC staff determined that the applicant has adequately revised Table 2.6.9-2 for Part 10 to the VEGP COL application PS-ITAAC items 2(a), 2(b), 2 (c), 3(a), 3(b), 3(c), 4(a), 4(c), 6(partially), and 9 identified in Appendix A to Section 14.3.12 of NUREG-0800.

The VEGP COL application references the AP1000 DCD, which addressed NUREG-0800, Section 14.3.12 PS-ITAAC 4(b), 5, 6(partially), 10, 11(a), 11(b), 11(c) and 14. The staff has determined that PS-ITAAC 6, described in NUREG-0800, Section 14.3.12 has been fully addressed between the VEGP submission and the AP1000 DCD.

In a supplemental response to RAI 14.3.12-1, the applicant stated:

The information contained in SRP ITAAC number 11(d) is redundant to existing ITAAC in the AP1000 Design Certification Document (DCD). AP1000 DCD security ITAAC numbers 1, 4, 5(a), 5(b), 5(c), 13(a), 13(b), 13(c), and 15(b) demonstrate that the central and secondary alarm stations are equal and redundant, by being constructed, located, protected, and equipped to the standards for the central alarm station.

In RAI SRP 14.3.12-NSIR-7, Revision 1, Westinghouse stated:

No corresponding ITAAC has been provided for SRP 14.3.12 ITAAC number 11(d). The information contained in SRP ITAAC number 11(d) is redundant to existing ITAACs. AP1000 security ITAAC numbers 1, 4, 5(a), 5(b), 5(c), 13, and 15(b) demonstrate that the central and secondary alarm stations are constructed, located, protected, and equipped to the standards for the central alarm station.

On the basis of its review, the NRC staff determined that the applicant has adequately shown that NUREG-0800, Section 14.3.12 detection and assessment hardware ITAAC 11(d) is addressed.

13.6.A.4.2 Delay or Barrier Design

The applicant submitted the following ITAAC for Delay or Barrier Design in their "Response to Request for Additional Information Letter No. 047, Supplement 2, Physical Security Inspections, Tests, Analyses, and Acceptance Criteria," Dated June 11, 2010. This letter was used to complete the evaluation below.

5. Access control points are established to:

a) Control personnel and vehicle access into the protected area. (Item 8.a in Appendix A to Section 14.3.12 of NUREG-0800.)

b) Detect firearms, explosives, and incendiary devices at the protected area personnel access points. (Item 8.b in Appendix A to Section 14.3.12 of NUREG-0800.)

7. Access to vital equipment physical barriers requires passage through the protected area perimeter barrier. (Item 1.b in Appendix A to Section 14.3.12 of NUREG-0800.)

On the basis of its review, the NRC staff determined that the applicant has adequately addressed NUREG-0800, Section 14.3.12 delay or barrier design PS-ITAAC 1(b)(partially),8(a) and 8(b).

The VEGP COL application references the AP1000 DCD, which addressed NUREG-0800, Section 14.3.12 PS-ITAAC 1(a), 1(b)(partially), 7, 13(a) and 13(b). The staff has determined that PS-ITAAC 1(b) described in NUREG-0800, Section 14.3.12 has been fully addressed between the VEGP submission and the AP1000 DCD.

13.6.A.4.3 Systems, Hardware, or Features Facilitating Security Response and Neutralization

The applicant submitted the following ITAAC for Systems, Hardware, or Features Facilitating Security Response and Neutralization in their "Response to Request for Additional Information Letter No. 047, Supplement 2, Physical Security Inspections, Tests, Analyses, and Acceptance Criteria," Dated June 11, 2010. This letter was used to complete the evaluation below.

9. Emergency exits through the protected area perimeter are alarmed and secured with locking devices to allow for emergency egress. (Item 15 in Appendix A to Section 14.3.12 of NUREG-0800.)

On the basis of its review, the NRC staff determined that the applicant has adequately addressed NUREG-0800, Section 14.3.12 delay or barrier design PS-ITAAC 15(partially).

The VEGP COL application references the AP1000 DCD, which addressed NUREG-0800, Section 14.3.12 PS-ITAAC 12, 15(partially) 16(a), 16(b) and 16(c). The staff has determined that PS-ITAAC 15 described in NUREG-0800, Section 14.3.12 has been fully addressed between the VEGP submission and the AP1000 DCD.

On the basis of its review, the staff finds that since the applicant revised Turkey Point Units 6 and 7 COL FSAR Part 10 to incorporate the requirements for PS-ITAAC, the response to VEGP RAI 14.03.12- 1, 2 and 3 has adequately addressed NUREG-0800, Section 14.3.12, and is therefore, acceptable.

13.6.A.5 *Post-Combined License Activities*

For the reasons discussed in the technical evaluation section above, the staff proposes to include the following ITAAC for physical security:

- The licensee shall perform and satisfy the ITAAC defined in Table 13.6A-1, "Site Specific Physical Security."

13.6.A.6 *Conclusion*

The staff reviewed the application and checked the referenced DCD. The staff's review confirmed that the applicant has addressed the relevant information relating to this section, and no outstanding information related to this section remains to be addressed in the Turkey Point Units 6 and 7 COL FSAR. The results of the staff's technical evaluation of the information incorporated by reference in the Turkey Point Units 6 and 7 COLA are documented in NUREG-1793 and its supplements.

The staff concludes that the relevant information presented in Turkey Point Units 6 and 7 COL FSAR and the additional information received in the November 15, 2010, FPL letter L-2010-258 (ADAMS Accession No. ML103210407) is acceptable based on the applicable regulations specified in Section 13.6.A.4 of this SER. The staff based its conclusion on the following:

- STD SUP 14.3-1, as related to PS-ITAAC, is acceptable based on the following discussion. The staff finds that the applicant adequately describes the physical security systems or provides or facilitates the implementation of the site-specific protective strategy and security programs. The applicant adequately describes the site-specific PS-ITAAC for meeting the requirements of 10 CFR 73.55 and provides the technical bases for establishing a PS-ITAAC for the protection against acts of radiological sabotage and theft of special nuclear material. The applicant includes systems and features as stated in Turkey Point Units 6 and 7 COL FSAR Chapter 13 and referenced TRs. The applicant has provided adequate descriptions of objectives, prerequisites, test methods, data required, and acceptance criteria for security related ITAAC for the approval of the Turkey Point Units 6 and 7 COL.

Table 13.6A-1: Site-Specific Physical Security Inspections, Tests, Analyses and Acceptance Criteria

Design Commitment	Inspections, Tests, and Analyses	Acceptance Criteria
1. The external walls, doors, ceiling, and floors in the location where the last access control function for access to the protected area is performed are bullet- resistant to at least Underwriters Laboratory Ballistic Standard 752, level 4.	Type test, analysis, or a combination of type test and analysis will be performed for the external walls, doors, ceilings, and floors in the location within which the last access control function for access to the protected area is performed.	The external walls, doors, ceilings, and floors in the location where the last access control function for access to the protected area is performed are bullet- resistant to at least Underwriters Laboratory Ballistic Standard 752, level 4.
2. Physical barriers for the protected area perimeter are not part of vital area barriers.	An inspection of the protected area perimeter barrier will be performed.	Physical barriers at the perimeter of the protected area are separated from any other barrier designated as a vital area barrier.

Table 13.6A-1: Site-Specific Physical Security Inspections, Tests, Analyses and Acceptance Criteria

Design Commitment	Inspections, Tests, and Analyses	Acceptance Criteria
3.		
a) Isolation zones exist in outdoor areas adjacent to the physical barrier at the perimeter of the protected area that allows 20 feet of observation on either side of the barrier. Where permanent buildings do not allow a 20-foot observation distance on the inside of the protected area, the building walls are immediately adjacent to, or an integral part of, the protected area barrier.	Inspections will be performed of the isolation zones in outdoor areas adjacent to the physical barrier at the perimeter of the protected area.	Isolation zones exist in outdoor areas adjacent to the physical barrier at the perimeter of the protected area and allow 20 feet of observation and assessment of the activities of people on either side of the barrier. Where permanent buildings do not allow a 20-foot observation and assessment distance on the inside of the protected area, the building walls are immediately adjacent to, or an integral part of, the protected area barrier and the 20-foot observation and assessment distance does not apply.
b) The isolation zones are monitored with intrusion detection equipment that provides the capability to detect and assess unauthorized persons.	Inspections will be performed of the intrusion detection equipment within the isolation zones.	The isolation zones are equipped with intrusion detection equipment that provides the capability to detect and assess unauthorized persons.

Table 13.6A-1: Site-Specific Physical Security Inspections, Tests, Analyses and Acceptance Criteria

Design Commitment	Inspections, Tests, and Analyses	Acceptance Criteria
4. The intrusion detection and assessment equipment at the protected area perimeter: a) detects penetration or attempted penetration of the protected area barrier and concurrently alarms in both the central alarm station and secondary alarm station, and b) remains operable from an uninterruptible power supply in the event of the loss of normal power.	Tests, inspections or a combination of tests and inspections of the intrusion detection and assessment equipment at the protected area perimeter and its uninterruptible power supply will be performed.	The intrusion detection and assessment equipment at the protected area perimeter: a) detects penetration or attempted penetration of the protected area barrier and concurrently alarms in the central alarm station and secondary alarm station, and b) remains operable from an uninterruptible power supply in the event of the loss of normal power.
5. Access control points are established to: a) control personnel and vehicle access into the protected area. b) detect firearms, explosives, and incendiary devices at the protected area personnel access points.	Tests, inspections, or combination of tests and inspections of installed systems and equipment at the access control points to the protected area will be performed.	The access control points for the protected area: a) are configured to control personnel and vehicle access. b) include detection equipment that is capable of detecting firearms, incendiary devices, and explosives at the protected area personnel access points.

Table 13.6A-1: Site-Specific Physical Security Inspections, Tests, Analyses and Acceptance Criteria

Design Commitment	Inspections, Tests, and Analyses	Acceptance Criteria
6. An access control system with numbered picture badges is installed for use by individuals who are authorized access to protected areas and vital areas without escort.	A test of the access control system with numbered picture badges will be performed.	The access authorization system with numbered picture badges can identify and authorize protected area and vital area access only to those personnel with unescorted access authorization.
7. Access to vital equipment physical barriers requires passage through the protected area perimeter barrier.	Inspection will be performed to confirm that access to vital equipment physical barriers requires passage through the protected area perimeter barrier.	Vital equipment is located within a protected area such that access to vital equipment physical barriers requires passage through the protected area perimeter barrier.
8. a) Penetrations through the protected area barrier are secured and monitored.	Inspections will be performed of penetrations through the protected area barrier.	Penetrations and openings through the protected area barrier are secured and monitored.
b) Unattended openings (such as underground pathways) that intersect the protected area boundary or vital area boundary will be protected by a physical barrier and monitored by intrusion detection equipment or provided surveillance at a frequency sufficient to detect exploitation.	Inspections will be performed of unattended openings that intersect the protected area boundary or vital area boundary.	Unattended openings (such as underground pathways) that intersect the protected area boundary or vital area boundary are protected by a physical barrier and monitored by intrusion detection equipment or provided surveillance at a frequency sufficient to detect exploitation.

Table 13.6A-1: Site-Specific Physical Security Inspections, Tests, Analyses and Acceptance Criteria

Design Commitment	Inspections, Tests, and Analyses	Acceptance Criteria
9. Emergency exits through the protected area perimeter are alarmed and secured with locking devices to allow for emergency egress.	Tests, inspections, or a combination of tests and inspections of emergency exits through the protected area perimeter will be performed.	Emergency exits through the protected area perimeter are alarmed and secured by locking devices that allow prompt egress during an emergency.

13.7 Fitness for Duty

13.7.1 Introduction

Pursuant to 10 CFR 52.79(a)(44), COLAs must include a description of the fitness for duty (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 as demonstrated by the avoidance of substance abuse; (2) individuals are not under the influence of any substance, legal or illegal, or mentally or physically impaired from any cause, which 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 his or her duties are managed commensurate with maintaining public health and safety.

13.7.2 Summary of Application

Turkey Point Units 6 and 7 COL FSAR Section 13.7 is a new section added after Section 13.6 of the AP1000 DCD. The references that are currently in AP1000 DCD Section 13.7 have been redistributed to other Turkey Point Units 6 and 7 COL FSAR sections. There is no information associated with the FFD program incorporated by reference from the AP1000 DCD.

In addition, in Turkey Point Units 6 and 7 COL FSAR Section 13.7, Revision 8, the applicant provided the following:

Supplemental Information

- STD SUP 13.7-1

The applicant provided standard supplemental information in Turkey Point Units 6 and 7 COL FSAR Section 13.7 describing the FFD program for both the construction phase and the operating phase of the units. The construction phase program will be consistent with NEI 06-06, "Fitness for Duty Program Guidance for New Nuclear Power Plant Construction Sites," and the

construction phase program will be implemented prior to onsite construction of safety- and security-related SSCs. The operations phase program will be consistent with 10 CFR Part 26.

License Conditions

- Part 10, License Condition 6

The applicant proposed a license condition to provide a schedule to support the NRC's inspection of operational programs included in the Turkey Point Units 6 and 7 COL FSAR Table 13.4-201 including the FFD program.

13.7.3 Regulatory Basis

The applicable regulatory requirements for STD SUP 13.7-1 are as follows:

- 10 CFR Part 26, "Fitness for duty programs"
- 10 CFR 52.79(a)(44)

Regulatory guidance for FFD programs is included in RG 1.206.

13.7.4 Technical Evaluation

The staff reviewed Section 13.7 of the Turkey Point Units 6 and 7 COL FSAR, Revision 8, to ensure that the COLA 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 FFD program.

Section 1.2.3 of this SER provides a discussion of the strategy used by the NRC to perform one technical review for each standard issue outside the scope of the DC and use this review in evaluating subsequent COLAs. To ensure that the staff's findings on standard content that were documented in the SER for the reference COLA (VEGP Units 3 and 4) were equally applicable to the Turkey Point Units 6 and 7, COLA, the staff undertook the following reviews:

- The staff compared the VEGP COL FSAR, Revision 5, to the Turkey Point Units 6 and 7 COL FSAR. In performing this comparison, the staff considered changes made to the Turkey Point Units 6 and 7, COL FSAR (and other parts of the COLA, as applicable) resulting from RAIs.

- The staff verified that the site-specific differences were not relevant.

The staff has completed its review and has verified that the Turkey Point Units 6 and 7 application incorporates the standard content information included in the Vogtle application. Accordingly, the staff finds the evaluation performed for the standard content to be directly applicable to the Turkey Point Units 6 and 7 COLA. This standard content material is identified in this SER by use of italicized, double-indented formatting. Instead of confirming that all responses to RAIs identified in the corresponding standard content evaluation were endorsed by the Turkey Point Units 6 and 7, applicant (which is a typical step when comparing the two applications), the staff provides its evaluation of similar RAIs issued to Turkey Point Units 6 and 7, following the standard content material. The one confirmatory item in the standard content

material retains the number assigned in the VEGP SER, and is also addressed following the standard content material.

The following portion of this technical evaluation section is reproduced from Section 13.7.4 of the VEGP SER:

Supplemental Information

- *STD SUP 13.7-1*

The applicant provided a new Section 13.7 in the VEGP COL FSAR describing the FFD program. STD SUP 13.7-1 added the following text to Section 13.7:

> *The Fitness for Duty (FFD) Program (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* [FSAR] *Table 13.4-201.*
>
> *The construction phase program is consistent with NEI 06-06 (*[FSAR] *Reference 201). The workforce population subject to random testing during construction is determined on a weekly basis by averaging the total number of active construction badges over each preceding seven-day period. The random selection from each week's workforce population is identified by a standard computer-generated random number generator using this number of active badges as the range of numbers considered in the weekly random testing selection.*
>
> *The operations phase program is consistent with 10 CFR Part 26.*

The staff notes that Reference 201 in the above text refers to Revision 4 of NEI 06-06.

The NRC staff's review of STD SUP 13.7-1 included the following: (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 operations phase FFD operational programs.

The NRC staff issued three RAIs to obtain further clarification on the applicant's FFD Program. The first two RAIs discussed below are associated with the resolution of STD SUP 13.7-1.

In RAI 13.6-33, the staff asked how the applicant intends to update its FFD program for the construction phase. NEI 06-06 provides examples of the FFD program that is required and, if this guidance is endorsed by the NRC, will provide an acceptable method of complying with the NRC's regulations. If the NRC endorses NEI 06-06, does the applicant intend to update its FFD program for the construction phase to comply with NEI 06-06? If future revisions to NEI 06-06 are endorsed by the NRC, does the applicant intend to update its FFD

program for the construction phase to comply with certain clarifications, additions, and exceptions in these future, endorsed revisions, as necessary?

The applicant replied that it submitted an FFD Program for NRC approval as part of the Limited Work Authorization (LWA) request, and that the program is now being implemented as part of the construction activities. If NEI 06-06 is endorsed by the NRC, SNC plans to transition to a program that follows the guidance in NEI 06-06. The COL application currently commits to NEI 06-06, Revision 4, and will be changed in a future revision to commit to NEI 06-06, Revision 5. The applicant will evaluate substantial changes in subsequent revisions to NEI 06-06 and modify the construction phase FFD program to incorporate those substantial changes determined to be appropriate.

The applicant's response to RAI 13.6-33, as well as its supplemental response, revises Section 13.7 to address the issues discussed above. The relevant portion of the proposed revised text, to be included in a future revision of the VEGP COL FSAR, is included below:

> *The Fitness for Duty Program (FFD) is implemented and maintained in multiple and progressive phases dependent on the activities, duties, or access afforded to certain individuals at the construction site. In general, two different FFD programs will be implemented: a construction FFD program and an operations FFD program. The construction and operations phase programs are illustrated in* [FSAR] *Table 13.4-201.*
>
> *The construction FFD program is consistent with NEI 06-06 (*[FSAR] *Reference 201). NEI 06-06 applies to persons constructing or directing the construction of safety- and security-related structures, systems, or components performed onsite where the new reactor will be installed and operated. 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 operations FFD program. Prior to issuance of a Combined License, the construction FFD program at a new reactor construction site for those subject to Subpart K will be reviewed and revised as necessary should substantial revisions occur to either NEI 06-06 following NRC endorsement or the requirements of 10 CFR Part 26.*

The staff notes that Reference 201 in the above text refers to Revision 5 of NEI 06-06.

In RAI 13.6-34, the staff asked the applicant to: (1) describe how FSAR Table 13.4-201, Item 15, related to the security operational program, comports with 10 CFR 26.3, "Scope," and 10 CFR 26.4, and the guidance provided in the

NRC's letter to NEI dated December 2, 2009, entitled "Status of U.S. Nuclear Regulatory Commission Review and Endorsement of NEI 06-06, 'Fitness for Duty Program Guidance for New Nuclear Power Plant Construction Sites,'" and (2) provide site-specific information to clearly and sufficiently describe the applicant's FFD program. This information would include, but is not limited to, any deviations or exceptions to the requirements of 10 CFR Part 26 as further described in NEI 06-06.

The applicant stated that the response to RAI 13.6-33 provided the changes to the COL application that will describe the FFD program required by 10 CFR Part 26. Site-specific information is also provided in that response to clarify which program will be used to cover the various classifications of workers that must be covered in accordance with 10 CFR Part 26. The applicant's response to RAI 13.6-35 (below) revises FSAR Table 13.4-201, Item 20 to address the guidance provided in the NRC's December 2, 2009 letter. The proposed revision to Item 20 of FSAR Table 13.4-201, to be included in a future revision of the VEGP COL FSAR, is included below:

Item	Program Title	Program Source (required by)	FSAR Section	Implementation Milestone	Implementation Requirements
20.	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

Item	Program Title	Program Source (required by)	FSAR Section	Implementation Milestone	Implementation Requirements
	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*

In its December 2, 2009, letter to NEI, the NRC stated that during the review and approval process for NEI 06-06, the applicant should provide the following statements in its application:

- *NEI 06-06, Revision 5 was used in the development of the construction site FFD program.*
- *The applicant will review and revise its construction site FFD program as necessary to ensure that it comports with the NRC-endorsed version of NEI 06-06.*
- *If the NRC staff's review of NEI 06-06 results in substantive changes to the most recent, docketed FFD program description provided by the applicant, the applicant must amend its application to reflect the changes.*

The applicant's proposed revisions to FSAR Section 13.7 satisfactorily address the three items described above. The December 2, 2009, letter also provided implementation milestones for consideration by applicants. The staff confirmed that the proposed revisions to FSAR Table 13.4-201, Item 20, include all of the implementation milestones in the December 2, 2009, letter.

Therefore, based on the staff's acceptance of the proposed revisions to FSAR Section 13.7 and to FSAR Table 13.4-201, Item 20, as noted above, the NRC staff concludes that the applicant has satisfactorily addressed STD SUP 13.7-1 by providing sufficient information on the FFD program for both the construction phase and the operating phase of the units. The inclusion of this information in a future revision of the VEGP COL FSAR is ***Confirmatory Item 13.7-1****.*

Resolution of VEGP Site-Specific Confirmatory Item 13.7-1

Confirmatory Item 13.7-1 is an applicant commitment to revise its FSAR Section 13.7 and Table 13.4-201 regarding the FFD program for the construction phase and the operating phase of the units. The staff verified that the VEGP

COL FSAR was appropriately revised. As a result, Confirmatory Item 13.7-1 is now closed.

License Conditions

In RAI 13.6-35, the staff asked the applicant if proposed License Condition 3, A.1, and G.7, described in Part 10 of the COL application comports with FSAR Table 13.4-201, Item 15, which itemizes the aspects of the security operational program.

The staff further evaluated the need for License Condition 3, A.1 and G.7, for the VEGP COL application and determined it was not needed because the implementation milestones for FFD are governed by 10 CFR Part 26. The staff communicated this information to SNC, which then submitted Supplement 1 to its response to this RAI, removing this license condition for FFD.

- *Part 10, License Condition 6*

The applicant proposed a license condition in Part 10 of the VEGP COL application to provide a schedule to support the NRC's inspection of operational programs, including the FFD program.

The proposed license condition is consistent with the policy established in SECY 05-0197, "Review of Operational Programs in a Combined License Application and Generic Emergency Planning Inspections, Tests, Analyses, and Acceptance Criteria," for operational programs and is acceptable.

Evaluation of Turkey Point Units 6 and 7 RAIs

The staff issued RAI 6279, Question 13.07-1 to the applicant.

The staff evaluation of the applicant's response provided in letter dated February 21, 2012, related to the FFD program (ADAMS Accession No. ML12053A347) is as follows:

NRC RAI Number: **6279, Question 13.07-1**

Under 10 CFR 52.79(a)(44), the applicant's FSAR must contain a description of the fitness for duty (FFD) program and its implementation required by 10 CFR Part 26. Provide site-specific information to clearly and sufficiently describe your FFD program in terms of the scope and level of detail in order for the staff to evaluate and determine a reasonable assurance finding of acceptability. This information may include, but is not limited to any condition in which the applicant intends to deviate from or take exception to the requirements of 10 CFR Part 26 as further described in NEI 06-06, "Fitness for Duty Program Guidance for New Nuclear Power Plant Construction Sites" or as endorsed by the NRC. Regulatory Basis: 10 CFR 52.79(a)(44).

FPL RESPONSE:

COLA Part 2, Section 13.7 will be revised to provide site-specific fitness for duty information.

ASSOCIATED COLA REVISIONS:

COLA Part 2, Section 13.7, Fitness for Duty, will be revised in a future COLA revision by adding the following text (with an LMA [left margin annotation] of PTN SUP 13.7-1):

"The FFD program for the construction site, as defined in NEI 06-06, will be administered under an FPL-approved EPC contractor program. The 10 CFR Part 26, requirements are implemented for the construction site area based on the descriptions provided in Table 13.4-201.

- Construction Workers & First Line Supervisors (EPC contractor employees and subcontractors) are covered by the FPL-approved EPC contractor FFD Program (elements Subpart K).

- FPL employees and FPL subcontractor's construction management and oversight personnel are covered by the Turkey Point Units 3 & 4 Operations FFD Program and the EPC contractor's employees and subcontractor construction management and oversight personnel are covered by the FPL-approved EPC contractor FFD Program (elements Subpart A - H, N, and O**).**

- FPL security personnel are covered by the Turkey Point Units 3 & 4 Operations FFD Program and the EPC contractor's security personnel are covered by the FPL approved EPC contractor 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 SNM in the form of fuel assemblies, (2) the establishment of a protected area, or (3) the 10 CFR 52.103(g) finding.

- FPL FFD Program personnel are covered by the Turkey Point Units 3 & 4 Operations FFD Program and the EPC contractor's FFD Program personnel are covered by the FPL-approved EPC contractor FFD Program (elements Subpart A, B, D - H, N, O**,** and C per licensee's discretion).

- FPL 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 Turkey Point Units 3 & 4 Operations FFD Program (elements Subpart A - I, N, and O**).**

- Personnel required to physically report to the Technical Support Center (TSC) or Emergency Operations Facility (EOF) when that requirement is in effect are covered by the Turkey Point Units 3 & 4 FFD Program (elements Subpart A - I, N, and O**,** except for § 26.205 - 209)."

In response to RAI 6279, Question 13.07-1, FPL stated that FSAR Table 13.4-201 will be revised to provide site-specific fitness for duty information. The inclusion of the information provided in the RAI responses in a future revision of the FPL COL FSAR was identified as part

of **Confirmatory Item 13.7-1**, which is discussed in the standard content portion of this safety evaluation above.

Resolution of Turkey Point Site-Specific Confirmatory Item 13.7-1

Confirmatory Item 13.7-1 is an applicant commitment to revise its FSAR Section 13.7 and Table 13.4-201 regarding the FFD program for the construction phase and the operating phase of the units. The staff verified that the Turkey Point Units 6 and 7 COL FSAR, Revision 5 was appropriately revised. As a result, Confirmatory Item 13.7-1 is now closed.

13.7.5 Post Combined License Activities

For the reasons discussed in the technical evaluation section above, the staff finds substance of the requirements of License Condition (13-7) acceptable, and the substance of those requirements will be included in the license in a more general condition that covers the implementation of all programs:

- License Condition (13-7) - No later than 12 months after issuance of the COL, FPL shall submit to the Director of NRO, or the Director's designee, a schedule for implementation of the operational programs listed in FSAR Table 13.4-201, including the associated estimated date for initial loading of fuel. The schedule shall be updated every 6 months until 12 months before scheduled fuel loading, and every month thereafter until all the operational programs listed in FSAR Table 13.4-201 have been fully implemented.

13.7.6 Conclusion

The staff reviewed FSAR Section 13.7 along with the applicant's proposed revision of this section. The staff's review confirmed that the applicant's proposed revision to Section 13.7 has adequately addressed the required information relating to the FFD, and for the reasons set forth above, the staff finds it acceptable. The FFD portion of the FSAR, Section 13.7, is consistent with the requirements of 10 CFR Part 26 and 10 CFR 52.79(a)(44).

13.8 Cyber Security

Section 13.8 does not exist in either the AP-1000 DCD or the Turkey Point Units 6 and 7 COL FSAR. The NRC staff has added this section to the SER in order to address specific issues regarding the Turkey Point Units 6 and 7 cyber security. General description of the cyber security program, including combined license information item associated with cyber security, is part of the discussion in Section 13.6, "Physical Security," of the Turkey Point Units 6 and 7 FSAR and the AP1000 DCD.

13.8.1 Introduction

In Revision 3 of the Turkey Point Units 6 and 7 application dated December 16, 2011 (ADAMS Accession No. ML11361A102), Florida Power & Light Company provided Revision 1 of the Cyber Security Plan (CSP) for Turkey Point Units 6 and 7 in Part 9 of the application. The CSP applies to all critical digital assets (CDAs) used for Turkey Point Units 6 and 7 operation. In the submittal, the applicant describes how the requirements of 10 CFR 73.54 will be implemented to protect digital computer and communications systems and networks associated with the

following functions from those cyber attacks, up to and including the design-basis threat (DBT) described in 10 CFR 73.1. The scope of 10 CFR 73.54 includes CDAs associated with the following:

- safety-related and important-to-safety functions
- security functions
- emergency preparedness functions, including offsite communications
- support systems and equipment which, if compromised, would adversely impact safety, security, or emergency preparedness functions

13.8.2 Summary of Application

The applicant addresses cyber security in Section 13.6 of the Turkey Point Units 6 and 7 COL FSAR. Section 13.6 of the Turkey Point Units 6 and 7 COL FSAR, Revision 8, incorporates by reference Section 13.6 of the AP1000 DCD, Revision 19. The applicant's CSP includes deviations from RG 5.71, "Cyber Security Programs for Nuclear Facilities." As set forth below, the staff has evaluated these deviations.

In addition, in Turkey Point Units 6 and 7 COL FSAR Section 13.6, the applicant provides the following:

AP1000 COL Information Item

- STD COL 13.6-5

The applicant provided additional information in STD COL 13.6-5 to address COL Information Item 13.6-5, which provides information related to the cyber security program.

License Conditions

- Part 10, License Condition 3, Item G.10

The applicant proposed a license condition in Part 10 of the Turkey Point Units 6 and 7 COL application requiring the applicant to implement the cyber security program prior to initial fuel load.

- Part 10, License Condition 6

The applicant proposed a license condition in Part 10 of the Turkey Point Units 6 and 7 COL application to require implementation of operational programs included in Turkey Point Units 6 and 7 COL FSAR Table 13.4-201 including the cyber security program, in accordance with designated milestones, which would provide a schedule to support the NRC's inspection of these programs.

13.8.3 Regulatory Basis

The regulatory basis of the information incorporated by reference is addressed in NUREG-1793 and its supplements.

The applicable regulatory requirements for cyber security are as follows:

- 10 CFR 73.1, "Purpose and scope"
- 10 CFR 73.54, "Protection of digital computer and communication systems and networks"
- 10 CFR 73.55, "Requirements for physical protection of licensed activities in nuclear power reactors against radiological sabotage," paragraphs (a)(1), (b)(8), and (m)
- 10 CFR 73.58, "Safety/security interface requirements for nuclear power reactors"
- 10 CFR Part 73, "Physical protection of plants and materials," Appendix G, "Reportable Safeguards Events"

The applicable regulatory guidance for cyber security is RG 5.71.

13.8.4 Technical Evaluation

The staff reviewed Section 13.6 of the Turkey Point Units 6 and 7 COL FSAR and checked the referenced DCD to ensure that the combination of the DCD and the COLA represents the complete scope of information relating to this review topic.[1] The staff's review confirmed that the information in the application and incorporated by reference addresses the required information relating to cyber security. The results of the staff's evaluation of the information incorporated by reference in the Turkey Point Units 6 and 7 COLA are documented in NUREG-1793 and its supplements.

The staff's review of the Turkey Point Units 6 and 7 CSP has focused on ensuring that the necessary programmatic elements are included in this plan 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. The staff reviewed the Turkey Point Units 6 and 7 CSP to assure the necessary programmatic elements that, when effectively implemented, will provide the required high assurance of adequate protection of the common defense and security and public health and safety. Effective implementation is dependent on the procedures and practices the applicant develops to satisfy the programmatic elements of its CSP. The facility implementing procedures are subject to future NRC inspection.

Section 1.2.3 of this SER provides a discussion of the strategy used by the NRC to perform one technical review for each standard issue outside the scope of the DC and use this review in evaluating subsequent COLAs. To ensure that the staff's findings on standard content that were documented in the SER for the reference COLA (VEGP Units 3 and 4) were equally applicable to the Turkey Point Units 6 and 7 COLA, the staff undertook the following reviews:

- The staff compared the VEGP COL FSAR, Revision 5 to the Turkey Point Units 6 and 7 COL FSAR. In performing this comparison, the staff considered changes made to the Turkey Point Units 6 and 7 COL FSAR (and other parts of the COLA, as applicable) resulting from RAIs.
- The staff confirmed that the Turkey Point Units 6 and 7 CSP provided in Part 9, Revision 3 of the application on December 16, 2011, was identical to the June 14, 2010, VEGP submittal transmitting its CSP, with the only exceptions being to the title of the units and the identification of the position charged with oversight of the program.

- The staff verified that the site-specific differences were not relevant.

Accordingly, the staff has completed its review and finds the evaluation performed for the standard content to be directly applicable to the Turkey Point Units 6 and 7 COLA. This finding included verifying that the difference in the position charged with oversight of the program (the Vice President Fleet Support at Turkey Point and Vice President of Nuclear Operations Support at VEGP) does not affect the staff's conclusions regarding the applicant's CSP. This standard content material is identified in this SER by use of italicized, double-indented formatting. The one confirmatory item in the standard content material retains the number assigned in the VEGP SER.

The following portion of this technical evaluation section is reproduced from Section 13.8.4 of the VEGP SER:

AP1000 COL Information Item

- *STD COL 13.6-5*

The NRC staff reviewed STD COL 13.6-5 related to COL Information Item 13.6-5, which identifies the need for a COL applicant to address cyber security. STD COL 13.6-5 supplemented Section 13.6 of the VEGP COL FSAR by stating the following text is to be added after Section 13.6 of the VEGP ESP SSAR:

> *The Cyber Security Plan is submitted to the Nuclear Regulatory Commission as a separate licensing document to fulfill the requirements contained in 10 CFR 52.79(a)(36) and 10 CFR 73.54. The Cyber Security Plan will be maintained in accordance with the requirements of 10 CFR 52.98. The Plan is withheld from public disclosure pursuant to 10 CFR 2.390.*

Section 13.6 of the VEGP COL FSAR also refers to FSAR Table 13.4-201, "Operational Programs Required by NRC Regulations," as providing the milestone for implementing the cyber security program.

The VEGP applicant submitted Revision 0 of its CSP in a letter dated June 14, 2010, to demonstrate that the cyber security program will provide high assurance that digital computer and communication systems and networks are adequately protected against cyber attacks, up to and including the DBT as described in 10 CFR 73.1. The CSP has been withheld from public disclosure pursuant to 10 CFR 2.390(d) (1). In its review of this plan, the NRC staff used the guidance in RG 5.71 to determine if the regulatory requirements described in Section13.8.3 of this SER are satisfied.

The applicant described the cyber security program based on 10 CFR 73.54, including the audit of the effectiveness of the cyber security program as required by 10 CFR 73.55(m), submittal of CSPs and the establishment, maintenance and implementation of a cyber security program required by 10 CFR 73.55(a) (1) and 10 CFR 73.55(b)(8) and reporting requirements in 10 CFR Part 73, Appendix G. The implementation milestones for this program are included in VEGP COL FSAR Table 13.4-201.

As detailed in the remainder of this SER section, the CSP has been reviewed by the NRC staff for format and content utilizing the NRC CSP template in RG 5.71, and found to include all features considered essential for such a program, and is acceptable. In particular, it has been found to comply with the Commission's regulations including 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 and conforms to the NRC CSP template set forth in RG 5.71.

The applicant has committed to incorporate this CSP into a future revision of the VEGP COL application to address NRC requirements in 10 CFR 73.54. This action will be tracked as ***Confirmatory Item 13.8-1.***

Resolution of VEGP Site-specific Confirmatory Item 13.8-1

Confirmatory Item 13.8-1 is an applicant commitment to include the CSP into a future revision of the VEGP COL application. The staff verified that the VEGP COL application was appropriately revised. As a result, Confirmatory Item 13.8-1 is now closed.

13.8.4.1 Establishment of Cyber Security Program

The VEGP CSP describes how SNC will establish a cyber security program to achieve high assurance that the VEGP digital computer and communication systems and networks associated with safety, security, and emergency preparedness, including offsite communications and support systems and equipment which if compromised would adversely impact safety, security and/or emergency preparedness (SSEP) functions, and their digital assets, hereafter defined as CDAs, are adequately protected against cyber attacks up to and including the DBT. RG 5.71 provides a method that the staff considers acceptable for complying with this regulation. SNC complies with the requirements of 10 CFR 73.54 by providing a CSP that follows the template in Appendix A of RG 5.71, except as noted in Attachment A, "Vogtle Electric Generating Plant Units 3 and 4 Cyber Security Plan Deviations from Regulatory Guide RG 5.71." The VEGP CSP included:

> *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 a nuclear power plant and could result in an unplanned reactor shutdown or transient. Additionally, these SSCs are under the licensee's control and include electrical distribution equipment out to the first inter-tie with the offsite distribution system.*

The VEGP CSP included 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 NRC staff reviewed the VEGP 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.

The applicant states in the VEGP CSP that its security program complies with 10 CFR 73.54 by:

(1) establishing and implementing defensive strategies consistent with the defensive model, described in Section 3.1.5, including the security controls described in Sections 3.1, 3.2, and 3.3.

(2) Maintaining the program, as described in Section 4.

Based on the above review, the NRC staff finds that establishment of a cyber security program described in Section 1 of the VEGP CSP is acceptable.

The following SER Sections 13.8.4.2 through 13.8.4.23 correlate to specific sections in Appendix A to RG 5.71. These SER sections use the same headings as the corresponding Appendix A sections, and include the Appendix A numbering system in the titles. SER Section 13.8.4.24 addresses each of the deviations identified in the applicant's CSP.

13.8.4.2 Security Assessment and Authorization (Section A.3.1.1 of Appendix A to RG 5.71)

Section 3.1.1 of the VEGP CSP states that the following will be reviewed every 24 months:

- *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 applied in accordance with Section 3.1.6*

- *A formal documented procedure to facilitate the implementation of the cyber security program and the security assessment*

The NRC staff reviewed the above and found that evaluation of the program elements every 24 months is not consistent with Section C.3.1.1 of RG 5.71. The time period between evaluations is 12 months longer than the time period provided in brackets in RG 5.71. However, this 24-month time period conforms to 10 CFR 73.54(g), requiring the applicant to review the cyber security program as a component of the physical security program in accordance with the requirements of 10 CFR 73.55(m), including the periodicity requirements. The requirement of 10 CFR 73.55(m) is that at minimum the applicant review each element of the physical protection program at least every 24 months.

Based on the above review, the NRC staff finds that the security assessment and authorization described in Section 3.1.1 of the VEGP CSP is acceptable.

13.8.4.3 Cyber Security Team (Section A.3.1.2 of Appendix A to RG 5.71)

Section 3.1.2 of the VEGP CSP states that a cyber security team, composed of individuals with broad knowledge, will be established and maintained and that the broad knowledge of the team will include the following areas:

- *Information and digital system technology; this includes cyber security, software development, offsite communications, computer system administration, computer engineering, and computer networking.*

- *Nuclear facility operations, engineering, and safety; this includes overall facility operations and plant technical specification compliance.*

- *Physical security and emergency preparedness; this includes the site's physical security and emergency preparedness systems and programs.*

This section of the VEGP CSP also enumerates the roles and responsibilities of the cyber security team. Aside from the deviations discussed below, this section of the VEGP CSP conforms to the CSP template wording provided in Section A.3.1.2 of RG 5.71.

The VEGP CSP includes several deviations from the text of RG 5.71:

1) *The first deviation clarifies that the cyber security team (CST) will be responsible for "overseeing" preparation of documentation of cyber security controls and that, in fact, non-team members (such as vendor personnel) may perform some of these actions, under the supervision of the CST. This clarification is acceptable to the staff since the responsibility to ensure compliance with 10 CFR 73.54 remains with the CST.*

2) *The second deviation changes the CST responsibility from "assuring the retention" of assessment documentation to "establishing the retention policy" for assessment documentation. Again, the deviation is acceptable to the staff since the responsibility to ensure compliance with 10 CFR 73.54 remains with the CST.*

3) *The third and final deviation seeks to change the basis for CST determinations being made in a free and objective manner. The RG 5.71 wording states that the CST should be free to make determinations that are not constrained by "operational goals." The deviation changes the respective sentence to say "…by business goals." Again, the deviation is acceptable to the staff since it maintains the same objective of keeping financial considerations out of decision making regarding cyber security.*

Based on the above review, the NRC staff finds that the CST described in Section 3.1.2 of the VEGP CSP is acceptable.

13.8.4.4 Identification of Critical Digital Assets (Section A.3.1.3 of Appendix A to RG 5.71)

Section 3.1.3 of the VEGP CSP states that to identify the critical systems (CSs) at VEGP, the CST identified and documented plant 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 in accordance with the approved plant licensing basis.

The VEGP CSP also states that the CST identified and documented CDAs that have a direct, supporting, or indirect role in the proper functioning of CSs.

The steps outlined in the VEGP CSP essentially match the corresponding steps described in RG 5.71 for this same activity. The only difference between the corresponding section in RG 5.71 and the VEGP CSP is the addition of the modifying phrase: "…and defined in the approved plant licensing basis."

10 CFR 73.54(a)(1) requires that the licensee protect digital computer and communication systems and networks associated with: (i) safety-related and important-to-safety functions; (ii) security functions; (iii) emergency preparedness functions, including offsite communications; and (iv) support systems and equipment which, if compromised, would adversely impact SSEP functions.

This deviation is acceptable because SNC proposes to use its licensing basis to identify CSs that are associated with SSEP functions, as 10 CFR 73.54 requires. This statement includes the first step in RG 5.71 to analyze digital computer and communication systems and networks to determine if they include CDAs.

Based on the above review, the NRC staff finds the applicant's proposal, described in Section 3.1.3 of the VEGP CSP, to use 10 CFR 73.54(a) (1) and its licensing basis to identify CDAs to be acceptable.

13.8.4.5 Reviews and Validation Testing (Section A.3.1.4 of Appendix A to RG 5.71)

Section 3.1.4 of the VEGP CSP states that the VEGP CST will be responsible for conducting a review, performing validation activities, and for each CDA, the CST determined:

- *its direct and indirect connectivity pathways*
- *infrastructure interdependencies*
- *the application of defensive strategies, including defensive models, security controls, and other defensive measures*

The CSP also requires that the CST validate the above activities through comprehensive walkdowns, which include a range of activities that conform to those activities specified in RG 5.71 for this purpose.

The requirements, processes and procedures described in this section of the VEGP 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 NRC staff finds that reviews and validation testing described in Section 3.1.4 of the VEGP CSP is acceptable.

13.8.4.6 Defense-In-Depth Protective Strategies (Section A.3.1.5 of Appendix A to RG 5.71)

Section 3.1.5 of the VEGP CSP states that the defensive strategy consists of the defensive model described in Section C.3.2 of RG 5.71, and the detailed defensive architecture of Appendix C, Section 6, defense-in-depth controls in Appendix C, Section 7, and security controls applied in accordance with Section 3.1.6 of the VEGP CSP with one deviation to its defensive architecture. The VEGP defensive architecture, including the deviation is consistent with the security model described in RG 5.71, which provides for isolation of safety-related and security CDAs.

Based on the above review, the NRC staff finds that the defense-in-depth protective strategies described in Section 3.1.5 of the VEGP CSP are acceptable.

13.8.4.7 Application of Security Controls (Section A.3.1.6 of Appendix A to RG 5.71)

Section 3.1.6 of the VEGP CSP states that VEGP Units 3 and 4 established defense-in-depth protective strategies by applying and documenting the following:

- *the defensive model described in Section 3.2 of RG 5.71 (discussed in SER Section 13.8.4.6)*
- *the physical and administrative security controls established by the VEGP Units 3 and 4 Physical Security Program and physical barriers, such as locked doors, locked cabinets, and locating CDAs in the VEGP Units 3 and 4 protected area or vital areas, which are part of the overall security controls used to protect CDAs from attacks*
- *verification of the effectiveness of the implemented operational and management controls described in Appendix C to RG 5.71 and implemented alternatives to the Appendix C controls for each CDA*
- *the technical controls described in Appendix B to RG 5.71 and the operational and management controls described in Appendix C to RG 5.71, consistent with the process described below*

The VEGP CSP deviates from RG 5.71, Section C.3.3 Security Controls and Appendix A.3.1.6, by stating that when a control from Appendices B and C of RG 5.71 is not implemented, the licensee will implement alternate control(s) that "do not provide less protection than the corresponding" control in the appendix.

This deviation is consistent with the method used in RG 5.71, which states that controls should provide equal or better protection.

The VEGP CSP also deviates from RG 5.71 by stating that when a control can be proved to be unnecessary, the applicant will perform an analysis demonstrating that the control is not necessary, and will provide a documented justification. Although RG 5.71 specifically calls for an attack vector analysis, and the VEGP CSP does not specifically commit to performing an attack vector analysis, the VEGP CSP does commit to justifying the non-applicability of a control by demonstrating that the attack vector does not exist. This provides for the same outcome as RG 5.71.

Based on the above review, the NRC staff finds that the application of security controls described in Section 3.1.6 of the VEGP CSP is acceptable.

13.8.4.8 Incorporating the Cyber Security Program into the Physical Protection Program (Section A.3.2 of Appendix A to RG 5.71)

Section 3.2 of the VEGP CSP states that the licensee will provide the management interfaces necessary to appropriately coordinate physical and cyber security activities, as follows:

- *establish an organization that is responsible for cyber security and is independent from operations*
- *document physical and cyber security interdependencies*
- *develop policies and procedures to coordinate management of physical and cyber security controls*
- *incorporate unified policies and procedures to secure CDAs from attacks up to and including the DBT*
- *coordinate acquisition of physical or cyber security services, training, devices, and equipment*
- *coordinate interdependent physical and cyber security activities and training with physical and cyber security personnel*
- *integrate and coordinate incident response capabilities with physical and cyber incident response personnel*
- *train senior management regarding the needs of both disciplines*
- *periodically exercise the entire security organization using realistic scenarios combining both physical and cyber simulated attacks*

The VEGP CSP deviates from RG 5.71 by not creating a unified security organization. The commitment to provide for appropriate management interfaces to coordinate the physical and cyber security organizations provides for a level of integration equivalent to a unified organization.

Based on the above review, the NRC staff finds that the incorporation of the cyber security program into the physical protection program described in Section 3.2 of the VEGP CSP is acceptable.

13.8.4.9 Policies and Implementing Procedures (Section A.3.3 of Appendix A to RG 5.71)

Section 3.3 of the VEGP CSP states that the licensee will develop policies and procedures to address the security controls in Appendices B and C to RG 5.71 and review and approve issues and uses, and revise the same according to Section 4 of the CSP. The CSP will also establish specific responsibilities for the positions described in Section 10.10 of Appendix C to RG 5.71, with the following deviation.

The CSP states that this will occur "in accordance with the security control application process in Section 3.1.6 of this Plan." This process requires the applicant to justify and demonstrate that any deviation from the controls in RG 5.71 provide no less protection than the corresponding control in Appendices B and C; therefore, the VEGP CSP will require the same level of protection as the corresponding commitment in RG 5.71.

Based on the above review, the NRC staff finds that the policies and implementing procedures described in Section 3.3 of the VEGP CSP are acceptable.

13.8.4.10 Maintaining the Cyber Security Program (Section A.4 of Appendix A to RG 5.71)

Section 4 of the VEGP CSP states that the applicant will establish the programmatic elements necessary to maintain security throughout the life cycle of the CDAs, and that the applicant has implemented these elements. For new assets, SNC commits to follow the process described in Section 4.2.

Section 4 of the VEGP CSP is nearly identical to Section C.4 of RG 5.71, with the deviation of replacing the bracketed text [Licensee/Applicant] *with VEGP Units 3 and 4, and by including the caveat that the operational and management controls are applied following the process described in Section 3.1.6. The process described in Section 3.1.6 allows the licensee/applicant to not apply a control if it can demonstrate that the control is not necessary by justifying that the attack vector associated with the control does not exist. This approach is consistent with the method used in RG 5.71, and does not reduce the protection to the plant.*

Based on the above review, the NRC staff finds that the maintenance of the cyber security program described in Section 4 of the VEGP CSP is acceptable.

13.8.4.11 Continuous Monitoring and Assessment (Section A.4.1 of Appendix A to RG 5.71)

Section 4.1 of the VEGP CSP states that the licensee will continue to monitor security controls for effectiveness; will ensure that they remain in place

throughout the life cycle of the CDA; and will verify that rogue assets are not connected to the infrastructure.

The VEGP CSP includes a single deviation from Section A.4.1 of RG 5.71. The RG states that "[Licensee/Applicant] *continuously monitors security controls consistent with Appendix C to RG 5.71," whereas the VEGP CSP states that "VEGP Units 3 and 4 continues to monitor security controls consistent with Appendix C to RG 5.71."*

This deviation is consistent with the method in RG 5.71, which calls for periodic assessments, which is consistent with the statement "continues to monitor."

Based on the above review, the NRC staff finds that the ongoing monitoring and assessment described in Section 4.1 of the VEGP CSP is acceptable.

13.8.4.12 Periodic Assessment of Security Controls (Section A.4.1.1 of Appendix A to RG 5.71)

Section 4.1.1 of the VEGP CSP states that the licensee will periodically assess that security controls implemented for each CDA remain robust, resilient, and effective in place throughout the life cycle, at least every 24 months.

The NRC staff reviewed the above and found that this period of assessment is not consistent with RG 5.71. The time period between evaluations is 12 months longer than the time period provided in RG 5.71. However, this 24-month time period conforms to 10 CFR 73.54(g) requiring the licensee/applicant to review the cyber security program as a component of the physical security program in accordance with the requirements of 10 CFR 73.55(m), including the periodicity requirements. The requirements of 10 CFR 73.55(m) are that, at a minimum, the licensee/applicant review each element of the physical protection program, which includes the cyber security program, at least every 24 months.

Furthermore, the VEGP CSP states that controls will be reviewed according to the requirements of the security controls if that period of review occurs more often. This is also consistent with the method provided in RG 5.71.

Based on the above review, the NRC staff finds that the periodic assessment of security controls described in Section 4.1.1 of the VEGP CSP is acceptable.

13.8.4.13 Effectiveness Analysis (Section A.4.1.2 of Appendix A to RG 5.71)

Section 4.1.2 of the VEGP CSP states that the licensee will monitor and measure the effectiveness of the cyber security program and its security controls to ensure that both are implemented correctly, operating as intended, and continuing to provide high assurance that CDAs are protected against cyber attacks. The licensee commits to verifying the effectiveness of the security controls every 24 months, or in accordance with the specific requirements of the implemented security controls, whichever is more frequent.

The NRC staff reviewed the above and found that this period of verification is inconsistent with RG 5.71. The time period between evaluations is 12 months

longer than the time period provided in RG 5.71. However, this 24-month time period conforms to 10 CFR 73.54(g) requiring the applicant to review the cyber security program as a component of the physical security program in accordance with the requirements of 10 CFR 73.55(m), including the periodicity requirements. The requirements of 10 CFR 73.55(m) are that, at a minimum, the applicant review each element of the physical protection program, which includes the cyber security program, at least every 24 months.

Furthermore, the VEGP CSP states that verification will also occur according to the requirements of the security controls if that period of verification occurs more often. This is also consistent with the method provided in RG 5.71.

Based on the above review, the NRC staff finds that the effectiveness analysis described in Section 4.1.2 of the VEGP CSP is acceptable.

13.8.4.14 Vulnerability Assessments and Scans (Section A.4.1.3 of Appendix A to RG 5.71)

Section 4.1.3 of the VEGP CSP states vulnerability assessments will be performed as specified in the security controls in Appendices B and C of RG 5.71 to identify new vulnerabilities that have the potential to impact the effectiveness of the cyber security program and the security of the CDAs. The applicant also commits to address vulnerabilities that could cause CDAs to become compromised or could have an adverse impact on SSEP functions. Section 13.1 of Appendix C of RG 5.71 provides that vulnerability assessments should occur no less frequently than once a quarter, at random intervals, and when new potential vulnerabilities are reported and identified.

Section A.4.1.3 of RG 5.71 states that vulnerability assessments will occur no less frequently than quarterly, whereas the VEGP CSP states that this will occur, "as specified in the implemented security controls in Appendices B and C to RG 5.71 and implemented alternatives to the Appendices B and C controls." The process SNC has committed to in Section 3.1.6 of the VEGP CSP requires SNC, if it does not implement the controls in Appendices B and C, to demonstrate that an alternate control does not provide less protection than the corresponding control in Appendices B and C.

Therefore, if SNC does not implement the security control in Section 13.1, or deviates from the requirement for a quarterly vulnerability assessment, it will ensure that this deviation does not provide less protection than performing quarterly vulnerability assessments, and will provide an analysis that demonstrates that the attack vector does not exist and will document this justification for inspection.

Based on the above review, the NRC staff finds that the vulnerability assessments and scans described in Section 4.1.3 of the VEGP CSP are acceptable.

13.8.4.15 Change Control (Section A.4.2 of Appendix A to RG 5.71)

Section 4.2 of the VEGP CSP states that the licensee 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 CSP also commits that the program establish that changes made to CDAs use the design control and configuration management procedures or other procedural processes to ensure that the existing security controls are effective and that any pathway that can be exploited to compromise a CDA is protected from cyber attacks.

The VEGP CSP does not deviate from Section A.4.2 of RG 5.71.

Based on the above review, the NRC staff finds that the change control process described in Section 4.2 of the VEGP CSP is acceptable.

13.8.4.16 Configuration Management (Section A.4.2.1 of Appendix A to RG 5.71)

Section 4.2.1 of the VEGP CSP states that the licensee will implement and document a change management process as described in Section 4.2 of the VEGP CSP. Further, it commits to implement and document the applied configuration management controls described in Appendix C, Section 11 to RG 5.71 following the process described in Section 3.1.6 of the CSP.

The VEGP CSP does not specifically commit to apply the security controls in Section 11 of Appendix C of RG 5.71; however, it does commit to apply the process in Section 3.1.6 of the CSP. The commitment in Section 4.2.1 is consistent with Section A.4.2.2 of RG 5.71 as the applicant has committed, if it does not implement the security controls in Section 11 of RG 5.71, either to implement alternative controls that do not provide less protection than what is in Section 11, or to demonstrate that this control is unnecessary by demonstrating that the attack vectors associated with Section 11 to Appendix C of RG 5.71 do not exist for VEGP.

Based on the above review, the NRC staff finds that the configuration management process described in Section 4.2.1 of the VEGP CSP is acceptable.

13.8.4.17 Security Impact Analysis of Changes and Environment (Section A.4.2.2 of Appendix A to RG 5.71)

Section 4.2.2 of the VEGP CSP states that 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, to manage potential risks introduced by the changes. The CSP also commits to evaluate, document, and incorporate into the security impact analysis safety and security interdependencies of other CDAs or systems, as well as updates, and documents the following:

- *the location of the CDA and connected assets*

- *connectivity pathways (direct and indirect)*
- *infrastructure interdependencies*
- *application of defensive strategies, including defensive models, security controls, and others*
- *defensive strategy measures*
- *plant-wide physical and cyber security policies and procedures that secure CDAs from a cyber attack, including attack mitigation and incident response and recovery*

The VEGP CSP commits to perform these impact analyses as part of the change approval process to assess the impacts of the changes on the security posture of CDAs and security controls, as described in Section 4.1.2 of the VEGP CSP, and to address any identified gaps to protect CDAs from cyber attack, up to and including the DBT as described in Section 4.2.6.

Finally, Section 4.2.2 states that the licensee will manage CDAs for the cyber security of SSEP functions through an ongoing evaluation of threats and vulnerabilities and implementation of each of the applied security controls provided in Appendix B or C of RG 5.71 and implement alternatives to the Appendices B and C controls during all phases of the life cycle. Additionally, SNC has established and documented procedures for screening, evaluating, mitigating, and dispositioning threat and vulnerability notifications received from credible sources. Dispositioning includes implementation of security controls to mitigate newly reported or discovered threats and vulnerabilities.

The language in Section 4.2.2 of the VEGP CSP is identical to that in Section A.4.2.2 of RG 5.71 and includes no deviations.

Based on the above review, the NRC staff finds that the security impact analysis of changes and environment described in Section 4.2.2 of the VEGP CSP is acceptable.

13.8.4.18 Security Reassessment and Authorization (Section A.4.2.3 of Appendix A to RG 5.71)

Section 4.2.3 of the VEGP CSP states that the licensee will have implemented, documented, and maintained a process that ensures that modifications to CDAs are evaluated before implementation so that security controls remain effective and that any pathway that can be exploited to compromise the modified CDA is addressed to protect CDAs and SSEP functions from cyber attacks. This section further states that the VEGP cyber security program establishes that additions and modifications are evaluated, using a proven and accepted method, before implementation to provide high assurance of adequate protection against cyber attacks, up to and including DBTs, using the process described in Section 4.1.2 of the VEGP CSP.

The licensee also commits to disseminate, review, and update the following when a CDA modification is conducted:

- *a formal, documented security assessment and authorization policy, which addresses the purpose, scope, roles, responsibilities, management commitment, coordination among entities, and compliance to reflect all modifications or additions*

- *a formal, documented procedure to facilitate the implementation of the security reassessment and authorization policy and associated controls*

The VEGP CSP does not deviate from Section A.4.2.3 of RG 5.71.

Based on the above review, the NRC staff finds that the security reassessment and authorization described in Section 4.2.3 of the VEGP CSP is acceptable.

13.8.4.19 Updating Cyber Security Practices (Section A.4.2.4 of Appendix A to RG 5.71)

Section 4.2.4 of the VEGP CSP states that the licensee reviews, updates and modifies 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 the applied security controls provided in Appendices B and C to RG 5.71 and implemented alternatives to the Appendices B and C controls when changes occur to CDAs or the environment.

This information includes the following:

- *plant- and corporate-wide information on the policies, procedures, and current practices related to cyber security*

- *detailed network architectures and diagrams*

- *configuration information on security devices or CDAs*

- *new plant- or corporate-wide cyber security defensive strategies or security controls being developed and policies, procedures, practices, and technologies related to their deployment*

- *the site's physical and operational security program*

- *cyber security requirements for vendors and contractors*

- *identified potential pathways for attacks*

- *recent cyber security studies or audits (to gain insight into areas of potential vulnerabilities); and identified infrastructure support systems (e.g., electrical power; heating, ventilation, and air conditioning;*

communications; fire suppression) whose failure or manipulation could impact the proper functioning of CSs

The VEGP CSP does not deviate from Section A.4.2.4 of RG 5.71.

Based on the above review, the NRC staff finds that updating of cyber security practices described in Section 4.2.4 of the VEGP CSP is acceptable.

13.8.4.20 Review and Validation Testing of a Modification or Addition of a Critical Digital Asset (Section A.4.2.5 of Appendix A to RG 5.71)

The VEGP CSP Section 4.2.5 states the licensee 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 VEGP CSP.

The VEGP CSP does not deviate from Section A.4.2.5 of RG 5.71.

Based on the above review, the NRC staff finds that the Review and Validation Testing of Modifications or Additions of a Critical Digital Asset described in Section 4.2.5 of VEGP CSP is acceptable.

13.8.4.21 Application of Security Controls Associated with a Modification or Addition (Section A.4.2.6 of Appendix A to RG 5.71)

Section 4.2.6 of the VEGP CSP states that when new CDAs are introduced into the environment of VEGP, the licensee:

- *deploys the CDA into the appropriate level of the defensive model described in Section 3.1.5 of this plan;*
- *applies the technical controls identified in Appendix B to RG 5.71 and the operational and management controls described in Appendix C to RG 5.71 in a manner consistent with the process described in Section 3.1.6 of this plan*
- *confirms that the implemented operational and management controls described in Appendix C to RG 5.71, and implemented alternatives to the Appendix C controls, are effective for the CDA*

The plan also commits that when CDAs are modified, the licensee:

- *verifies that the CDA is deployed into the proper level of the defensive model described in Section 3.1.5 of this plan*
- *performs a security impact analysis, as described in Section 4.2.2 of this plan*
- *verifies that the technical controls identified in Appendix B to RG 5.71 and the operational and management controls described in Appendix C to RG 5.71 are addressed in a manner consistent with the process described in Section 3.1.6 of this plan*

- *verifies that the applied security controls discussed above are implemented effectively, consistent with the process described in Section 4.1.2 of this plan*

- *confirms that the implemented operational and management controls discussed in Appendix C to RG 5.71 and implemented alternatives to the Appendix C controls are effective for the CDA*

The VEGP CSP deviates from Section 4.2.6 of RG 5.71 by modifying the phrase "applies the technical controls identified in Appendix B to RG 5.71 in a manner consistent with the process described in Section 3.2 of RG 5.71," to read "applies the technical controls identified in Appendix B to RG 5.71 and the operational and management controls described in Appendix C to RG 5.71 in a manner consistent with the process described in Section 3.1.6 of this plan." This is consistent with RG 5.71 as the VEGP CSP commits to following the process in Section 3.1.6 of the VEGP CSP, which requires that controls are applied, an alternative that provides equivalent protection is provided, or the licensee demonstrates that the control is not necessary.

The VEGP CSP also deviates from Section A.4.2.6 of RG 5.71 with the modification of this phrase, "verifies that the security controls discussed above are implemented effectively, consistent with the process described in Section 4.1.2 of this plan" to read "verifies that the applied security controls discussed above are implemented effectively, consistent with the process described in Section 4.1.2 of this plan."

This deviation is consistent with the method used in RG 5.71. RG 5.71 assumes that all the controls in Appendices B and C will be applied; whereas, the VEGP CSP commits that if a control is not applied, there will be no reduction in protection as compared to the corresponding control. This method is also captured in RG 5.71 and, therefore, the VEGP CSP is consistent with RG 5.71.

Based on the above review, the NRC staff finds that the application of security controls associated with a modification or addition described in Section 4.2.6 of the VEGP CSP is acceptable.

13.8.4.22 Cyber Security Program Review (Section A.4.3 of Appendix A to RG 5.71)

Section 4.3 of the VEGP CSP states 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 VEGP 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 initial implementation of the program*

- *as necessary, based upon 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 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*

This deviates from RG 5.71 in the specific wording, but includes the same commitments. Specifically, RG 5.71 states that the licensee reviews the program's effectiveness at least every 24 months. In addition, reviews are conducted as follows:

- *within 12 months of the initial implementation of the program*

- *within 12 months of a change to personnel, procedures, equipment, or facilities that potentially could adversely affect security*

- *as necessary based upon site-specific analyses, assessments, or other performance indicators*

- *by individuals independent of those personnel responsible for program implementation and management*

Based on the above review, the NRC staff finds that the cyber security program review described in Section 4.3 of the VEGP CSP is acceptable.

13.8.4.23 Document Control and Records Retention and Handling (Section A.5 of Appendix A to RG 5.71)

Section 5 of the VEGP CSP states 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. VEGP will retain records and supporting technical documentation required to satisfy the requirements of 10 CFR 73.54 and 10 CFR 73.55, "Requirements for Physical Protection of Licensed Activities in Nuclear Power Reactors against Radiological Sabotage," until the NRC terminates the facility's operating license. Records are retained to document access history, as well as to discover the source of cyber attacks or other security-related incidents affecting CDAs or SSEP functions, or both. VEGP Units 3 and 4 will retain superseded portions of these records for at least three years after the record is superseded, unless otherwise specified by the NRC.

This deviates from RG 5.71 by not specifically detailing the types of records, but instead describes that records will be retained to document access history and information needed to discover the source of cyber attacks and incidents. This is consistent with what is included in RG 5.71, Section 5, and includes all the performance-based characteristics and commitments of that section.

Based on the above review, the NRC staff finds that the document control and records retention handling described in Section 5 of the VEGP CSP is acceptable.

13.8.4.24 Deviations Taken to RG 5.71, Sections C.1 Through C.5

The VEGP CSP states that the plan deviates from Regulatory Positions C.1 through C.5 of RG 5.71, as noted in Attachment A to the CSP. It also deviates from Section A.1 of Appendix A of RG 5.71. For that reason, the staff considers that the full evaluation of the CSP must include a review of the deviations taken to those sections of RG 5.71 as listed in the VEGP CSP. This section of the SER lists those 69 specific deviations and their evaluated security impact. The following deviations were provided in a table, as part of Attachment A to the CSP.

13.8.4.24.1 RG 5.71, Section C.2, fourth paragraph, first sentence (page 8)

SNC added the term "adequately" to the phrase "…systems and equipment are protected from cyber attack." Since 10 CFR 73.54 specifically makes that same statement, the staff found no reason to object to that clarification. The objective is to provide adequate protection to the identified CDAs.

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.2 RG 5.71, Section C.2, fourth paragraph, twelfth bullet, third sub-bullet (page 8)

SNC clarifies that its overall design is based on the Westinghouse AP1000 design and states that the AP1000 DCD commits to Revision 1 of RG 1.152, "Criteria for Digital Computers in Safety Systems of Nuclear Power Plants." Since the applicant is required to have a cyber security program that meets the performance objectives outlined in 10 CFR 73.54 and is not obliged to achieve that requirement exclusively through the example provided by RG 5.71, this clarification, in and of itself, was not considered by the staff as deviating from the requirements established by the rule.

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.3 RG 5.71, Section C.2, fifteenth bullet (page 8)

The deviation states that the required policies and procedures have not yet been written, reviewed, and approved, and, thus, are not currently available for inspection and review.

The NRC requires that these policies and procedures be completed and available for review by the completion of the CSP implementation schedule proposed by the applicant, since CSP inspections would not occur until that time. The requirements of 10 CFR 73.55(a)(4) and proposed License Condition 6 provide the necessary controls associated with developing the required policies and procedures of the CSP.

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.4 RG 5.71, Section C.3, Figure 1 (Page 10)

The deviation changes the arrows on the left side of Figure 1 from "Continuous Monitoring" to "Ongoing Monitoring."

The NRC intended monitoring to occur periodically, and when required, based on certain inputs into the process. SNC states that "continuous" might imply that monitoring was perpetual and not event driven. This was not the staff's intent with the term "continuous." The staff accepts the use of the term "ongoing" to better reflect the intent of this diagram.

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.5 RG 5.71, Section C.3, third paragraph, first sentence (Page 10)

The VEGP CSP changes the statement, "An acceptable method to establish a cyber security program at a facility is by performing the following, (1) analyze the digital computer and communication systems and networks, …" to "An acceptable method to establish a cyber security program at a facility is by performing the following: (1) identify critical systems and critical digital assets as described in Section C.3.1.3, (2) analyze the digital computer and communication systems and networks..."

This deviation is acceptable because SNC proposes to use its licensing basis to identify CSs that are associated with SSEP functions, as 10 CFR 73.54 requires. This statement includes the first step in RG 5.71 to analyze digital computer and communication systems and networks to determine if they include CDAs.

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.6 RG 5.71, Section C.3.1, first paragraph, first sentence (page 11)

The VEGP CSP changes the statement, "Consistent with the requirements of 10 CFR 73.54(b)(1), a licensee must conduct a site-specific analysis of digital computer and communication systems and networks to identify CDAs, which are those assets that, if compromised, could adversely impact the SSEP functions of nuclear facilities." to "Consistent with the requirements of 10 CFR 73.54(b)(1), a licensee must conduct a site-specific analysis of digital computer and communication systems and networks to identify CDAs, which are those assets that, if compromised, could adversely impact the CSs of nuclear facilities."

SNC defines a CS as:

> *An analog or digital technology-based system in or outside of the plant that performs or is associated with a safety-related, important-to-safety, security, or emergency preparedness*

> *function. These critical systems include, but are not limited to, plant systems, equipment, communication systems, networks, offsite communications, or support systems or equipment, that perform or are associated with a safety-related, important-to-safety, security, or emergency preparedness function as defined by the approved plant licensing basis.*

This definition ties CSs to SSEP functions; therefore, the change is consistent with the method used in RG 5.71, as this means that CSs are all those assets associated with SSEP functions, and, therefore, could adversely impact those SSEP functions.

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.7 RG 5.71, Section C.3.1, first paragraph, second bullet (page 11)

The VEGP CSP includes a deviation to correct an editorial omission in RG 5.71. Page 11 of RG 5.71 states that:

An acceptable method for identifying and documenting CDAs is as follows:

- *obtain authorization for security assessment*
- *define roles and responsibilities cyber personnel and form the cyber security team*
- *identify and document CDAs at the facility*
- *review and validate configurations of CDAs*

The VEGP CSP corrects the second bullet to read:

- *define roles and responsibilities of cyber personnel and form the cyber security team*

This deviation which supplies the omitted "of" is consistent with the intent of the referenced bullet.

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.8 RG 5.71, Section C.3.1.2, third paragraph, second bullet (page 13)

The VEGP CSP changes the second bullet on Page 13 of RG 5.71 from:

> *documenting all key observations, analyses, and findings during the assessment process so that this information can be used as a basis for applying security controls;*

to:

> *documenting all key observations, analyses, and findings during the assessment process so that this information can be used as a basis for addressing security controls;*

This deviation is acceptable because RG 5.71 allows a licensee to address, as opposed to apply, security controls if it follows the process in Appendix A, Section 3.1.6 of RG 5.71, which is to apply the control, apply an alternative that provides no less protection than the corresponding security control, or to demonstrate that the control is not necessary because the attack vector, root cause, or vulnerability associated with the control does not exist.

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.9 RG 5.71, Section C.3.1.2, third paragraph, sixth bullet (page 13)

The VEGP CSP changes the sixth bullet on Page 13 from:

- *preparing documentation and overseeing implementation of the cyber security controls provided in Appendices B and C to this guide, documenting the basis for not implementing certain cyber security controls provided in Appendix B, or documenting the basis for the implementation of alternate or compensating measures in lieu of any cyber security controls provided in Appendix B; and*

to:

- *overseeing documentation and implementation of the cyber security controls provided in Appendices B and C to this guide, documenting the basis for not implementing certain cyber security controls provided in Appendix B and C, or documenting the basis for the implementation of alternate or compensating measures in lieu of any cyber security controls provided in Appendix B and C; and*

This deviation is acceptable because overseeing the documentation and implementation of security controls by qualified personnel is an approved method. Further, the extension of this method in Appendix C is also acceptable as the licensee has committed to follow the process in Appendix A, Section 3.1.6 of RG 5.71.

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.10 RG 5.71, Section C.3.1.2, third paragraph, seventh bullet (page 13)

The VEGP CSP includes a deviation from RG 5.71 that changes bullet 7 from:

assuring the retention of all assessment documentation, including notes and supporting information, in accordance with 10 CFR 73.54(h) and the record retention and handling requirements specified in Section C.5 of this guide.

to:

establishing the retention policy of all assessment documentation, including notes and supporting information, in accordance with 10 CFR 73.54(h) and the record retention and handling requirements specified in Section C.5 of this guide.

This deviation is acceptable as the licensee has committed to establish the retention policy. Although this may be done by a different team, and not the CST, it is consistent with the intent of RG 5.71.

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.11 RG 5.71, Section C.3.1.2, fourth paragraph, first sentence (page 13)

The VEGP CSP deviates from RG 5.71 by changing this sentence:

The licensee's CST needs to have the authority to conduct an objective assessment, make determinations that are not constrained by operational goals (e.g., cost),

to:

The licensee's CST needs to have the authority to conduct an objective assessment, make determinations that are not constrained by business goals (e.g., cost),

This deviation is acceptable because the intent of this statement in RG 5.71 is to ensure that cost is not used as a factor in making determinations about the adequacy of security controls, vulnerabilities, identifying CSs and CDAs, and carrying out other assessment functions of the CST.

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.12 RG 5.71, Section C.3.1.3, second paragraph (page 14)

The VEGP CSP deviates from RG 5.71 by changing the identification process from CDAs to CSs. This deviation is acceptable because the VEGP CSP commits to continue identifying CSs by identifying digital computers, networks, communication systems and support systems that perform and are associated with SSEP functions, as well as support systems and equipment that, if compromised, would adversely impact the plant's SSEP functions.

This is consistent with the process in RG 5.71, which identifies CDAs through the same process. The licensee further describes CDAs as a CS or part of a CS; therefore, the use of the term CS as opposed to CDA is also consistent with the method used in RG 5.71.

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.13 RG 5.71, Section C.3.1.3, fifth paragraph, first sentence (page 15)

The VEGP CSP deviates from RG 5.71 by making an editorial correction to RG 5.71. This involves changing:

> *With the identification of the all the CSs ...*

to:

> *With the identification of all the CSs ...*

This change is acceptable because it accomplishes the intent of this phrase in RG 5.71 eliminating the unnecessary "the."

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.14 RG 5.71, Section C.3.1.3, fifth paragraph, second sentence (page 15)

The VEGP CSP deviates from RG 5.71 by changing the following statement from:

> *A CDA may be a component of a CS ...*

to:

> *A CDA may be a complete CS or component of a CS, ...*

This deviation is acceptable because this statement is true. A CDA may be a complete CS and the deviation does not change the level of protection provided by the method outlined in RG 5.71.

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.15 RG 5.71, Section C.3.1.3, fifth paragraph, fifth sentence (page 15)

The VEGP CSP deviates from RG 5.71 by including additional documentation to help identify CSs and CDAs. Specifically VEGP includes "other licensing basis" documents to identify CSs and CDAs.

This deviation is in line with the intent of using existing documentation to identify CSs and CDAs. This section of RG 5.71 describes "helpful information sources for identifying CSs and CDAs" and is not an exhaustive list, nor is it the only method SNC has committed to use to identify CSs and CDAs. Specifically, SNC has committed to identify all digital computers, networks and communication systems associated with SSEP functions, which is what 10 CFR 73.54 requires.

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.16 RG 5.71, Section C.3.1.3, eighth paragraph, first bullet (page 16)

The VEGP CSP deviates from RG 5.71 by stating that CDAs may be an entire CS. As previously discussed in Section 13.8.4.24.14 of this SER, it is true that a CDA may be an entire CS; therefore, this definition does not adversely impact either the method used in RG 5.71 or the protection that RG 5.71 provides.

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.17 RG 5.71, Section C.3.1.3, eighth paragraph, second bullet (page 16)

The VEGP CSP deviates from RG 5.71 by stating that CDAs may be an entire CS. As previously discussed in Sections 13.8.4.24.14 and 13.8.4.24.16 of this SER, it is true that a CDA may be an entire CS; therefore, this definition does not adversely impact either the method used in RG 5.71 or the protection that RG 5.71 provides.

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.18 RG 5.71, Section C.3.2, first paragraph, first sentence (page 18)

The VEGP CSP deviates from RG 5.71 by providing an editorial correction to RG 5.71. Specifically, the VEGP CSP changes the following sentence from:

> *As stated in 10 CFR 73.54(c)(2), the licensee must design its cyber security program to apply and maintain integrate defense-in-depth protective strategies to ensure the capability to detect, prevent, respond to, mitigate, and recover from cyber attacks.*

to:

> *As stated in 10 CFR 73.54(c)(2), the licensee must design its cyber security program to apply and maintain integrated defense-in-depth protective strategies to ensure the capability to*

detect, prevent, respond to, mitigate, and recover from cyber attacks.

This deviation captures the intent of this sentence in RG 5.71 by correcting "integrate" to "integrated."

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.19 RG 5.71, Section C.3.2, second paragraph, fourth sentence (page 18)

The VEGP CSP deviates from RG 5.71 by pointing to an editorial error in RG 5.71. Specifically, the VEGP CSP changes the following sentence from:

Therefore, defense-in-depth is achieved not only by implementing multiple security boundaries, but also by instituting and maintaining a robust program of security controls that assess, protect, respond, prevent, detect, and mitigates an attack on a CDA and with recovery.

to:

Therefore, defense-in-depth is achieved not only by implementing multiple security boundaries, but also by instituting and maintaining a robust program of security controls that assess, protect, respond, prevent, detect, and mitigate an attack on a CDA and with recovery.

This deviation captures the intent of this sentence in RG 5.71 by correcting "mitigates" to "mitigate." Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.20 RG 5.71, Section C.3.2, third paragraph, first sentence (page 18)

The VEGP CSP deviates from RG 5.71 by pointing to an editorial error in RG 5.71. Specifically, the VEGP CSP changes the following sentence from:

For example, if a failure in prevention were to occur (e.g., a violation of policy) or if protection mechanisms were to be bypassed (e.g., by a new virus that is not yet identified as a cyber attack), mechanisms would still in place to detect and respond to an unauthorized alteration in an impacted CDA, mitigate the impacts of this alteration, and recover normal operations of the impacted CDA before an adverse impact.

to:

For example, if a failure in prevention were to occur (e.g., a violation of policy) or if protection mechanisms were to be

bypassed (e.g., by a new virus that is not yet identified as a cyber attack), mechanisms would still be in place to detect and respond to an unauthorized alteration in an impacted CDA, mitigate the impacts of this alteration, and recover normal operations of the impacted CDA before an adverse impact.

This is acceptable because the change to add the word "be" to the phrase "would still be in place to detect" captures the intent of this sentence by supplying the "be" omitted from RG 5.71.

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.21 RG 5.71, Section C.3.2.1, Figure 5 (Page 19)

The VEGP CSP includes a defensive architecture, which deviates from the example provided in RG 5.71. The proposed architecture is acceptable because it provides defense-in-depth, communication isolation for safety and security systems, and multiple nondeterministic boundaries for nonsafety/nonsecurity CDAs. This provides adequate protection for CDAs and ensures that appropriate isolation and boundary protection exists for all CDAs where appropriate.

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.22 RG 5.71, Section C.3.2.1, third paragraph (page 19)

The VEGP CSP deviates from RG 5.71 by modifying the characteristics of an acceptable defensive architecture by stating that the architecture includes CSs and CDAs configured in accordance with Section 5 of Appendix B, and Sections 6 and 7 of Appendix C in accordance with the security control application process described in Section 3.3. As previously discussed in Section 13.8.4.24.9 of this SER, the use of the security control application process to address controls is consistent with RG 5.71.

SNC has committed to apply the security control, demonstrate that alternative controls provide no less protection than the corresponding control, or demonstrate through analysis that the attack vector the control addresses does not exist; therefore, the control is not necessary.

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.23 RG 5.71, Section C.3.2.1, third paragraph, first bullet (page 19)

The VEGP CSP deviates from RG 5.71 by modifying the example defensive architecture to match the architecture to be used in the AP1000. This deviation is acceptable because it provides the appropriate isolation of safety and security CDAs, and adequate boundaries for nonsafety/nonsecurity CDAs.

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.24 RG 5.71, Section C.3.2.1, third paragraph, second bullet (page 19)

The VEGP CSP deviates from RG 5.71 by modifying the example defensive architecture to match the architecture to be used in the AP1000. As previously discussed in Section 13.8.4.6, this deviation is acceptable because it provides the appropriate isolation of safety and security CDAs, and adequate boundaries for nonsafety/nonsecurity CDAs. This is consistent with the defensive model in RG 5.71, as the VEGP defensive architecture provides boundaries for safety systems that are deterministic.

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.25 RG 5.71, Section C.3.2.1, third paragraph, third bullet (page 19)

The VEGP CSP deviates from RG 5.71 regarding communications from digital assets at lower security levels to digital assets at higher security levels. This deviation is acceptable because the defensive architecture prevents specific communication from lower security levels to specific higher security levels. This is consistent with the defensive model in RG 5.71.

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.26 RG 5.71, Section C.3.2.1, third paragraph, new second bullet (page 19)

The VEGP CSP deviates from RG 5.71 regarding remote access. This is consistent with the guidance in Section C.7 of RG 5.71, which also states that remote access to CDAs at the highest level be prevented.

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.27 RG 5.71, Section C.3.2.1, third paragraph, new sixth bullet (page 19)

The VEGP CSP deviates from RG 5.71 by including in its defensive architecture a statement from Section C.7 of RG 5.71 for validating data (software updates, new firmware, etc.) using a method at or above the level of security the CDA that will have data transferred to it. This concept is already acceptable in RG 5.71 and is also included in the defensive architecture, although in a different section of the document. This is consistent with the method used in RG 5.71 and does not adversely impact the protection provided.

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.28 RG 5.71, Section C.3.2.1, third paragraph, seventh bullet (page 19)

The VEGP CSP deviates from RG 5.71 by changing the commitment to eliminate applications, services and protocols not necessary to support the design-basis function of the CDAs to eliminate, disable, or render these inoperable. This is consistent with the method in RG 5.71, because in some cases these elements cannot be eliminated, but rather may have to be disabled or otherwise rendered inoperable. In each case, the result is the same. The asset is only configured to perform its design-based function and nothing more, which produces no less protection than the method in RG 5.71.

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.29 RG 5.71, Section C.3.2.1, third paragraph, eighth bullet (page 19)

The VEGP CSP deviates from RG 5.71 by eliminating the requirement to configure CDAs and boundary protection systems in accordance with Section 5 of Appendix B and Sections 6 and 7 of Appendix C. However, the VEGP CSP does commit to this in the preamble statement as described in Section 13.8.4.24.22 of this SER. Therefore, the VEGP CSP provides the same commitment to perform this as does RG 5.71, albeit in a different part of the same section.

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.30 RG 5.71, Section C.3.2.1, fourth paragraph (page 19)

The VEGP CSP deviates from RG 5.71 by deleting the paragraph that commits to applying the security controls. However, the VEGP security plan commits, in Section 3.1.6, to address these controls and is, therefore, consistent with the method used in RG 5.71. The deleted paragraph is, therefore, unnecessary in the VEGP CSP to achieve the same commitment.

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.31 RG 5.71, Section C.3.2.1, Prior to fifth paragraph (page 19)

The VEGP CSP deviates from the RG 5.71 defensive architecture. The VEGP architecture is described in Section 13.8.4.6 of this SER.

Based on the review and assessment in Section 13.8.4.6, the NRC staff finds that this deviation is acceptable.

13.8.4.24.32 RG 5.71, Section C.3.3, first paragraph, second sentence (page 20)

The VEGP CSP deviates from RG 5.71 by changing the following sentence:

> *A cyber compromise of CDAs would adversely impact nuclear facilities' SSEP functions that are necessary for protecting public health and safety.*

to:

> *A cyber compromise of CDAs could adversely impact nuclear facilities' SSEP functions that are necessary for protecting public health and safety.*

This deviation is consistent with the intent of RG 5.71, which implies that a compromise could lead to adverse impact and possible radiological sabotage. The intent of the paragraph is to establish the impact that could occur if a CDA were compromised. The security controls are designed around worst case scenarios, and the change in the VEGP CSP from "would" to "could" maintains this logic.

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.33 RG 5.71, Section C.3.3, third paragraph, fourth sentence (page 20)

The VEGP CSP deviates from RG 5.71 by making an editorial correction to RG 5.71. This involves changing the statement:

> *Thus to provide high assurance that CDAs are protected from cyber attacks, potential cyber risks of these CDAs must be addressed known potential cyber risks.*

to:

> *Thus to provide high assurance that CDAs are protected from cyber attacks, potential cyber risks of these CDAs must be addressed for known potential cyber risks.*

This is acceptable because the change captures the intent of this sentence by supplying the "for" omitted from RG 5.71.

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.34 RG 5.71, Section C.3.3, third paragraph, first sentence (page 20)

The VEGP CSP deviates from RG 5.71 by adding Appendix C to the list of controls that may be addressed using the method in Section 3.1.6 of Appendix A. This is consistent with the intent of RG 5.71, which assumes that all the controls in Appendix C can be implemented as written. However, if the controls can be addressed to demonstrate that an alternative control provides no less protection than the comparable control in Appendix C, or that the control is not necessary by demonstrating that the attack vector does not exist, this would meet the intent of RG 5.71.

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.35 RG 5.71, Section C.3.3, third paragraph, first bullet (page 20)

The VEGP CSP deviates from RG 5.71 by adding Appendix C to the list of controls that may be addressed using the method in Section 3.1.6 of Appendix A. This is consistent with the intent of RG 5.71, which assumes that all the controls in Appendix C can be implemented as written. However, if the controls can be addressed to demonstrate that an alternative control provides no less protection than the comparable control in Appendix C, or that the control is not necessary by demonstrating that the attack vector does not exist, this would meet the intent of RG 5.71.

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.36 RG 5.71, Section C.3.3, third paragraph, second bullet (page 20)

The VEGP CSP deviates from RG 5.71 by stating that alternative controls will not provide equal or better protection to the corresponding control, but rather that they will not provide less protection than the corresponding control. This is consistent with the method used in RG 5.71; providing an alternative that does not provide less protection, and does not adversely impact the security program. Therefore, this change in commitment will provide an adequate level of protection and is consistent with the method used in RG 5.71.

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.37 RG 5.71, Section C.3.3, third paragraph, second bullet, second sub-bullet (page 20)

The VEGP CSP deviates from RG 5.71 by changing the statement:

> *performing and documenting the attack vector and attack tree analyses of the CDA and alternative countermeasures to confirm*

that the countermeasures provide the same or greater protection as the corresponding security control in Appendix B.

to:

performing and documenting an attack vector and attack tree analysis of the CDA and alternative countermeasures to confirm countermeasures provide no decrease in the effectiveness of protection as compared to the corresponding security control identified in Appendix B or C.

This deviation is acceptable because whether the licensee performs a single analysis or multiple analyses, the method is comparable provided that it will demonstrate that there is no decrease in protection. Further, the modification of the second part of the sentence is also acceptable because the intent of this method in RG 5.71 is to ensure that alternative controls do not provide less protection than the corresponding control. Therefore, a commitment to ensure that alternatives do not provide less protection produces a comparable level of protection as stating that the alternatives provide equal or better protection. Finally, the addition of the Appendix C controls to this method is acceptable because the licensee has committed to apply the control, apply an alternative that provides no less protection than the comparable control or not to apply the control and demonstrate that the attack vector does not exist.

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.38 RG 5.71, Section C.3.3, third paragraph, second bullet, third sub-bullet (page 20)

The VEGP CSP deviates from RG 5.71 in a similar manner to deviations in Section 13.8.4.24.37 of this SER by changing the commitment to implement alternative countermeasures that provide at least the same degree of protection as the corresponding security control in Appendix B, to implementing alternative controls to provide no decrease in the effectiveness of protection as compared to the corresponding security control identified in Appendices B and C of RG 5.71.

This method is consistent with the method in RG 5.71 as it also meets the criteria for the performance based characteristics of 10 CFR 73.54. As long as the implemented alternative control does not provide less protection than the corresponding control in RG 5.71, the intent of this section of RG 5.71 has been met. Alternative controls are considered to be adequate only if they provide equivalent protection, and the VEGP CSP commits to that minimum standard.

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.39 RG 5.71, Section C.3.3, third paragraph, third bullet (page 20)

The VEGP CSP deviates from RG 5.71 by not stating that SNC will specifically perform an attack vector and attack tree analysis to demonstrate that one of the

specific security controls is not necessary. SNC does commit to performing an analysis to demonstrate that the attack vector does not exist (i.e., is not applicable), thereby obviating the need for a specific security control.

This method is consistent with the method in RG 5.71 as it commits to demonstrating a conclusion, specifically, that the attack vector does not exist. If the licensee can demonstrate this, and not use an attack vector or attack tree analysis, the results are still the same and, therefore, the method would produce a result that does not provide less protection than the method in RG 5.71.

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.40 RG 5.71, Section C.3.3, fourth paragraph, second sentence (page 20)

The VEGP CSP deviates from RG 5.71 by making an editorial correction to RG 5.71. This involves changing the statement:

> *When a security control is determined to have an adverse affect, alternate controls should be used by the licensee to protect the CDA from cyber attack up to and including the DBT consistent with the process described above.*

to:

> *When a security control is determined to have an adverse effect, alternate controls should be used by the licensee to protect the CDA from cyber attack up to and including the DBT consistent with the process described above.*

This is acceptable because the change captures the intent of this sentence in RG 5.71, by correcting "affect" to "effect."

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.41 RG 5.71, Section C.3.3, fifth paragraph, second sentence (page 21)

The VEGP CSP deviates from RG 5.71 by making an editorial correction to RG 5.71. This involves changing the statement:

> *If these effectiveness or vulnerability analyses identify a gap in the cyber security program, the licensee may need to implement additional security measures and controls not provided in Appendixes B and C.*

to:

If these effectiveness or vulnerability analyses identify a gap in the cyber security program, the licensee may need to implement additional security measures and controls not provided in Appendices B and C.

This change is acceptable because it captures the intent of this sentence in RG 5.71, by correcting "Appendixes" to "Appendices."

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.42 RG 5.71, Sections C.3.3.1.1 through C.3.3.1.5, first paragraph and last bullet (pages 21 and 22)

The VEGP CSP deviates from RG 5.71 by stating that it will not apply all of the security controls in RG 5.71, but rather will address them. The VEGP CSP already commits to the RG 5.71 process, which is:

1) *applying controls;*

2) *applying an alternative control that does not provide less protection than the corresponding control; or*

3) *not applying a control, but demonstrating that the corresponding attack vector does not exist.*

The intent of RG 5.71 is to address the controls in Appendices B and C. This can be accomplished in accordance with Section 3.1.6 of Appendix A, to which SNC has committed.

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.43 RG 5.71, Section C.3.3.1.1, first paragraph, second bullet, fourth sub-bullet (page 21)

The VEGP CSP deviates from RG 5.71 by committing to audit CDAs at an interval defined for the CDA, or within 5 days following revocation of an individual's unescorted access, due to a lack of trustworthiness or reliability, or as soon as reasonably practical upon changes in personnel. Although this method uses a different frequency than the method in RG 5.71, which calls for annual assessments, or assessments immediately upon changes in personnel, this frequency does meet the requirements of 10 CFR 73.55(m), which allows the licensee to define these intervals based on its own assessments of need.

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.44 RG 5.71, Sections C.3.3.2.1 through C.3.3.2.5, first paragraph and last bullet (pages 23 and 24)

The VEGP CSP deviates from RG 5.71 in a fashion similar to the deviation cited in Section 13.8.4.24.42 of this SER by committing not to apply the controls, but rather to address them. As previously stated, this deviation is consistent with the method in RG 5.71, and also meets the intent of the RG, provided that the licensee follows the process in Section 3.1.6 of Appendix A, to which SNC has committed.

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.45 RG 5.71, Sections C.3.3.2.6 through C.3.3.2.9, first paragraph and last bullet (pages 24-26)

The VEGP CSP deviates from RG 5.71 in a fashion similar to the deviation cited in Sections 13.8.4.24.42 and 13.8.4.24.44 of this SER by committing to apply the controls, but rather to address them. As previously stated, this deviation is consistent with the method in RG 5.71, and also meets the intent of the RG, provided that the licensee follows the process in Section 3.1.6 of Appendix A, to which SNC has committed.

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.46 RG 5.71, Section C.3.3.2.9, first paragraph, first bullet (page 25)

The VEGP CSP deviates from RG 5.71 by making an editorial correction to RG 5.71. This involves changing the first bullet:

- *develop, disseminate, and annually review and update the configuration management policy and program which defines the purpose of the nuclear facility's configuration management policy, scope, roles, requirements, responsibilities, and management commitments necessary to provide, with high assurance, that (1) when a modification to a CDA does not reduce the existing security and (2) any unauthorized or inadvertent modification of a CDA is prevented.*

to:

- *develop, disseminate, and annually review and update the configuration management policy and program which defines the purpose of the nuclear facility's configuration management policy, scope, roles, requirements, responsibilities, and management commitments necessary to provide, with high assurance, that (1) a modification to a CDA does not reduce the existing security and (2) any unauthorized or inadvertent modification of a CDA is prevented.*

This is acceptable because it captures the intent of this sentence in RG 5.71, by striking the word "when" after "(1)." This editorial mistake will be corrected in a future revision.

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.47 RG 5.71, Section C.3.3.3.1, first paragraph and last bullet (page 26)

The VEGP CSP deviates from RG 5.71 in a fashion similar to the deviations cited in Sections 13.8.4.24.42, 13.8.4.24.44 and 13.8.4.24.45 of this SER, and by committing not to apply the controls, but rather to address them. As previously stated, this deviation is consistent with the method in RG 5.71, and also meets the intent of RG 5.71, provided that the licensee follows the process in Section 3.1.6 of Appendix A, to which SNC has committed.

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.48 RG 5.71, Section C.3.3.3.1, second paragraph (page 26)

The VEGP CSP deviates from RG 5.71 by committing to Revision 1 of RG 1.152 and not Revision 2 of RG 1.152 as stated in RG 5.71. The results of the NRC staff's technical evaluation of the digital instrumentation and controls design of the AP1000 are documented in Chapter 7 of NUREG-1793 and its supplements. SNC's use of the defensive architecture as discussed in Section 13.8.4.6 is acceptable to the staff.

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.49 RG 5.71, Section C.3.3.3.2, first paragraph, second sentence (page 26)

The VEGP CSP deviates from RG 5.71 by committing to provide adequate protection of high assurance against cyber attacks. Although this commitment is worded differently than the commitment provided in RG 5.71, it does meet the requirement of 10 CFR 73.54(a), which states that licensees "shall provide high assurance that digital computer and communication systems and networks are adequately protected against cyber attacks, up to and including the design basis threat as described in 10 CFR 73.1."

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.50 RG 5.71, Section C.3.4, second paragraph, first sentence (page 26)

The VEGP CSP deviates from RG 5.71 as described in Section 13.8.4.8 of this SER by committing not to integrate management of physical and cyber security,

but rather to provide the management interfaces necessary to appropriately coordinate the physical and cyber security activities. The VEGP CSP includes a commitment to establish an organization that is responsible for cyber security and is independent of operations. The combination of an independent organization responsible for cyber security, and management coordination between physical and cyber security meets the requirements of the rule and does not provide less protection than the method described in RG 5.71.

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.51 RG 5.71, Section C.3.4, second paragraph, first bullet (page 27)

The VEGP CSP deviates from RG 5.71 as also described in Section 13.8.4.8 of this SER by committing not to form a unified security organization, but rather to establish a cyber security organization that is responsible for cyber security and is independent from operations. The combination of an independent organization responsible for cyber security, and management coordination as described in Section 13.8.4.24.50 of this SER between physical and cyber security meets the requirements of the rule, and does not provide less protection than the method described in RG 5.71.

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.52 RG 5.71, Section C.4, first paragraph, first sentence (page 27)

The VEGP CSP deviates from RG 5.71 by changing the phrase:

> *Once the security program is in place...*

to:

> *Once the cyber security program is in place...*

This deviation is acceptable because the CSP only applies to the applicant's cyber security program.

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.53 RG 5.71, Section C.4, first paragraph, first bullet (page 28)

The VEGP CSP deviates from RG 5.71 as previously described in Section 13.8.4.11 of this SER by changing the phrase "continuous monitoring and assessment" to "ongoing monitoring and assessment." This description is consistent with the method in RG 5.71 by establishing intervals for these assessments, which include the same elements as in RG 5.71, and meeting the periodicity requirements of 10 CFR 73.55(m).

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.54 RG 5.71, Section C.4.1, section heading and first paragraph, first sentence (page 28)

The VEGP CSP deviates from RG 5.71 as previously described in Sections 13.8.4.11 and 13.8.4.24.53 of this SER by changing the phrase "continuous monitoring and assessment" to "ongoing monitoring and assessment." This description is consistent with the method in RG 5.71 by establishing intervals for these assessments, which include the same elements in RG 5.71 and meeting the periodicity requirements of 10 CFR 73.55(m).

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.55 RG 5.71, Section C.4.1, second paragraph, first sentence (page 28)

The VEGP CSP deviates from RG 5.71 as previously described in Sections 13.8.4.11, 13.8.4.24.53 and 13.8.4.24.54 of this SER by changing the phrase "continuous monitoring and assessment" to "ongoing monitoring and assessment." This description is consistent with the method in RG 5.71 by establishing intervals for these assessments, which include the same elements as in RG 5.71 and meeting the periodicity requirements of 10 CFR 73.55(m).

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.56 RG 5.71, Section C.4.1, second paragraph, first bullet (page 28)

The VEGP CSP deviates from RG 5.71 by making an editorial correction to RG 5.71. This involves changing the phrase:

> *ongoing assessments of verify that the security controls...*

to:

> *ongoing assessments to verify that the security controls...*

This change is acceptable because it captures the intent of this sentence in RG 5.71, by substituting "to" for "of."

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.57 RG 5.71, Section C.4.1, third paragraph, first and second sentences (page 28)

The VEGP CSP deviates from RG 5.71 as previously described in Sections 13.8.4.11, 13.8.4.24.53, 13.8.4.24.54 and 13.8.4.24.55 of this SER by

changing the phrase "continuous monitoring and assessment" to "ongoing monitoring and assessment." This description is consistent with the method in RG 5.71 by establishing intervals for these assessments, which include the same elements as in RG 5.71, and meeting the periodicity requirements of 10 CFR 73.55(m).

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.58 RG 5.71, Section C.4.1.1, first paragraph, second sentence (page 28)

Section 3.1.1 of the VEGP CSP states that status of security controls will be verified in accordance with the requirements of 10 CFR 73.55(m).

The NRC staff reviewed the above and found that reviewing security controls in accordance with 10 CFR 73.55(m) is in accordance with RG 5.71. The time period between evaluations may be longer than the time period provided in RG 5.71. However, this period cannot exceed 24 months, which conforms to 10 CFR 73.54(g), requiring the applicant to review the cyber security program as a component of the physical security program in accordance with the requirements of 10 CFR 73.55(m), including the periodicity requirements. The requirements of 10 CFR 73.55(m) are that, at minimum, the applicant review each element of the physical protection program at least every 24 months.

The licensee has also committed to address C.13 of Appendix C to RG 5.71, "Security Assessment and Risk Management," which calls for vulnerability assessments on a quarterly basis. SNC commits to apply this control, apply an alternative that provides no less protection than C.13, or demonstrate that any attack vectors associated with vulnerabilities that may be discovered through quarterly assessments do not exist. The VEGP CSP also includes addressing controls that specifically include defined verification periods and that detect when some controls are not working correctly.

This, coupled with the CSP conforming to requirements of 10 CFR 73.55(m), which includes an initial assessment within 12 months of the program inception, and as necessary based on site-specific analyses, assessments, or other performance indicators, provides a level of protection consistent with the method in RG 5.71.

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.59 RG 5.71, Section C.4.1.2, first paragraph, third sentence (page 29)

Section 3.1.1 of the VEGP CSP states that effectiveness of security controls will be verified in accordance with the requirements of 10 CFR 73.55(m). As previously discussed in Section 13.8.4.12 of this SER, the NRC staff reviewed

the above and found that the period of effectiveness analysis is comparable with that of RG 5.71.

The time period between evaluations is 12 months longer than the time period provided in RG 5.71. However, this 24-month time period conforms to 10 CFR 73.54(g) requiring the applicant to review the cyber security program as a component of the physical security program in accordance with the requirements of 10 CFR 73.55(m), including the periodicity requirements. The requirements of 10 CFR 73.55(m) are that, at minimum, the applicant review each element of the physical protection program, which includes the cyber security program, at least every 24 months and within 12 months of the implementation of the program, or within 12 months when changes that may adversely impact the security program occur.

Furthermore, the VEGP CSP states that controls will be reviewed according to the requirements of the security controls if that period of review occurs more often. This is also consistent with the method provided in RG 5.71.

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.60 RG 5.71, Section C.4.1.3, first paragraph, second sentence (page 29)

VEGP CSP Section 4.1.3 deviates from RG 5.71 by stating that vulnerability assessments will occur periodically. RG 5.71, Section C.4.1.3 states that vulnerability assessments will occur no less frequently than on a quarterly basis.

As previously described in Section 13.8.4.14 of this SER, the VEGP CSP states vulnerability assessments will be performed as specified in the security controls in Appendices B and C of RG 5.71, and when new vulnerabilities that could affect the effectiveness of the cyber security program and the security of the CDAs are identified. The licensee also commits to addressing vulnerabilities that could cause CDAs to become compromised or could have an adverse impact on SSEP functions. Section 13.1 of Appendix C of RG 5.71, which VEGP commits to address in accordance with the process in Section 3.1.6 of Appendix A, provides that vulnerability assessments should occur no less frequently than once a quarter, at random intervals, and when new potential vulnerabilities are reported and identified. SNC has not deviated from the interval.

The process the applicant has committed to in Section 3.1.6 of the VEGP CSP requires SNC, if it does not implement Section 13.1 of Appendix C, to implement an alternate control that does not provide less protection than the corresponding control in Appendices B and C, or to demonstrate that any attack vectors associated with vulnerabilities that may be discovered through quarterly assessments do not exist.

Therefore, if SNC does not implement the security control in Appendix C, Section 13.1 of RG 5.71, or deviates from the guidance for a quarterly vulnerability assessment, it will ensure that this deviation does not provide less protection than performing quarterly vulnerability assessments, and will provide

an analysis that demonstrates that the attack vector does not exist and will document this justification for inspection.

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.61 RG 5.71, Section C.4.2, first paragraph, second sentence (page 30)

The VEGP CSP deviates from RG 5.71 by committing not to implement the security controls in Section 11 of Appendix C of RG 5.71, but rather to address those controls in accordance with Section C.3.3 of RG 5.71.

As previously described in Section 13.8.4.7 of this SER, the VEGP CSP deviates from RG 5.71 by committing to address security controls rather than committing to apply them. The VEGP CSP states that when a control from Appendices B and C of RG 5.71, such as Section 11 of Appendix C, is not implemented that the licensee will implement alternate control(s) that "do not provide less protection that the corresponding" control in the appendix. This deviation is consistent with the method used in RG 5.71, which states that controls should provide equal or better protection.

As also previously discussed in Section 13.8.4.7 of this SER, the VEGP CSP deviates from RG 5.71 by stating that when a control can be proven to be unnecessary, the applicant will perform an analysis demonstrating that the control is not necessary, and will provide a documented justification. Therefore, SNC commits that in addressing the security controls in Appendix C, Section 11 of RG 5.71 that it will either apply the control, apply an alternative that does not provide less protection or will demonstrate that the control is not necessary because the attack vectors do not exist. This method is consistent with the method used in RG 5.71, which also allows for controls to be addressed.

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.62 RG 5.71, Section C.4.2.1, first paragraph, third sentence (page 30)

The VEGP CSP deviates from RG 5.71 in a manner similar to the previous deviation in Section 13.8.4.24.61 of this SER. Specifically, that configuration management will be used to ensure that each of the controls is addressed in Appendices B and C of RG 5.71, as opposed to implemented. This method is consistent with the method in RG 5.71, as the applicant commits to follow the process in Section C.3.3 of RG 5.71, which requires that the applicant implement the control, apply an alternative control that does not provide less protection than the corresponding control in RG 5.71, or demonstrate that the attack vector associated with the control does not exist. Therefore, the VEGP CSP method will provide no less protection than the method provided for in RG 5.71.

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.63 RG 5.71, Section C.4.2.1, second paragraph, third sentence (page 30)

The VEGP CSP deviates from RG 5.71 by including the statement, "in accordance with the process described in Section C.3.3 of this guide." As previously discussed in Section 13.8.4.14 of this SER, the method in Section C.3.3 is consistent with the method in RG 5.71, which requires that the licensee either implement the control, apply an alternative control that does not provide less protection than the corresponding control in RG 5.71, or demonstrate that the attack vector associated with the control does not exist. Therefore, the VEGP CSP method will provide no less protection than the method provided for in RG 5.71.

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.64 RG 5.71, Section C.4.3, second paragraph (page 31)

The VEGP CSP deviates from RG 5.71, as previously discussed in Section 13.8.4.22 of this SER, by stating 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 VEGP 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 initial implementation of the program*
- *as necessary based upon 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 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*

This deviates from RG 5.71 in the specific wording, but includes the same commitments as RG 5.71. Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.65 RG 5.71, Section C.5, second paragraph, second and third sentences (page 32)

As previously discussed in Section 13.8.4.23, the VEGP CSP deviates from RG 5.71 documentation retention commitments. Specifically, VEGP CSP

Section 5 states the records are retained to document access history and information needed to discover the source of cyber attacks and incidents. The VEGP CSP deletes the phrase:

> *Records required for retention include, but are not limited to, digital records, log files, audit files, and nondigital records that capture, record, and analyze network and CDA events.*

The VEGP CSP commits to retaining all access history records, records to discover the source of cyber attacks or other security-related incidents affecting CDAs or SSEP functions, or both. This is consistent with what is included in RG 5.71 Section 5, as it includes all the performance-based characteristics and commitments of that section.

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.66 RG 5.71, Glossary (Page 35)

The VEGP CSP's definition of a CDA deviates from the definition provided in RG 5.71. Specifically, the VEGP CSP deviates by stating that a CDA can be a CS or a subcomponent of a CS. This definition does not materially change the use of the term, and is correct: A CDA can be a CS. This definition is consistent with the definition in RG 5.71. The VEGP CSP, by the use of this definition, does not provide for less protection than RG 5.71, nor does this reduce the scope of the assets required to be protected under the rule.

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.67 RG 5.71, Glossary (Page 35)

The VEGP CSP deviates from the definition of a CS in RG 5.71 by adding the phrase "as defined by the approved plant licensing basis." RG 5.71 states that a CS is an analog or digital technology based system in or outside the plant that performs or is associated with a safety-related, important-to-safety, security, or emergency preparedness function. These CSs include, but are not limited to, plant systems, equipment, communication systems, networks, offsite communications, or support systems or equipment, that perform or are associated with safety-related, important-to-safety, security, or emergency preparedness functions.

The addition of the phrase "as defined by the approved plant licensing basis" limits the scope of the functions to those that are defined by the licensing basis. As previously discussed in Section 13.8.4.4 of this SER, the staff was concerned that this modifier might cause the licensee to exclude CSs, which ought to be included, according to the rule. 10 CFR 73.54(a)(1) requires that the licensee protect digital computer and communication systems and networks associated with: (i) safety-related and important-to-safety functions; (ii) security functions; (iii) emergency preparedness functions, including offsite communications; and (iv) support systems and equipment, which if compromised would adversely

impact SSEP functions. However, further reviews resulted in the staff finding that the VEGP CSP scoping discussion adequately described a process to include all CDAs within the scope of 10 CFR 73.54(a)(1).

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.68 RG 5.71, Glossary (Page 35)

The VEGP CSP deviates from the RG 5.71 definition of cyber attack by replacing the phrase "conducted by threat agents having either malicious or non-malicious intent" with the phrase "conducted by threat agents." The NRC staff finds this deviation to be acceptable because deletion of the intent of a threat agent, be it malicious or non-malicious, still provides a commitment to protect against threats by threat agents.

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

13.8.4.24.69 RG 5.71, Appendix A, Introduction (Page A-1)

The VEGP CSP deviates from the RG 5.71 scope discussion by including within scope systems or equipment that perform important to safety functions including SSCs in the BOP that could directly or indirectly affect reactivity at a nuclear power plant and could result in an unplanned reactor shutdown or transient. Additionally, these SSCs are under the licensee's control and include electrical distribution equipment out to the first inter-tie with the offsite distribution system. The NRC staff finds this deviation to be acceptable because it is consistent with Commission policy.

Based on the above review and assessment, the NRC staff finds that this deviation is acceptable.

<u>License Conditions</u>

- *Part 10, License Condition 2, COL Item 13.6-5 and License Condition 3, Item G.10*

The applicant proposed two license conditions in Part 10 of the VEGP COL application, which will require the applicant to implement the cyber security program prior to initial fuel load.

In a letter dated October 22, 2010, the applicant provided supplemental information which proposed to amend the milestone included in Part 2, FSAR Table 13.4-201 to implement the cyber security program prior to receipt of fuel onsite (protected area.) The NRC staff finds the proposed implementation milestone for the cyber security program (security prior to receipt of fuel onsite (protected area)) appropriate and in accordance with the requirement in 10 CFR 73.55(a) (4). Therefore the staff finds that the proposed License Conditions 2 and 3 are not necessary.

- *Part 10, License Condition 6*

The applicant proposed a license condition in Part 10 of the VEGP COL application to provide a schedule to support the NRC's inspection of operational programs, including the cyber security program. Although the CSP is not identified as an operational program in SECY-05-0197, the proposed license condition is consistent with the policy established in SECY-05-0197 for operational programs in general, and is acceptable.

13.8.5 Post Combined License Activities

For the reasons discussed in the technical evaluation section above, the staff finds substance of the requirements of License Condition (13-7) acceptable, and the substance of those requirements will be included in the license in a more general condition that covers the implementation of all programs:

- License Condition (13-7) - No later than 12 months after issuance of the COL, FPL shall submit to the Director of NRO, or the Director's designee, a schedule for implementation of the operational programs listed in FSAR Table 13.4-201, including the associated estimated date for initial loading of fuel. The schedule shall be updated every 6 months until 12 months before scheduled fuel loading, and every month thereafter until all the operational programs listed in FSAR Table 13.4-201 have been fully implemented.

13.8.6 Conclusion

The staff reviewed the application and checked the referenced DCD. The staff's review confirmed that the applicant has addressed the relevant information relating to this section, and no outstanding information related to this section remains to be addressed in the Turkey Point Units 6 and 7 COL FSAR. The results of the staff's technical evaluation of the information incorporated by reference in the Turkey Point Units 6 and 7 COLA are documented in NUREG-1793 and its supplements.

The staff has reviewed the CSP for format and content using the NRC CSP template in RG 5.71, and, for the reasons set forth above, finds that it includes all features considered essential to such a program. In particular the staff finds that it complies with 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.