

13.0 CONDUCT OF OPERATIONS

Chapter 13, "Conduct of Operations," of Revision 1 of the Final Safety Analysis Report (FSAR) for the Comanche Peak Nuclear Power Plant (CPNPP), Units 3 and 4 combined license (COL) provides introductory information relating to the preparations and plans for the design, construction, and operation of CPNPP, Units 3 and 4. CPNPP, Units 3 and 4, will be the first plants to incorporate Mitsubishi Heavy Industries, Ltd's (MHI's) United States - Advanced Pressurized Water Reactor (US-APWR) certified design; and hence, if issued will be the reference combined license (RCOL). The purpose of Chapter 13 is to provide adequate assurance that the COL applicant, (Luminant Generation Company, LLC. (Luminant) and Comanche Peak Nuclear Power Company), establishes and maintains a plant staff of adequate size and technical competence and that operating plans followed by the licensee are adequate to protect the public health and safety.

Section 13.0 of the CPNPP, Units 3 and 4, COL FSAR, Revision 1, incorporates by reference, with no departures or supplements, Section 13.0, "Conduct of Operations," of the US-APWR Design Control Document (DCD). At the time that Revision 1 of the FSAR was issued, Revision 2 of the US-APWR DCD was in effect. The staff of the United States Nuclear Regulatory Commission (NRC), hereinafter referred to as the staff, reviewed the RCOL application and checked the referenced DCD to ensure that no issue relating to this section remained for review.¹ The NRC staff's review confirmed that there is no outstanding issue related to this section.

The staff is reviewing the information in DCD Section 13.0 under Docket Number 52-021. The results of the staff's technical evaluation of the information related to the conduct of operations incorporated by reference in the CPNPP, Units 3 and 4 COL FSAR will be documented in the staff's safety evaluation (SE) on the design certification (DC) application for the US-APWR design. The SE on the US-APWR is not yet complete, and this is being tracked as part of Open Item [1-1]. The staff will update Section 13.0 of this SE to reflect the final disposition of the DC application design.

13.1 Organizational Structure of Applicant

13.1.1 Introduction

The applicant's organizational structure provides for fulfilling the design, construction, and preoperational responsibilities of the applicant's organization. This section of the FSAR provides a description of the applicant's corporate organization functions and responsibilities, with regard to activities including facility design, design review, design approval, construction management, testing, and operation of CPNPP, Units 3 and 4.

13.1.2 Summary of Application

Section 13.1, "Organizational Structure of the Applicant," and Section 13.1.1, "Management and Technical Support Organization," of the CPNPP, Units 3 and 4 COL FSAR, Revision 1, incorporate by reference Sections 13.1 and 13.1.1 of the US-APWR DCD, Revision 2, without any departures.

¹ See Chapter 1, 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.

The applicant added new sections and information to the CPNPP, Units 3 and 4 FSAR related to the site-specific organizational structure in Section 13.1 beyond the structure described in NRC Regulatory Guide (RG) 1.206, "Combined License Applications for Nuclear Power Plants (LWR [*Light-Water Reactor*] Edition)." The new sections are:

13.1.1 Management and Technical Support Organization

13.1.2 Operating Organization

13.1.3 Qualifications of Nuclear Plant Personnel

Table 13.1-201 for the staffing plan for CCNPP, Units 3 and 4

Table 13.1-202 for minimum shift crew composition

Appendix 13AA, "Design, Construction, and Pre-Operational-Activities"

Section 13.1.1, "Management and Technical Support Organization," of the FSAR describes the management and technical support organization and includes a description of the corporate or home office organization, its functions and responsibilities, and the number and 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

Section 13.1.2, "Operating Organization," of the FSAR describes the structure, functions, and responsibilities of the onsite organization established to operate and maintain the plant.

The applicant provided additional information to address the following:

CP COL Information Items

- CP COL 13.1(1)

The COL Applicant is to provide a description of the corporate or home office organization, its functions and responsibilities, and the number and qualifications of personnel. The COL Applicant directs attention to

activities that include facility design, design review, design approval, construction management, testing, and operation of the plant.

- CP COL 13.1(2)

The COL Applicant is to develop a description of past experience in the design, construction, and operation of nuclear power plants and past experience in activities of similar scope and complexity.

- CP COL 13.1(3)

The COL Applicant is to describe its management, engineering, and technical support organizations. The description includes organizational charts for the current headquarters and engineering structure and any planned modifications and additions to those organizations that reflect the added functional responsibilities with the nuclear power plant.

- CP COL 13.1(4)

The COL Applicant is to develop a description of the organizational arrangement. This description shows how the added functional responsibilities associated with the addition of the nuclear power plant to the Applicant's power generation capacity are delegated and assigned (or expected to be assigned to) each of the working or performance-level organizational units to implement these responsibilities. The description includes organizational charts reflecting the current corporate structure and the specific working- or performance-level organizational units that provide technical support for the operation.

- CP COL 13.1(5)

The COL Applicant is to develop the description of the general qualification requirements in terms of educational background and experience for positions or classes of positions depicted in the organizational arrangement.

- CP COL 13.1(6)

The COL Applicant is to develop the organizational structure for the plant organization, its personnel responsibilities and authorities, and operating shift crews.

- CP COL 13.1(7)

The COL Applicant is to develop the description of education, training, and experience requirements established for management, operating, technical, and maintenance positions for the operating organization.

13.1.3 Regulatory Basis

The regulatory basis of the information incorporated by reference is addressed within the NRC's Final Safety Evaluation Report (FSER) related to the US-APWR DCD.

In addition, the relevant requirements of the Commission's regulations for the organizational structure of the applicant, and the associated acceptance criteria, are given in Section 13.1.1, "Management and Technical Support Organization;" and Section 13.1.2, "Operating Organization," of NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants - LWR [light-Water Reactor] Edition" (the SRP).

The applicable regulatory requirements for the applicant's organizational structure, including those pertinent to the COL-information items described above are as follow:

1. Section 50.40(b), "Common Standards," of Part 50, "Domestic Licensing of Production and Utilization Facilities," of Title 10, "Energy," of the *Code of Federal Regulations* (10 CFR Part 50), as it relates to demonstrating (in conjunction with other reviews) that the applicant is technically qualified to engage in nuclear activities licensed under these regulations.
2. 10 CFR 50.54, "Conditions of Licenses;" specifically, 10 CFR 50.54(j), (k), (l), and (m), as they relate to operator requirements during the operation of the facility, the responsibility for directing activities of licensed operators, and the senior operator availability during reactor operations and other specific reactor conditions or modes of operation.

Specific acceptance criteria acceptable to meet the relevant requirements of the NRC's regulation identified above can be found in Part II of Section 13.1.1 of NUREG-0800 and include:

1. RG 1.8, "Qualification and Training of Personnel for Nuclear Power Plants," which endorses and amends American National Standards Institute/American Nuclear Society (ANSI/ANS)-3.1-1993
2. RG 1.33, "Quality Assurance Program Requirements (Operation)," Revision 2, issued February 1978

13.1.4 Technical Evaluation

The NRC staff reviewed Section 13.1 of the CPNPP, Units 3 and 4 COL FSAR, Revision 1, and checked the referenced DCD to ensure that the combination of the DCD and the information in the COL represent the complete scope of information relating to this review topic¹. The staff's review confirmed that the information contained in the application and incorporated by reference addresses the required information relating to the management and technical support organization. Section 13.1 of the US-APWR DCD is being reviewed by the staff under Docket Number 52-021. The staff's technical evaluation of the information incorporated by reference related to the management and technical support organization will be documented in the staff's SE on the DC application for the US-APWR design.

The NRC staff reviewed the applicant's disposition of the following CP COL information items included under Section 13.1 of the CPNPP COL FSAR. In its review, the staff used the applicable sections of the SRP and RG 1.206 as guidance.

CP COL Information Items

CP COL 13.1(1) describes the Luminant corporate organization, its functions and responsibilities, and the number and qualifications of personnel. The applicant directs attention to activities that include facility design, design review, design approval, construction management, testing, and operation of the plant.

CP COL 13.1(3) is a description of Luminant's management, engineering, and technical support organizations. The description includes organizational charts for the current headquarters and engineering structure and any planned modifications and additions to those organizations that reflect the added functional responsibilities associated with the design, construction, and operation of a nuclear power plant.

CP COL 13.1(4) is a description of the organization that describes how the added functional responsibilities associated with the addition of the nuclear power plant to the applicant's power generation capacity are delegated and assigned. The description includes organization charts reflecting the current corporate structure and the organization of units that provide technical support for the operation of the facility.

CP COL 13.1(6) requires the applicant to develop the organizational structure for the plant organization, its personnel responsibilities and authorities, and operating shift crews.

The applicant provided information that describes the management, engineering, technical support, and operating organizations at CCNPP, Units 3 and 4 in Figure 13.1-201, "Luminant Corporate Structure Diagram;" Figure 13.1-202, "Nuclear Generation Organization;" Figure 13.1-203, "CPNPP Units 3 and 4 Site Organization," Figure 13.1-204, "CPNPP Units 3 and 4 Support Organization," and Table 13.1-202, "Minimum Shift Crew Composition." The applicant also described plans for managing the construction of CPNPP, Units 3 and 4 and for managing the nuclear steam supply system vendor and the architect engineer. The applicant also described the assignment of plant operating responsibilities, the reporting chain up through the chief nuclear officer, the functions and responsibilities of each major plant staff group, and the proposed shift crew complement for a single-unit or multiple-unit operation.

The staff has reviewed CP COL 13.1 (1), CP COL 13.1 (3), CP COL 13.1 (4), and CP COL 13.1 (6) and concludes that the management, engineering, technical support, and operating organizations, as described, are acceptable and meets the guidance found in NUREG-0800, Section 13.1.1, "Management and Technical Support Organization," and Section 13.1.2 - 13.1.3, "Operating Organization."

This conclusion is based on the applicant having described its organization for the management of, and its means of providing, technical support to the plant staff for the design, construction, and operation of the facility.

These plans and descriptions provide reasonable assurance that the applicant will establish an acceptable organization; that sufficient resources are available to provide offsite technical support; that sufficient resources are available to maintain and operate the facility, and that the

applicant is able to satisfy commitments for the design, construction, and operation of the facility. Therefore, the staff finds that the applicant's management, engineering, technical support and operating organizations, as described, are acceptable and meet the guidance found in NUREG-0800, Section 13.1.1, "Management and Technical Support Organization," and Section 13.1.2, "Operating Organization."

CP COL 13.1(2) relates to Luminant's past experience in the design, construction, and operation of nuclear power plants and their past experience in activities of similar scope and complexity.

In its review of CP COL 13.1(2), the staff found that the applicant described its experience in the design, construction, and operation of nuclear generating plants and responsibilities associated with two currently operating nuclear power plants (CPNPP, Units 1 and 2). The staff finds that this experience provides reasonable assurance that the applicant will be capable of managing the design, construction, and operation of nuclear generating plants and therefore the applicant's experience in the design, construction, and operation of nuclear generating plants, as described, is acceptable and meets the guidance found in NUREG-0800, Section 13.1.1, "Management and Technical Support Organization."

CP COL 13.1(5) requires the COL Applicant to develop a description of the general qualification requirements in terms of educational background and experience for positions depicted in the organizational arrangement.

CP COL 13.1(7) requires the COL Applicant to develop the description of education, training, and experience requirements established for management, operating, technical, and maintenance positions for the operating organization.

The applicant added Table 13.1-201, "Staffing Plan for CPNPP Units 3 and 4," and Table 13.1-202, "Minimum Shift Crew Composition," to describe the operating organization at CCNPP, Units 3 and 4 and the associated functions and responsibilities. Table 13.1-201 provides the estimated number of personnel required for each position and provides a cross-reference to identify site-specific position titles. Table 13.1-202 describes the minimum composition of the operating shift crews for all modes of operation. The applicant also states that minimum shift staffing for the various modes of operation are implemented using plant administrative procedures, work-hour limitations and shift staffing requirements defined by NUREG-0737, "Clarification of TMI Action Plan Requirements, November 1980" Three Mile Island (TMI) Action Plan Item I.A.1.3. Also as defined in station procedures, when overtime is necessary, the provisions in the technical specifications and the plant administrative procedures apply, and shift crew staffing plans may be modified during refueling outages to accommodate safe and efficient completion of outage work. Work hour limitations are discussed and reviewed in Section 13.7 of this SE.

FSAR Appendix 13AA, Subsection 13AA.2 refers to Appendix 14B. The FSAR does not appear to include an Appendix 14B. The staff issued RAI 2836, Question 13.01.01-2, requesting the applicant to identify the location of Appendix 14B. In its response dated November 5, 2009, the applicant stated that the reference in FSAR Appendix 13AA, Subsection 13AA.2 to Appendix 14B is incorrect and should have referred to FSAR Chapter 14, Appendix 14AA. The applicant also stated that FSAR Appendix 14AA was removed by COL Application (COLA) FSAR Update Tracking Report Revision 4 (ADAMS Accession Number ML092520137) and replaced with a reference to Technical Report MUAP-08009, Revision 3, "US-APWR Test Program Description"

(ADAMS Accession Number ML082900194) which will be reviewed in Chapter 14 of this SE. The applicant committed to revise FSAR Subsection 13AA.2 to delete the reference to Appendix 14B. The staff finds the response acceptable. This RAI is now being tracked as **Confirmatory Item 13.01.01-2**.

FSAR Section 13.1 does not include a description of the plan to develop the staff recruiting and training programs. The staff issued RAI 2836, Question 13.01.01-3, requesting the applicant to either identify the location of the plan in the FSAR or justify the exclusion of the plan from the FSAR. In its response dated November 5, 2009, the applicant stated that CPNPP has partnered with local community leadership, educators, colleges, and other utilities to develop a regional-based education alliance. The long-term vision of the alliance is to develop a workforce pipeline that would support CPNPP attrition challenges and operational expansion strategies. The applicant committed to revise FSAR Section 13.1, Section 13.2, and Figure 13.1-205 accordingly. The staff finds the applicant's plan to develop a workforce pipeline is acceptable. This RAI is now being tracked as **Confirmatory Item 13.01.01-3**. The applicant also states that the plant staff training program is provided in COL FSAR Section 13.2.

FSAR Section 13.1 does not include a description of the functions, responsibilities, and authorities for technical supervisors, radiation protection supervisors, instrumentation and controls maintenance supervisors, and equipment maintenance supervisors or their equivalents. The staff issued RAI 2837, Questions 13.01.02-13.01.03-2, requesting that the applicant either identify the location of the information in the FSAR or justify the exclusion of the information from the FSAR. In its response dated November 5, 2009, the applicant committed to revise FSAR Figure 13.1-201 and to revise FSAR Section 13.1 to include a description of the functions, responsibilities, and authorities for technical supervisors, radiation protection supervisors, instrumentation and controls maintenance supervisors, and equipment maintenance supervisors or their equivalents. The staff finds the applicant's description to be acceptable. This RAI is now being tracked as **Confirmatory Item 13.01.02-13.01.03-2**.

FSAR Section 13.1.2.1, "Operations Department," states that the Shift Operations Manager is the position designated to meet American National Standards Institute (ANSI) N18.1-1971 qualification requirements for Operations Manager. FSAR Section 13.1.2, "Operating Organization," states that the CPNPP operating organization will meet the guidelines of Regulatory Guide (RG) 1.8, "Qualification and Training of Personnel for Nuclear Power Plants," for its operating organization. The current revision of RG 1.8 endorses ANSI/American Nuclear Society (ANS) 3.1-1993. The staff issued **RAI 2837 Question 13.01.02-13.01.03-5** requesting the applicant to identify the reason for the disparity. In its response dated November 5, 2009, the applicant committed to revise Section 13.1.2.1 to reflect CPNPP, Units 3 and 4's commitment to ANSI/ANS 3.1-1993. The staff finds the response acceptable. This RAI is now being tracked as **Confirmatory Item 13.01.02-13.01.03-5**.

Section 13.1.1.3, "Qualifications," of the FSAR provides that the managers and supervisors in the technical support organizations meet the education and experience qualification requirements of ANSI/ANS 3.1-1993. As endorsed and amended by RG 1.8 and in Section 13.1.2, "Operating Organization," the general education and experience requirements for the identified operating organization positions are to be in accordance with ANSI/ANS 3.1-1993, as endorsed and amended by RG 1.8. The applicant also stated that the qualification and experience requirements of headquarters staff will be established in corporate policy and procedure manuals. In addition, Section 13.1.3 also states that resumes of these personnel, reflecting qualifications, will be provided when these positions are filled and that all positions will be filled prior to fuel loading for each unit.

On the basis of its review of CP COL 13.1 (5) and CP COL 13.1(7), the staff finds that, with the exception of the confirmatory items described above, the general qualification, education, training, and experience requirements established for management, operating, technical, and maintenance positions at CPNPP, as described, are acceptable and meet the guidance found in 10 CFR 50.54(m)(2)(i), NUREG-0800, Section 13.1.1, "Management and Technical Support Organization," and Section 13.1.2 - 13.1.3, "Operating Organization." The staff further finds that the information related to these sections provided in the application meets the guidelines of RG 1.8 for a COL applicant's operating organization, is consistent with the NRC Policy Statement on Engineering Expertise on Shift and meets the TMI Action Plan Items I.A.1.1 and I.A.1.3 of NUREG-0737, "Clarification of TMI Action Plan Requirements," issued November 1980, for shift staffing.

13.1.5 Post-Combined License Activities

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

13.1.6 Conclusions

The NRC staff concludes that the information pertaining to CPNPP COL FSAR Section 13.1 is within the scope of the DC and adequately incorporates, by reference, Section 13.1 of the US-APWR DCD, and therefore is acceptable.

In addition, the staff has compared the additional CPNPP, Units 3 and 4 COL information within the application to the relevant NRC regulations, acceptance criteria defined in SRP Section 13.1.1, "Management and Technical Support Organization," and Section 13.1.2 - 13.1.3, "Operating Organization," as well as other NRC regulatory guidance and concludes that the applicant has met the 10 CFR 50.40 (b) and NUREG-0800 SRP13.1.1 requirements for this section of the COL application. CP COL Information Items 13.1(1) - 13.1 (7) have been adequately addressed by the applicant and meets the NRC staff's guidance in NUREG-0800 SRP 13.1.1 and SRP 13.1.2. In conclusion, the applicant has provided sufficient information for satisfying the requirements of 10 CFR 50.40(b).

The NRC staff reviewed the application and checked the referenced DCD. The staff's review confirmed, with the exception of the confirmatory items described above, that the applicant addressed the required information relating to the management and technical support organization.

The staff is reviewing the information in DCD Section 13.1 under Docket Number 52-021. The results of the staff's technical evaluation of the information related to the management and technical support organization incorporated by reference in the CPNPP, Units 3 and 4 COL FSAR will be documented in the staff's SE of the DC application for the US-APWR design. The SE for the US-APWR is not yet complete, and this is being tracked as part of Open Item [1-1]. The staff will update Section 13.1.1 of this SE to reflect the final disposition of the DC application.

13.2 Training

13.2.1 Introduction

This section addresses the description and schedule of the training program for reactor operators and senior reactor operators, i.e., licensed operators. It addresses the scope of licensing examinations as well as training requirements. 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 CPNPP, Units 3 and 4 COL FSAR includes the description and schedule of the training program for non-licensed plant staff.

13.2.2 Summary of Application

Section 13.2 of the CPNPP, Units 3 and 4 COL FSAR, Revision 1, incorporates by reference, Section 13.2 of the US-APWR DCD, Revision 2. Section 13.2 of the DCD includes Section 13.2.1.

In addition, in CPNPP, Units 3 and 4 COL FSAR Section 13.2, the applicant provided additional information to address the following:

COL Information Items

The COL Applicant is to develop the training program description.

In STD COL 13.2(1), the applicant added supplemental information in COL Section 13.2.3 to describe training programs as follows:

Nuclear Energy Institute Publication NEI 06-13A, "Template for an Industry Training Program Description," Revision 1, which includes Appendix A - Cold License Training Plan, including all subsections is incorporated by reference. NEI 06-13 provides a complete generic program description for use with COL applications. The document reflects guidance provided by the NRC and by Industry-NRC discussions on training-related issues. A main objective of this program is to assist in expediting NRC review and issuance of the combined license. Chapter 1 of NEI 06-13 states "The results of reviews of operating experience are incorporated into training and retraining programs in accordance with the provisions of TMI Action Item I.C.5, Appendix 1A."

The COL Applicant is to develop training programs for reactor operators in accordance with NUREG-0800, Section 13.2.1.1.3.

In STD COL 13.2(2), the applicant added supplemental information to the COL Section 13.2.3 to identify information regarding licensed operator training program and requalification program descriptions, training program schedule, and requalification program implementation.

The COL Applicant is to develop training programs for non-licensed plant staff in accordance with NUREG-0800, Section 13.2.2.1.3.

In STD COL 13.2(3), the applicant added supplemental information to the COL Section 13.2.3 to identify information regarding the non-licensed plant staff training program, including a schedule showing approximate timing of initial training relative to fuel load.

The COL Applicant is to develop training programs. These programs include a chart, which shows the schedule of each part of the training program for each functional group of employees in the organization in relation to the schedule for preoperational testing, expected fuel loading, and expected time for examinations prior to plant criticality for licensed operators.

In STD COL 13.2(4), the applicant added introductory material to information incorporated by reference from DCD Section 13.2.3 to identify information regarding training programs and implementation milestones.

The COL Applicant is to determine the extent to which portions of applicable NRC guidance is used in the facility training program or the justification of exceptions.

In STD COL 13.2(5), the applicant listed applicable NRC guidance, as described in FSAR 13.2, to be used in the facility training program with no exceptions.

13.2.3 Regulatory Basis

The regulatory basis of the information incorporated by reference from the DCD is addressed within the FSER.

In addition, the relevant requirements of the Commission's regulations for the plant staff training program, and the associated acceptance criteria, are given in Section 13.2.1 and Section 13.2.2 of NUREG-0800, the SRP.

The applicable regulatory requirements for the COL information items, pertaining to training and qualification and requalification of licensed operators, are set forth in the following:

1. 10 CFR 50.54, "Conditions of Licenses," Items i through m, as they relate to the development, establishment, implementation and maintenance of training programs using a systems approach to training as defined by 10 CFR 55.4.
2. 10 CFR Part 55, "Operator Licenses," specifically, 10 CFR 55.4, 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," 10 CFR 55.46 and 10 CFR 55.59, Requalification."
3. 10 CFR 50.34(f)(2)(i)

The acceptance criteria to meet the above requirements are contained in:

1. RG 1.8, "Qualification and Training of Personnel for Nuclear Power Plants," Revision 3.
2. RG 1.149, "Nuclear Power Plant Simulation Facilities for Use in Operator Training and License Examinations," Revision 3.

3. NUREG-0711, "Human Factors Engineering Program Review Model."
4. NUREG-1021, "Operator Licensing Examination Standards for Power Reactors."
5. NUREG-1220, "Training Review Criteria and Procedures."
6. Generic Letter (GL) 86-04, "Policy Statement on Engineering Expertise on Shift."
7. RG 1.134, "Medical Evaluation of Licensed Personnel at Nuclear Power Plants,"
Revision 3

The applicable regulatory requirements for COL Information Items 13.2(1) through 13.2(5), pertaining to training and qualification of non-licensed plant staff, are set forth in the following:

1. 10 CFR 19.12, as it relates to appropriately informing and instructing personnel regarding the presence of radioactive materials and radiation, health protection problems associated with exposure thereto, means and responsibilities for protection of workers there from, and the availability upon request of radiation exposure reports. The personnel that must be so informed and instructed are all individuals who are likely to receive in a year an occupational dose greater than 1 millisievert (100 millirem [mrem]).
2. 10 CFR 26.21 and 10 CFR 26.22, as they relate to providing personnel training in conjunction with the fitness-for-duty program.
3. 10 CFR 50.34(a) and (b), as they relate to details of training given to non-licensed plant personnel and a schedule for such training.
4. 10 CFR 50.40(b), as it relates to training being an integral part of personnel technical qualification, which contributes to the finding that the applicant is technically qualified to engage in licensing activities.
5. 10 CFR 50.120, "Training and Qualification of Nuclear Power Plant Personnel," and 10 CFR 52.78, as they relate to derivation of training programs from a systems approach to training.
6. 10 CFR 52.79(a)(33), "Contents of Applications; Technical Information."
7. 10 CFR Part 50, Appendix E, Sections II.F and IV.F, as they relate to establishing emergency preparedness training and retraining programs covering employees and other nonemployees whose assistance may be needed in a radiological emergency.

Specific SRP acceptance criteria acceptable to meet the relevant requirements of the NRC's regulations identified above for non-licensed plant staff can be found in Part II of Section 13.2.2 of NUREG-0800.

13.2.4 Technical Evaluation

The NRC staff reviewed Sections 13.2 and 13.2.1 of the CPNPP, Units 3 and 4 COL FSAR and checked the referenced sections of the DCD to ensure that the combination of the DCD information incorporated by reference and the information in the COL application represent the complete scope of information relating to this review topic. The NRC staff's review confirmed that the information contained in the COLA and incorporated by reference from the DCD addresses the required information relating to the plant staff training program. Sections 13.2 and 13.2.1 of the US-APWR DCD are being reviewed by the staff under Docket Number 52-021. The NRC staff's technical evaluation of the information incorporated by reference related to the plant staff training program will be documented in the staff's SE of the DC application for the US-APWR design.

The NRC staff reviewed conformance of Section 13.2 of the FSAR to the guidance in RG 1.206, Section C.III.1, Chapter 13, Section C.III.13.2, "Training," and found that it appropriately incorporates by reference Section 13.2 of the US-APWR DCD, Revision 2.

In addition, the staff reviewed the information contained in the CPNPP, Units 3 and 4 COL FSAR pertaining to COL information items. To address these items, the applicant provided Standard (STD) COL Information Items 13.2(1) through 13.2(5) as described above in Section 13.2.2, "Summary of Application."

In its review, the staff found that the applicant incorporated the guidance of reference Nuclear Energy Institute (NEI) 06-13A, "Template for an Industry Training Program Description," Revision 1, to address the COL information items regarding the training programs for plant personnel. NEI 06-13A, Revision 1 was written to provide COL applicants with a generic program description for use with COLA 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. The incorporation of NEI 06-13A, Revision 1 effectively resolves the above COL information items.

Implementation schedules and milestones were provided by the applicant to address the relevant training programs associated with non-licensed plant staff training as required by 10 CFR Part 50.120 and 10 CFR Part 52.79(a)(33).

In NUREG-0800, Section 13.2.2, the staff stated the applicant training program should meet the guidelines of RG 1.8 for non-licensed personnel. The applicant will provide for positions covered by 10 CFR 50.120, a commitment to meet the requirements of 10 CFR 50.120 at least 18 months prior to fuel load. Additionally, the applicant will provide a commitment to conduct formal onsite training and on-the-job training such that the entire plant staff will be qualified before initial fuel load. FSAR Table 13.4-201 details the commitments and applicable requirement met. In FSAR, Section 13.2, the applicant stated that NEI 06-13A, Revision 1, is incorporated by reference. The staff determined this is acceptable because the applicant will include in the training programs those subjects that are required by regulation, and will base the training programs on systems approach to training, as required by regulation, in accordance with NEI 06-13A. The staff concluded the applicant has provided sufficient information to satisfy NUREG-0800, Section 13.2.2.

Implementation schedules and milestones were provided by the applicant to address the licensed operator training program as required by 10 CFR Parts 55.13, 55.31, 55.41, 55.43, and 55.45.

In NUREG-0800, Section 13.2.1, the staff stated that the training program for licensed operators should include the subjects in 10 CFR 55.13, 55.31, 55.41, 55.43, and 55.45. In FSAR, Section 13.2, the applicant stated that NEI 06-13A, Revision 1, is incorporated by reference. NEI 06-13A stated that the training program for licensed operators is in accordance with, and includes the subjects in, 10 CFR 55, specifically 10 CFR 55.41, 10 CFR 55.43, and 10 CFR 55.45. The staff determined that this is acceptable because the applicant will include in the training programs those subjects that are required by regulation, in accordance with NEI 06-13A. The staff concluded that the applicant has provided sufficient information to satisfy NUREG-0800, Section 13.2.1.

Implementation schedules and milestones were provided by the applicant to address the licensed operator requalification program as required by 10 CFR Parts 50.34(b), 10 CFR 50.54(i), and 10 CFR 55.59.

In NUREG-0800, Section 13.2.1, the staff stated the application should describe the requalification program for reactor operators (ROs) and senior ROs (SROs). In FSAR, Section 13.2, the applicant stated that NEI 06-13A, Revision 1, is incorporated by reference. NEI 06-13A addressed the requalification program descriptions in Section 1, "Training Program Description." In FSAR, Section 13.4, "Operational Program Implementation," the applicant described the licensed operator requalification program and its milestones. The staff found that the applicant-provided licensed operator requalification program meets the criteria found in NUREG-0800, Section 13.2.1. The staff determined that this is acceptable, as this meets the guidance of NUREG-0800, Chapter 13.2.1.

13.2.5 Post-Combined License Activities

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

13.2.6 Conclusions

The NRC staff reviewed the application and checked the referenced DCD. The staff's review confirmed that the applicant addressed the required information relating to the plant staff training program, and there is no outstanding information expected to be addressed in the CPNPP, Units 3 and 4 COL FSAR related to this section.

The staff concludes that the information pertaining to CPNPP COL FSAR Section 13.2 is within the scope of the DC and adequately incorporates by reference Section 13.2 of the US-APWR DCD, and is, thus, acceptable.

In addition, the staff has compared the additional COL information within the application to the relevant NRC regulations, acceptance criteria defined in NUREG-0800, Section 13.2, and other NRC RGs and concludes that the applicant is in compliance with NUREG-0800, Section 13.2, 10 CFR 50.54, and 10 CFR Part 55. With NEI 06-13A, "Template for an Industry Training Program Description," Revision 1, being incorporated by reference, the COL information items involving the training program have been adequately addressed by the applicant and can be considered satisfied.

The staff further concluded that 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 the description and schedule of the training program that were incorporated by reference have been resolved.

The staff is reviewing the information in DCD Section 13.2 and Section 13.2.1 under Docket Number 52-021. The results of the staff's technical evaluation of the information related to the plant staff training program incorporated by reference in the CPNPP, Units 3 and 4 COL FSAR will be documented in the staff's SE of the DC application for the US-APWR design. The SE for the US-APWR is not yet complete, and this is being tracked as part of Open Item [1-1]. The staff will update Section 13.2.1 of this SE to reflect the final disposition of the DC application.

13.3 Emergency Planning

13.3.1 Introduction

In this COLA CPNPP, Units 3 and 4, the applicant provided Part 5, "Emergency Plan," which included a comprehensive emergency plan for the proposed CPNPP, Units 3 and 4. The review of this application only addressed the Emergency Plan as it applies to the proposed units.

This section addresses the plans, design features, facilities, functions, and equipment necessary for radiological emergency planning that must be considered in a combined license COLA. This includes both the applicant's onsite emergency plan and State and local offsite emergency plans, which the NRC and the Federal Emergency Management Agency (FEMA) have evaluated both the applicant's onsite emergency plan and State and local offsite emergency plans and have determined that the plans are adequate, and there is reasonable assurance that they can be implemented. The plans shall be 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.

13.3.2 Summary of the Application

Section 13.3, "Emergency Planning," and Section 14.3.4.10, "ITAAC for Emergency Planning," of Part 2, "Final Safety Analysis Report," (FSAR) of the CPNPP, Units 3 and 4, COLA, Revision 1 incorporates by reference Section 13.3 and Section 14.3.4.10 of the US-APWR DCD, Revision 2 without any departures. The staff is currently conducting a technical review of the information under Docket Number 52-021. The results of the NRC's review will be documented in the NRC staff's FSER for the US-APWR DCD (NUREG-XXXX).

DCD Section 1.8, "Interfaces for Standard Design," identifies the significant interfaces between the US-APWR standard plant design and the conceptual design information for the Structure, System, and Components (SSCs) outside the scope of the certified design.

The US-APWR standard plant design consists of several buildings that are described in Subsection 1.2.1.7, "Plant Arrangement," along with the equipment located in those buildings. The standard plant design includes the entire nuclear island and several systems with interfaces that need to be addressed for construction of a US-APWR at a specific site.

Figure 1.2-1, "Typical US-APWR Site Arrangement Plan," of the DCD shows the typical site plan for the US-APWR design. In this figure, the Access Building, Auxiliary Building,(A/B) Reactor

Building (RB) including Containment, Turbine building, and power source buildings are standard plant design buildings. The size and relative locations of these buildings are fixed as part of the standard plant design. However, DCD Table 1.8.1, "Significant Site-Specific Interfaces with the Standard US-APWR Design," identifies the location and design of the administrative, training, and emergency response facilities as site specific US-APWR design features that shall be addressed by the COL applicant. These site specific US-APWR design related features are discussed in DCD Section 7.5.1, Section 9.5.2, and Section 13.3. However, this SE only addresses those design related aspects specific to SRP Section 13.3, "Emergency Planning." Site specific US-APWR design features related to Emergency Planning have been addressed by the applicant in COL Information Item 13.3(1). COL Information Item 13.3(1) has been evaluated by the staff in Attachment 13.3A and Section 13.3C.8 of this SE.

Interface Number 8 as it pertains to DCD Section 13.3. The portion of Interface Number 8 addressed in DCD Section 13.3 is enveloped by COL Information Item 13.3(1) and evaluated by the staff in Attachment 13.3A of this SE.

The following Requests for Additional Information (RAIs) are referenced throughout this SE:

- RAI 3183 responded by applicant on November 16, 2009.
- RAI 3295 responded by applicant on September 16, 2010.
- RAI 3327 responded by applicant on November 18, 2009.
- RAI 4224 responded by applicant on March 1, 2010.
- RAI 4579 responded by applicant on June 7, 2010.

US-APWR COL Information Items

In addition, within Section 13.3 and Section 14.3.4.10 of the submitted FSAR, the applicant provided the below COL information items. The items listed below are discussed in Attachment A, "COL Information Items and Departures," of this SER.

COL 13.3(1) Interfaces of design features with site specific designs and site parameters.

COL 13.3(2) Comprehensive emergency plan.

COL 13.3(3) Emergency classification and action level scheme.

COL 13.3(4) Security-related aspects of emergency planning.

COL 13.3(5) Multi-unit site interface plan depending on the location of the new reactor on, or near, an operating reactor site with an existing emergency plan.

COL 13.3(6) Emergency planning inspections, tests, analyses, and acceptance criteria.

COL 13.3(7) Operation Support Center.

COL 14.3(2) Proposed ITAAC for the facility's emergency planning not addressed in the DCD.

Onsite Emergency Plans

Part 5, "Emergency Plan," of the COLA contains the CPNPP, Units 3 and 4, Emergency Plan (the CPNPP, Units 3 and 4 Emergency Plan). The CPNPP, Units 3 and 4 Emergency Plan consists of a basic plan and eight appendices. The eight appendices provide additional detailed information regarding various aspects of the CPNPP, Units 3 and 4 Emergency Plan.

Offsite Emergency Plans

Part 5, "Emergency Plan," of the COLA includes current State and local emergency plans. In addition, Part 5 includes the detailed evacuation time estimate report.

ITAAC

Part 10, "Inspections, Tests, Analyses and Acceptance Criteria (ITAAC) and Proposed License Conditions," Revision 1, of the COLA provides information regarding emergency planning ITAAC. The ITAAC is evaluated in Section 13.3C.19 of this FSER.

License Conditions

In response to RAI 3327, Question 13.03-2.A-3.A, the applicant proposed the following license condition:

Prior to the full-participation exercise to be conducted in accordance with the requirements of Appendix E to 10 Part 50, Luminant shall establish Letters of Agreement with the following entities:

- a. Governors Division of Emergency Management (GDEM), Texas Department of Public Safety.
- b. Texas Department of State Health Services.
- c. Hood County Judge.
- d. Somervell County Judge.

These Letters of Agreement will identify the specific nature of arrangements in support of emergency preparedness for operation of the proposed new nuclear units and certify the agency's concurrence with the emergency action levels described in CPNPP, Units 3 and 4 COLA Emergency Plan Procedure," Assessment of Emergency Action Levels, Emergency Classification and Plan Activation."

In response to RAI 3327, Question 13.03-8.I-1, the applicant proposed the following license condition:

Execution of Letters of Agreement with State and local entities identifying the specific nature of arrangements in support of emergency preparedness and certifying the agency's concurrence with the emergency action levels prior to the full-participation exercise is a potential condition to the license.

In response to RAI 3295, Question 13.03-01.D-1, the applicant proposed the following license condition:

The licensee shall submit a fully developed set of site-specific Emergency Action Levels (EALs) to the NRC in accordance with NEI 99-01, Revision 5, with few differences or deviations. The fully developed site-specific EAL scheme shall be submitted to the NRC for confirmation at least 180 days prior to initial fuel load.

13.3.3 Regulatory Basis

The applicable regulatory requirements for emergency planning are as follows:

- Title 10 CFR 52.79(a)(21), "Contents of Applications; Technical Information in Final Safety Analysis Report," and 10 CFR 52.79(a)(22)(i) require that the FSAR include emergency plans that comply with the requirements of 10 CFR 50.47 and Appendix E to 10 CFR Part 50, and certifications from State and local governmental agencies with EP 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 finding 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 considered the applicable requirements in 10 CFR 52.77, 10 CFR 52.80, 10 CFR 50.33(g), and 10 CFR 100.21, "Non-seismic Siting Criteria."
- NUREG-0800, "Standard Review Plan [SRP] for the Review of Safety Analysis Reports for Nuclear Power Plants," identifies NUREG-0654/FEMA-REP-1, Revision 1, and other related guidance that the staff considered 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, Appendix A to 44 CFR 353, "Memorandum of Understanding (MOU) Between Federal Emergency Management Agency and Nuclear Regulatory Commission Relating to Radiological Emergency Planning and Preparedness," issued September 14, 1993, states that FEMA is responsible for making findings and determinations as to whether offsite emergency plans are adequate and can be implemented. FEMA radiological emergency preparedness (REP) guidance documents provide guidance on various topics for use by State and local organizations responsible for radiological emergency preparedness and response. NUREG-0654/FEMA REP-1 provides guidance to provide a basis for State and local governments to develop radiological emergency plans.

13.3.4 Technical Evaluation

The NRC staff reviewed Section 13.3 and Section 14.3.4.10 of the CPNPP COL FSAR and checked the referenced US-APWR DCD to ensure that the combination of information incorporated by reference from the DCD and the information in the COLA represent the complete scope of information relating to this review topic. The staff's review confirmed that the information contained in the application and incorporated by reference addressed the required information relating to emergency planning. Section 13.3 and Section 14.3.4.10 of the US-APWR DCD is being reviewed by the staff under Docket Number 52-021. The NRC staff's technical evaluation of the information incorporated by reference related to emergency planning will be documented in the staff's FSER of the US-APWR DCD (NUREG-XXXX).

The staff reviewed the information in the CPNPP COL FSAR:

US-APWR COL Information Items

- Combined License Information 13.3(1).
- Combined License Information 13.3(2).
- Combined License Information 13.3(3).
- Combined License Information 13.3(4).
- Combined License Information 13.3(5).
- Combined License Information 13.3(6).
- Combined License Information 13.3(7).
- Combined License Information 14.3(2).

The staff's review of the emergency planning information related to the above COL information items is addressed in Attachment 13.3A of this SE. The staff's review of the information provided in the application that is not part of the CPNPP Units 3 and 4 Emergency Plan is addressed in Attachment 13.3B of this SER. The NRC staff's review of the CPNPP, Units 3 and 4 Emergency Plan is addressed in Attachment 13.3C of this SE.

In addition, from January 5, 2009, to January 7, 2009, the staff conducted a site area visit of the proposed CPNPP site. The visit included reviews of the proposed plant location and various areas within the 10-mile emergency planning zone (EPZ).

The NRC staff also reviewed the application against the generic emergency planning ITAAC provided in Table 14.3.10-1, "Emergency Planning-Generic Inspections, Tests, Analyses, & Acceptance Criteria (EP ITAAC)," pursuant to Section 14.3.10 of NUREG-0800.

FEMA has reviewed the offsite emergency plans for the state of Texas, and the local government plans for Somerville and Hood counties in accordance with 44 CFR 350, "Review and approval of State and local radiological emergency plans and preparedness." On

December 10, 2009, FEMA submitted to the NRC an Interim Findings Report (IFR) for Reasonable Assurance (Agencywide Documents Access and Management System (ADAMS) Accession Number ML100050370). FEMA's review of the offsite emergency plans determined that the plans are adequate, and there is reasonable assurance that they can be implemented.

Based on the staff's evaluation of the applicant's emergency plan found in Attachment 13.3C of this SE, the staff finds that, with the exception of the confirmatory items detailed in Attachment 13.3C, the applicant's onsite emergency plan meets the standards in 10 CFR 50.47(b) and the requirements in Appendix E to 10 CFR Part 50.

Based on the IFR and the staff's evaluations detailed in Attachments 13.3A, 13.3B, and 13.3C of this SE, the staff finds that, with the exception of the confirmatory items detailed in these attachments, there is reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency. Therefore, the staff finds that the CPNPP, Units 3 and 4 emergency plan meets the requirements in 10 CFR 50.33(g), 10 CFR 50.34(b)(6)(v), 10 CFR 50.34(f)(2), 10 CFR 50.47, Appendix E to 10 CFR Part 50, and 10 CFR 52.77.

License Conditions

In its response, to RAI 3327, Question 13.03-2.A-3.A, the applicant stated that Part 10 of the CPNPP, Units 3 and 4 COLA will be revised to include the following license condition pursuant to the requirements specified in Appendix E to 10 CFR Part 50:

Prior to the full-participation exercise to be conducted in accordance with the requirements of Appendix E to 10 Part 50, Luminant shall establish Letters of Agreement with the following entities:

- a. Governors Division of Emergency Management (GDEM), Texas Department of Public Safety
- b. Texas Department of State Health Services
- c. Hood County Judge
- d. Somervell County Judge

These Letters of Agreement will identify the specific nature of arrangements in support of emergency preparedness for operation of the proposed new nuclear units and certify the agency's concurrence with the emergency action levels described in CPNPP, Units 3 and 4 COLA Emergency Plan Procedure, "Assessment of Emergency Action Levels, Emergency Classification and Plan Activation."

The staff revised the proposed license condition pursuant to the requirements of 10 CFR 50, Appendix E as follows:

License Condition (13-1) - Prior to the full-participation exercise to be conducted in accordance with the requirements of Appendix E to 10 Part 50, Luminant shall establish Letters of Agreement with the following entities:

- a. Governors Division of Emergency Management (GDEM), Texas Department of Public Safety

- b. Texas Department of State Health Services
- c. Hood County Judge
- d. Somervell County Judge

These Letters of Agreement will identify the specific nature of arrangements in support of emergency preparedness for operation of the proposed new nuclear units.

The staff finds the above proposed license condition, as modified, acceptable because the written agreements as modified will identify the emergency measures to be provided and the mutually acceptable criteria for their implementation, and specify the arrangements for exchanges of information as identified in NUREG-0654/FEMA-REP-1; Evaluation Criterion A.3. The staff's evaluation of the written agreements, which refer to the concept of operations developed between Federal, State, and local agencies and other support organizations having an emergency response role within the EPZ, is documented in Section 13.3C.1, "Assignment of Responsibility (Organizational Control)," of this SE.

In its response, to RAI 3327, Question 13.03-8.I-1, the applicant stated that Part 10 of the CPNPP, Units 3 and 4 COLA will be revised to included the following license condition pursuant to 10 CFR 50.47(b) and 10 CFR Part 50 Appendix E:

Execution of Letters of Agreement with State and local entities identifying the specific nature of arrangements in support of emergency preparedness and certifying the agency's concurrence with the emergency action levels prior to the full-participation exercise is a potential condition to the license.

Pursuant to the requirements of 10 CFR 50, Appendix E, IV.B, the NRC staff revised the proposed license condition as follows:

License Condition (13-2) - The licensee shall execute formal Letters of Agreement with State and local entities with emergency planning responsibilities prior to the full-participation exercise. These Letters of Agreement shall identify the specific nature of arrangements in support of emergency preparedness for operation of the proposed new nuclear units.

The staff finds the license condition as modified acceptable because these formal Letters of Agreement will appropriately identify the emergency measures to be provided in the event of an emergency pursuant to the requirements of 10 CFR 50, Appendix E.

In its response to RAI 3295, Question 13.03-01.D-1, the applicant stated that Part 10 of the CPNPP, Units 3 and 4 COLA will be revised to include the following license condition pursuant to the requirements identified in 10 CFR 50.47(b) and 10 CFR Part 50 Appendix E:

The licensee shall complete development of the site-specific Emergency Action Levels (EALs) presented in Appendix 1 to the Comanche Peak Nuclear Power Plant Units 3 & 4 Combined License Application Emergency Plan in accordance with 99-01, Revision 5, with few differences or deviations. The fully developed site-specific EAL scheme shall be submitted to the NRC for confirmation at least 180 days prior to initial fuel load.

Pursuant to the requirements of 10 CFR 50.47(b) and 10 CFR 50, Appendix E, the staff revised the proposed license conditions as follows:

License Condition (13-3) - The licensee shall submit a fully developed set of plant-specific Emergency Action Levels (EALs) for CPNPP 3&4 in accordance with NEI 99-01 Revision 5 with the exception of the deviations specified in Appendix 1 of the CPNPP3&4 application, "EAL Differences and Deviations from NEI Guidance," and approved in NRC staff's SER Section 13.3C.4. 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.

The staff finds the license condition as modified acceptable because it ensures that the State and local officials have familiarized themselves with the applicant's emergency action level scheme and is aware of their role in the event of an emergency. The staff's evaluation of the applicant's emergency classification and emergency action level scheme is documented in Section 13.3C.4, "Emergency Classification System," of this SE.

13.3.5 Post-Combined License Activities

The following items have been identified as the responsibility of the COL license holder

License Condition (13-1) - Prior to the full-participation exercise to be conducted in accordance with the requirements of Appendix E to 10 Part 50, Luminant shall establish Letters of Agreement with the following entities:

- a. Governors Division of Emergency Management (GDEM), Texas Department of Public Safety
- b. Texas Department of State Health Services
- c. Hood County Judge
- d. Somervell County Judge

These Letters of Agreement will identify the specific nature of arrangements in support of emergency preparedness for operation of the proposed new nuclear units.

License Condition (13-2) - The licensee shall execute formal Letters of Agreement with State and local entities with emergency planning responsibilities prior to the full-participation exercise. These Letters of Agreement shall identify the specific nature of arrangements in support of emergency preparedness for operation of the proposed new nuclear units.

License Condition (13-3) - The licensee shall submit a fully developed set of plant-specific EALs for CPNPP, Units 3 and 4 in accordance with NEI 99-01 Revision 5, with the exception of the deviations specified in Appendix 1 of the CPNPP, Units 3 and 4 application, "EAL Differences and Deviations from NEI Guidance," and approved in the NRC staff's Safety Evaluation Report Section 13.3C.4. 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.

13.3.6 Conclusions

The results of the staff's technical evaluation of the US-APWR DCD information incorporated by reference in the CPNPP, Units 3 and 4 COLA is being reviewed under Docket number 52-021 and will be documented in the staff's FSER of the DC application for the US-APWR.

Pursuant to 10 CFR 52.80(a), the CPNPP, Units 3 and 4, COLA includes the proposed inspections, tests, and analyses that the licensee shall perform, and the acceptance criteria that are necessary and sufficient to provide reasonable assurance that, if the inspections, tests, and analyses are performed and the acceptance criteria met, the facility has been constructed and will operate in conformity with the license, the provisions of the Atomic Energy Act of 1954, and the NRC's rules and regulations. The COL ITAAC that are applicable to emergency planning for CPNPP, Units 3 and 4, are included in Table B-2 "Emergency Plan Inspections, Tests, Analyses, and Acceptance Criteria," of Part 10 and are addressed in Section 13.3C.19.

FEMA has reviewed the emergency plans for the state of Texas, the local government plans for Somerville and Hood counties in accordance with 44 CFR 350 and provided its IFR for Reasonable Assurance, December 10, 2009 (ADAMS Accession Number ML100050370). FEMA has determined that the plans are adequate, and there is reasonable assurance that the plans can be implemented with no corrections needed.

Based on the staff's evaluation of the applicant's emergency plan for proposed CPNPP, Units 3 and 4 found in Attachment 13.3C, the staff finds that, with the exception of the Confirmatory Item detailed in Attachment 13.3C, the applicant's onsite emergency plan meets the standards in 10 CFR 50.47(b) and the requirements in Appendix E to 10 CFR Part 50.

Based on the IFR and the staff's evaluations detailed in Attachments 13.3A, 13.3B, and 13.3C of this SE, the staff finds that, with the exception of the Confirmatory Items detailed in these attachments, there is reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency. Therefore, with the exceptions noted above, the staff finds that the CPNPP, Units 3 and 4, emergency plan meets the requirements in 10 CFR 50.33(g), 10 CFR 50.34(b)(6)(v), 10 CFR 50.34(f)(2), 10 CFR 50.47, Appendix E to 10 CFR Part 50, 10 CFR 52.77, 10 CFR 52.79(a)(21), 10 CFR 52.79(a)(22)(i), 10 CFR 52.80, 10 CFR 52.81, and 10 CFR 52.83.

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

ATTACHMENT 13.3A - COL INFORMATION ITEMS, SUPPLEMENTAL INFORMATION ITEMS AND DEPARTURES

Introduction

This section addresses the COL information items, supplemental information items and departures associated with emergency planning.

Section 13.3 of the COLA does not include any emergency planning related supplemental information items. In addition, there are no departures associated with emergency planning from the US-APWR certified design for the CPNPP, Units 3 and 4 that must be addressed.

13.3A.1 Regulatory Basis

The applicable regulatory requirements for COL Information Items 13.3(1) through 13.3(7) and 14.3(2) dealing with emergency planning, are established in 10 CFR 50.47(b), 10 CFR Part 52, Appendix E to 10 CFR Part 50, 10 CFR 50.33(g), 10 CFR 52.79(a)(17), 10 CFR 52.79(a)(21), 10 CFR 52.80, and 10 CFR 50.34(f)(2)(xxv), and the guidance provided in NUREG-0654/FEMA-REP-1, Revision 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," (including the March 2002, addenda) and NUREG-0696, "Functional Criteria for Emergency Response Facilities."

13.3A.2 COL Information Items

Technical Information in the Application:

Combined License Information 13.3(1)

In Section 13.3, of the DCD, MHI provided details of the emergency planning features as they relate to the basic design. DCD, Tier 2, Section 13.3.4, "Combined License Information," states that combined license applicants referencing the US-APWR certified design must develop interfaces of design features with site specific designs and site parameters.

The applicant provided information in FSAR section 13.3, "Emergency Planning," to resolve COL Information Item 13.3(1). The applicant stated that interfaces of design features with site specific designs and site parameters are addressed in Section 13.3 of the CPNPP, Units 3 and 4 Combined License Application Part 5 "Emergency Plan."

Section F, "Emergency Communications," of the CPNPP, Units 3 and 4 Emergency Plan states that the plants communication systems are designed to provide prompt, reliable, redundant intraplant communications, plant-to-offsite communications, and offsite emergency response communications with the State of Texas and Somervell and Hood Counties' Emergency Response Organizations during normal operation and during accident conditions.

The NRC staff's complete evaluation of applicant's interfacing capabilities is contained within Section 13.3C.6, "Emergency Communications," of Attachment C to this SE.

Combined License Information 13.3(2)

Section 13.3.1, "Combined License Application and Emergency Plan Content," of the DCD states that the development of a comprehensive emergency plan as a physically separate

document (Section 13.3 of the Final Safety Analysis Report (FSAR)) shall be designated as the responsibility of the COL Applicant. This was identified in DCD Section 13.3.4 as COL Information Item 13.3(2).

The Emergency Plan for the CPNPP, Units 3 and 4 is provided in COLA Part 5 "Emergency Plan." It incorporates, by reference, State and local emergency plans and includes copies of letters of agreement from state and local governmental agencies with emergency planning responsibilities. The staff's evaluation of the CPNPP, Units 3 and 4 Emergency Plan is contained within Attachment 13.3C of this SE.

Combined License Information 13.3(3)

Section 13.3.4 of the US-APWR DCD requires the establishment of an emergency classification and action level scheme by the COL Applicant referencing the US-APWR certified design. This was identified as COL Information Item 13.3(3) within the DCD.

In Section D, "Emergency Classification System," of the CPNPP, Units 3 and 4 Emergency Plan the applicant states that Luminant will be adopting the EAL methodology provided in NEI 99-01, Revision 5.

The staff's evaluation of the applicant's Emergency Classification System is contained within Section 13.3C.4, "Emergency Classification," of Attachment C to this SE.

Combined License Information 13.3(4)

US-APWR DCD Section 13.3.1 requires that the submitted Emergency Plan also address security-related aspects of emergency planning. This was identified in DCD Section 13.3.4 as COL 13.3(4).

FSAR Section 13.3.1 of the submitted application states that security-related aspects of emergency planning are addressed in the CPNPP, Units 3 and 4 Emergency Plan. Part J, "Protective Response," of the plan describes protective measures in the event of a hostile attack against the site.

Section 13.3C.17, "Security-Based Event Considerations," of this SE provides the staff's evaluation and verification that onsite staffing, facilities, and procedures are adequate to accomplish actions necessary in response to a security event.

Combined License Information 13.3(5)

DCD Section 13.3.2 "Emergency Plan Considerations for Multi-Unit Site," states that the development of the emergency plan for a multi-unit site is designated as the responsibility of the COL Applicant depending on the location of the new reactor on, or near, an operating reactor site with an existing emergency plan. This was identified in DCD Section 13.3.4, as COL Information Item 13.3(5).

Two existing Westinghouse 4-loop pressurized water reactors (Units 1 and 2) are located at the CPNPP site. The applicant stated that the planning basis for the proposed Units 3 and 4 draw extensively on the existing Emergency Plan and that the proposed CPNPP, Units 3 and 4 are in the existing emergency planning zone established around CPNPP, Units 1 and 2.

FSAR Section 13.3.2, "Emergency Plan Considerations for Multi-Unit Site," of the CPNPP, Units 3 and 4 application states that the interface between the Emergency Plan for the proposed CPNPP, Units 3 and 4 and the existing Emergency Plan for the CPNPP, Units 1 and 2 is addressed in the CPNPP, units 3 and 4 COLA Emergency Plan.

Based upon the staff's review of the Emergency Plan, the staff concluded that additional justification (e.g., an appropriate explanation or analysis) in support of the use of existing elements, as related to expanding the existing program to include two additional reactors, and the identification of the associated impacts to the existing Emergency Planning (EP) program which may be encountered due to the addition of two new reactors to the site was needed. CPNPP RAI 3327, Question 13.03-16 T-1, requested that the applicant revise the Emergency Plan to address the nine elements as identified in RG 1.206 Section C.I.13.3.2.

In its response to RAI 3327, Question 13.03-16 T-1, the applicant explained that each Emergency Plan is a standalone document; however, the independence of the two plans is not intended to infer that the elements of the emergency response protocols are independent. The applicant stated that the planning basis draws extensively on the existing Emergency Plan and went on to describe the emergency response protocols that will be shared amongst the facilities.

Combined License Information 13.3(6)

DCD Section 14.3.4.10, states that the COL applicant is responsible for providing proposed ITAAC, in accordance with RG 1.206, for the facility's emergency planning not addressed in Table 2.10-1, "Emergency Planning Inspections, Tests, Analyses, and Acceptance Criteria," of the DCD. Thus, the development of emergency planning ITAAC by COL applicants referencing the US-APWR certified design was identified in DCD Section 13.3.4 as COL Information Item 13.3(6).

FSAR Section 13.3.3, "Emergency Planning Inspections, Tests, Analyses, and Acceptance Criteria," states that emergency planning ITAAC are addressed in the CPNPP, Units 3 and 4 Emergency Plan and are provided specifically in Part 10, "ITAAC and ITAAC Closure," of the proposed application.

Section 13.3C.19, "Inspection, Test, Analysis, and Acceptance Criteria (EP ITAAC)," of this FSER provides the staff's evaluation of the COL applicant's proposed ITAAC to address those elements of the emergency plan that cannot be completed during the COLA review phase.

Combined License Information 13.3(7)

DCD Section 13.3.4 states that the description of the Operation Support Center (OSC) and its communication interfaces is the responsibility of the COL Applicant. Therefore, the establishment of the OSC and communication interfaces, for inclusion in the detailed design of the control room and Technical Support Center (TSC) and consistent with the detailed guidance in NUREG-0696 was identified in the DCD as COL Information Item 13.3(7).

In FSAR Section 13.3, the applicant stated that a description of the OSC is provided in the CPNPP, Unit 3 and 4 Emergency Plan. Section H.1, "Onsite Emergency Response Facilities," "Operations Support Center," of the CPNPP, Units 3 and 4 Emergency Plan provides details pertaining to the OSC in order to address the criteria specified in COL Information Item 13.3(7).

Section 13.3C.8, "Emergency Facilities and Equipment," of this FSER provides the staff's complete evaluation of the applicant's capability to provide and maintain adequate emergency facilities and equipment to support the emergency response.

Combined License Information 14.3(2)

DCD Section 14.3.4.10, "ITAAC for Emergency Planning," references Section 2.10, "Emergency Planning," of Tier 1 of the DCD. DCD Section 2.10 addresses certain features of the US-APWR plant design that support emergency planning and the capability of the licensee to cope with plant emergencies. Table 2.10-1, "Emergency Planning Inspections, Tests, Analyses, and Acceptance Criteria," found within Tier 1 of the DCD provides a brief list of ITAAC related to the Design of the US-APWR.

In FSAR Section 14.3.4.10, "ITAAC for Emergency Planning," the applicant stated that the ITAAC conforms to the guidance within RG 1.206, as modified to reflect the design and specific emergency planning program requirements. In addition, the applicant explained that the ITAAC for the facility's emergency planning are provided in Part 10 of the COLA submittal.

Section 13.3C.19, "Inspection, Test, Analysis, and Acceptance Criteria (EP ITAAC)," of this FSER provides the staff's evaluation of the COL applicants proposed ITAAC to address those elements of the emergency plan that cannot be completed during the COLA review phase.

Technical Evaluation: The staff's complete evaluation of the applicant's resolution to the eight emergency planning related COL information items identified in Revision 3 to the US-APWR DCD are contained in Attachment 13.3 Cto this SE.

As described above, in response to RAI **3327, Question 13.03-16 T-1**, the applicant explained that although the Emergency Plan for CPNPP, Units 3 and 4 draws upon the Emergency Plan for CPNPP, Units 1 and 2, each facility's Plan is a stand alone document. In addition, the staff concludes that Section II.A of the Emergency Plan, "Coordination with CPNPP, Units 1 and 2," and the additional information provided by the applicant provides an acceptable description of the relationship between the two facilities and therefore meets the intent of elements identified in RG 1.206 Section C.I.13.3.2. Therefore, the staff finds the additional information provided by the applicant in response to **RAI 3327, Question 13.03-16 T-1** to be acceptable.

13.3.A.3 Supplemental Information Items

There are no supplemental information items related to this section.

13.3.A.4 Departures

There are no departures related to this section.

13.3.A.5 Post Combined License Activities

There are no post COL activities related to this section.

13.3.A.6 Conclusion

The staff reviewed the application and checked the referenced DCD. The staff's review confirmed that the applicant addressed the required information relating to EP COL information

items, supplemental information items and departures, and there is no outstanding information expected to be addressed in the CPNPP, Units 3 and 4 COLA FSAR related to this section. The results of the staff's technical evaluation of the US-APWR DCD information incorporated by reference in the CPNPP, Units 3 and 4 COLA are documented in NUREG-XXXX.

As discussed in Attachment C to this SE the staff has compared the COL information items in the CPNPP, Units 3 and 4 COLA to the applicable NRC regulations and other NRC RGs and concludes that the applicant is in compliance with the applicable regulatory requirements in 10 CFR 50.33(g), 10 CFR 52.79(a)(21), 10 CFR 50.34(f)(2)(xxv), 10 CFR 50.47(b)(6) and (8), and the applicable guidance provided in NUREG-0654/FEMA-REP-1 and in NUREG-0800.

Attachment 13.3B - Emergency Planning Information in the Application

Introduction

This section contains the staff's evaluation of emergency planning information that is required to be provided in the CPNPP, Units 3 and 4 COLA, but it does not address the applicant's plans for responding to a radiological emergency, which are evaluated in Attachment 13.3C of this SE.

13.3B.1 Regulatory Basis²

The applicable regulatory requirements for EP information are as follows:

- Appendix E to 10 CFR Part 50, Section I, "Introduction," describes the EPZ.
- Appendix E to 10 CFR Part 50, Section E.III, "The Final Safety Analysis Report," requires that the FSAR contain plans for coping with emergencies.
- 10 CFR 52.79(a)(21), "Contents of the Applications; Technical Information in the Final Safety Analysis Report," and 10 CFR 50.34(b)(6)(v), "Final Safety Analysis Report," also require that the FSAR contain an onsite emergency plan that meets the requirements in 10 CFR 50.47 and Appendix E to 10 CFR Part 50.
- 10 CFR 50.33, "Content of the Application: General Information," and 10 CFR 52.77, "Contents of Applications; General Information," require in part, the submittal of State and local emergency plans.
- 10 CFR 50.33(g), requires, in part, a description of the plume exposure pathway and the ingestion pathway EPZs. In addition, 10 CFR 50.47(c)(2), "Emergency Plans," states generally, the plume exposure pathway EPZ for nuclear power plants shall consist of an area about 10 miles (16 km) in radius and the ingestion pathway EPZ shall consist of an area about 50 miles (80 km) in radius. The exact size and configuration of the EPZs surrounding a particular nuclear power reactor shall be determined in relation to local emergency response needs and capabilities as they are affected by such conditions as demography, topography, land characteristics, access routes, and jurisdictional boundaries. The plans for the ingestion pathway shall focus on such actions as are appropriate to protect the food ingestion pathway.
- 10 CFR 50.34(b)(6)(v) requires plans for coping with emergencies, which shall include the items specified in Appendix E. 10 CFR 50.34(h)(1)(i), and 10 CFR 52.79(a)(41) require that the COLA include an evaluation of the facility against NUREG-0800, "Standard Review Plan," March 2007. Section 13.3, "Emergency Planning," of NUREG-0800 provides guidance for the review of onsite emergency plans for nuclear power plants. 10 CFR 50.34(h)(2) and (3) require that the evaluation identify and describe all differences from NUREG-0800

² The bracketed [], alphanumeric designations used throughout this FSEER section identify the corresponding NUREG-0654/FEMA-REP-1 evaluation criteria used by the NRC staff to determine compliance with 10 CFR 50.47(b).

Braces {} identify requirements in Appendix E to 10 CFR Part 50.

Parentheses () identify other applicable regulatory requirements

acceptance criteria in Section 13.3 and evaluate how the proposed alternatives to the NUREG-0800 criteria provide an acceptable method of complying with the Commission's regulations. Where differences exist, the evaluation should discuss how the proposed alternative provides an acceptable method of complying with the Commission's regulations or portions thereof that underlie the corresponding NUREG-0800 acceptance criteria.

- 10 CFR 52.73, "Relationship to Other Subparts," states that the application for a combined license may reference a standard design.
- 10 CFR 52.79, "Contents of the Applications: Technical Information in the Final Safety Analysis Report." 10 CFR 52.79(a)(22)(i) requires certifications from the State and local governmental agencies with emergency planning responsibilities that (1) the proposed emergency plans are practicable; (2) these agencies are committed to participating in any further development of the plans, including any required field demonstrations; and (3) these agencies are committed to executing their responsibilities under the plans in the event of an emergency.
- 10 CFR 52.81, "Standards for Review of Applications," states that COLAs will be reviewed according to the standards in 10 CFR Parts 50 and 100. Therefore, the requirements of 10 CFR 100, "Reactor Site Criteria," Subpart B, "Evaluation Factors for Stationary Power Reactor Site Applications on or after January 10, 1997," are applicable. 10 CFR 100.1(c) requires the identification of physical characteristics unique to the proposed site that could pose a significant impediment to the development of emergency plans. In addition, 10 CFR 100.21(g) also requires that applications for site approval identify physical characteristics unique to the proposed site.
- 10 CFR 100.1(c), "Reactor Site Criteria, Purpose," states siting factors and criteria are important in assuring that radiological doses from normal operation and postulated accidents will be acceptably low, that natural phenomena and potential man-made hazards will be appropriately accounted for in the design of the plant, that site characteristics are such that adequate security measures to protect the plant can be developed, and that physical characteristics unique to the proposed site that could pose a significant impediment to the development of emergency plans are identified.
- 10 CFR 100.21(g), "Non-seismic Siting Criteria," states physical characteristics unique to the proposed site that could pose a significant impediment to the development of emergency plans must be identified.

13.3B.2 FSAR and Onsite Emergency Plan

Technical Information in the Application: {Appendix E, Section III} (10 CFR 52.79(a)(21))(10 CFR 50.34(b)(6)(v)) Chapter 13.3, "Emergency Planning," of Part 2, "FSAR," of the CPNPP COLA states in CP COL 13.3-1 that emergency planning information is submitted to the NRC as a separate licensing document. The document is Part 5, "Emergency Plan," (Comanche Peak Emergency Plan) of the COLA. Section I.B, "Scope," of the CPNPP Emergency Plan states that the CPNPP Emergency Plan applies to planning for and responding to any radiological condition at the CPNPP. Section I.C.1, "Planning Basis," of the CPNPP

Emergency Plan states that consistent with the requirements of both 10 CFR Part 50 and 10 CFR Part 52, the CPNPP Emergency Plan is based on the requirements of 10 CFR 50, Section 50.47, "Emergency Plans," and Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities." The CPNPP Emergency Plan also includes eight appendices that provide additional detailed information on various aspects of the onsite emergency plan.

Technical Evaluation: {Appendix E, Section III} (10 CFR 52.79(a)(21))(10 CFR 50.34(b)(6)(v)). The staff finds that the CPNPP, Units 3 and 4 COL FSAR contains an emergency plan for coping with emergencies at the Comanche Peak Nuclear Station that complies with 10 CFR 50.47, 10 CFR 52.79(a)(21) and 10 CFR 50.34(b)(6)(v). The staff's evaluation of the applicant's conformance to the above described regulations is contained in Attachment 13.3C, "Onsite Emergency Plan," to this SE.

13.3B.3 Submittal of State and Local Emergency Plans

Technical Information in the Application: (10 CFR 50.33(g)): The section titled "Explanatory Notes Regarding the Emergency Plan and Supplemental Information," of Part 5, "Emergency Plan," of the COL application states that current state and local emergency planning documents are included as Supplemental Information. The list of state and local emergency planning documents includes:

- Hood County, Texas Emergency Plan
- Summerville County, Texas Emergency Plan
- State of Texas Emergency Plan

Technical Evaluation (10 CFR 50.33(g)): The applicant submitted offsite emergency plans for State and local governmental entities that are wholly or partially within the plume exposure pathway EPZ. These State and local governmental entities include: Hood County, Summerville County, and the State of Texas. The staff finds this acceptable because it meets the requirements in 10 CFR 50.33(g)

The results of the FEMA review of, and their findings and determinations related to, the offsite plans for the CPNPP site can be found under ADAMS Accession Number ML100050370.

13.3B.4 Description of the Emergency Plan Zone

Technical Information in the Application: {Appendix E, Section I} (10 CFR 50.47(c)(2)) Section B, "Background-Emergency Planning Zones," in Part 5, "Emergency Plan," of the COLA describes plume exposure pathway and ingestion pathway EPZs. The plume exposure pathway EPZ consists of an area about 10 miles in radius around the site. Figure 1-1, "10 mile Emergency Planning Zone," provides an illustration of the plume exposure pathway EPZ. The plume exposure pathway EPZ is also described to be the area where the principal sources of incident-related radiation exposures are likely to be whole body gamma radiation exposures and inhalation exposures from the passing radioactive plume.

Section B also includes a description of the ingestion pathway EPZ. The ingestion pathway EPZ consists of an area about 50 miles in radius around the site. Figure I-2, "50 Mile Emergency Planning Zone," provides an illustration of the ingestion pathway EPZ.

Technical Evaluation: {Appendix E, Section I} (10 CFR 50.47(c)(2)): The onsite emergency plan for CPNPP, Units 3 and 4 describes the plume exposure pathway EPZ as consisting of an area about 10 miles in radius and the ingestion pathway EPZ consisting of an area about 50 miles in radius. The exact size and configuration of the EPZs surrounding CPNPP, Units 3 and 4 were determined in relation to the local emergency response needs and capabilities as they are affected by such conditions as demography, topography, land characteristics, access routes, and jurisdictional boundaries. The EPZs for CPNPP, Units 3 and 4 are the same as those used for CPNPP, Units 1 and 2. The staff finds this acceptable because it conforms with the regulations as required in 10 CFR Part 50, Appendix E, Section I and 10 CFR 50.47(c)(2).

13.3B.5 Certifications from State and Local Governments

Technical Information in the Application: (10 CFR 52.79(a)(22)(i)): The CPNPP Emergency Plan did provide Letters of Certification from the State of Texas, Department of Emergency Management, and Hood and Summerville Counties in Texas which stated that (1) the proposed emergency plans are practicable; (2) these agencies are committed to participating in any further development of the plans, including any required field demonstrations; and (3) these agencies are committed to executing their responsibilities under the plans in the event of an emergency.

Technical Evaluation: (10 CFR 52.79(a)(22)(i)): The staff finds the certifications acceptable because they meet the requirements of 10 CFR 52.79(a)(22)(i). The staff's evaluation of the applicant's conformance to the above described regulation is contained in Attachment 13.3C, "Onsite Emergency Plan," to this SE.

13.3B.6 Evaluation Against the Standard Review Plan

Technical Information in the Application: (10 CFR 52.79(a)(41)) (10 CFR 50.34(h)(1)(i)) (10 CFR 50.34(h)(2 and 3)): The applicant's "FSAR Position," included in Table 1.9-214, "Comanche Peak Nuclear Power Plant, Units 3 & 4, Conformance with Standard Review Plan, Chapter 13 Conduct of Operations," in Part 2, "FSAR," of the COLA addresses the conformance of the application with the SRP acceptance criteria in SRP Section 13.3, "Emergency Planning."

Technical Evaluation: (10 CFR 52.79(a)(41)) (10 CFR 50.34(h)(1)(i)) (10 CFR 50.34(h)(2 and 3)): The staff reviewed the applicant's evaluation of the CPNPP Emergency Plan against the applicable portions of Section 13.3, "Emergency Planning," of NUREG-0800, "Standard Review Plan," issued in March 2007. The evaluation identified and described all differences from the SRP acceptance criteria in SRP Section 13.3 and evaluated how the proposed alternatives to the SRP criteria provide an acceptable method for complying with the Commission's regulations. Where differences existed, the evaluation discussed how the alternative proposed provides an acceptable method for complying with those rules or regulations of the Commission, or portions thereof that underlie the corresponding SRP acceptance criteria. This is acceptable because it meets the requirements of 10 CFR 52.79(a)(41), 10 CFR 50.34(h)(1)(i), and 10 CFR 50.34(h)(2 and 3). The staff's evaluation of the applicant's conformance to the above described regulations is contained in Attachment 13.3C, "Onsite Emergency Plan," to this SE.

13.3B.7 Reference to a Standard Design

Technical Information in the Application (10 CFR 52.73): Section 13.3, "Emergency Planning," of Part 2, FSAR," of the COLA, states that the US-APWR DCD is incorporated by reference.

Technical Evaluation (10 CFR 52.73): The staff finds that the US-APWR DCD is incorporated by reference in the CPNPP, Units 3 and 4 COL FSAR and the evaluation of the COL information items the US-APWR DCD are addressed in Attachments 13.3A and 13.3C of the FSER. The staff finds this acceptable because it meets the requirements of 10 CFR 52.73.

13.3B.8 Impediments to the Development of Emergency Plans

Technical Information in the Application: (10 CFR 52.81) (10 CFR 100.1(c)) (10 CFR 100.21(g)) Appendix 4, "Evacuation Time Estimates," to Part 5, "Emergency Plan," of the COL application states that evacuation time estimate (ETE) report, "Comanche Peak, Final ETE Report," dated April 2008, describes the analyses undertaken, and the results obtained by a study, to develop evacuation time estimates for the proposed CPNPP, Units 3 and 4 at the existing CPNPP site. The staff's evaluation of the ETE is contained in Appendix C, Section 13.3C.18, "Evacuation Time Estimate Analysis." Also in Appendix 4, "Evacuation Time Estimates," to Part 5 of the Comanche Peak Emergency Plan, the applicant concluded that there are no physical characteristics unique to the CPNPP site that poses a significant impediment to the development of the proposed emergency plans. In addition, the applicant adequately identified physical characteristics unique to the proposed site by performing a preliminary analysis of the time required to evacuate various sectors and distances within the plume exposure pathway EPZ for transient and permanent populations and did not note any major impediments for an evacuation or other protective actions.

Technical Evaluation: (10 CFR 52.81) (10 CFR 100.1(c)) (10 CFR 100.21(g)): The applicant has demonstrated, through the use of the "Comanche Peak, Final ETE Report," that no physical characteristics unique to the proposed site for CPNPP, Units 3 and 4, could pose a significant impediment to the development of emergency plans. Therefore, the information is acceptable because it meets the requirements of 10 CFR 52.81, 10 CFR 100.1(c), and 10 CFR 100.21(g). The staff's review of the ETE Report is in Section 13.3C.18, "Evacuation Time Estimates Analysis," of this FSER.

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

Technical Information in the Application: (10 CFR 30.32(i) and 10 CFR 40.31(j)): In Section 1.1, "License Actions Requested," of Part 1, "Administrative and Financial Information," of the COLA, the applicant requested applicable licenses under 10 CFR Parts 30 and 40 to receive, possess, and use at any time, such quantities of source, byproduct, and special nuclear material as needed to construct and operate the utilization facility. The staff issued RAI 5347 requesting additional information regarding the implementation of the emergency preparedness program, or portions of it, before the receipt, possession, or use of byproduct and source material.

In its response, May 6, 2011, the applicant stated that provisions of 10 CFR 30.32(i) and 40.31(j) are not applicable to the operation of CPNPP, Units 3 and 4. The applicant stated that no byproduct material of a physical form that is "in unsealed form, on foils or plated sources, or sealed in glass," that exceeds the quantities in Schedule C of 10 CFR 30.72 will be received, possessed, or used at CPNPP, Units 3 and 4 prior to initial fuel loading. The applicant also

stated that the request for a Part 40 license does not involve authorization to receive, possess, or use uranium hexafluoride in excess of 50 kilograms in a single container or 1000 kilograms total prior to initial fuel loading. Finally, the applicant stated that a specific commitment addressing these limitations during the period prior to the initial fuel loading and following the 52.103(g) finding is included in FSAR Subsection 12.2.1.1.10 and License conditions to control these restrictions have been proposed in Part 10 of the COLA.

Technical Evaluation: (10 CFR 30.32(i) and 10 CFR 40.31(j)): Because the applicant stated that no byproduct material has been identified that is in an unsealed form, on foils or plated sources, or sealed in glass in excess of the quantities in Schedule C of 10 CFR 30.72, the staff found that the CPNPP, Units 3 and 4 Emergency Plan, or any part of it, does not need to be implemented before the receipt, possession, or use of byproduct material. In addition, an emergency plan that meets the requirements of 10 CFR 30.32(i) is not required because the quantities do not exceed Schedule C. The staff also found that the implementation of the CPNPP, Units 3 and 4 emergency plan, or any part of it, before the receipt, possession, or use of source material was not needed because the applicant had stated that 10 CFR 40.31(j) relates to the possession of uranium hexafluoride, which will not be received, possessed, or used at CPNPP, Units 3 and 4 in excess of the quantities specified in 10 CFR 40.31(j). Since these quantities are not exceeded, an emergency plan in accordance with 10 CFR 40.31(j) for responding to the radiological hazards of an accidental release of source material and to any associated chemical hazards related to the material is not required.

13.3B.10 Post Combined License Activities

There are no post combined license activities related to SER Section 13.3B, "Emergency Planning Information in the Application," in the COL application.

13.3B.11 Conclusion

The staff reviewed the EP information required to be in the CPNPP, Units 3 and 4 COLA but not required to be part of the CPNPP, Units 3 and 4 Emergency Plan in Part 5 of the COLA. The staff's review concluded that the applicant has provided adequate information in the COLA to meet the applicable requirements in 10 CFR 30.32(i), 10 CFR 40.31(j), 10 CFR 50.33(g), 10 CFR 50.47(c)(2), 10 CFR 52.73, 10 CFR 52.77, 10 CFR 52.79, 10 CFR 52.81, 10 CFR 100.1(c), 10 CFR 100.21(g), and applicable portions of Appendix E to 10 CFR Part 50 as discussed above.

Attachment 13.3C - Onsite Emergency Plan

Introduction

The NRC evaluates emergency plans for nuclear power reactors to determine whether the plans are adequate and there is a reasonable assurance that the plan can be implemented. This Attachment to the FSER provides the results of the review of the onsite emergency plan for the proposed reactors at the CPNPP, Units 3 and 4 (CPNPP, Units 3 and 4 Emergency Plan).

CPNPP, Units 3 and 4 COL FSAR states in Section 13.3, "Emergency Planning," that the CPNPP, Units 3 and 4 Emergency Plan is contained in Part 5 of the COLA. Also included as part of the onsite emergency plan are eight appendices, which provide additional detailed information on various aspects of the CPNPP, Units 3 and 4 Emergency Plan. In addition, Part 10 of the COLA includes a set of ITAAC related to the CPNPP, Units 3 and 4 Emergency Plan.

The following section describes the staff's evaluation of the onsite emergency plan for the CPNPP site and parallels the planning standards in NUREG-0654/FEMA-REP-1, Revision 1. Compliance with the guidance in NUREG-0654/FEMA-REP-1, Revision 1, for each planning standard meets the requirements of 10 CFR 50.47(b).

13.3C.1 Assignment of Responsibility (Organizational Control)

13.3C.1.1 Regulatory Basis

In determining whether the proposed emergency plan meets the applicable regulatory requirements in 10 CFR 50.47(b)(1), the NR staff evaluated it against the detailed evaluation criteria³ in NUREG-0654/FEMA-REP-1, Revision 1. The staff also evaluated the proposed emergency plan against applicable regulatory requirements related to the area of "Assignment of Responsibility (Organization Control)," in Appendix E to 10 CFR Part 50⁴.

13.3C.1.2 Overall Response Organization

Technical Information in the Emergency Plan: [A.1.a]: Section A, "Assignment of Responsibility (Organization Control)," describes the emergency response organization, the primary responsibilities for emergency response, and concept of operations which includes preparedness, normal operations, initial emergency operations, augmented response, and recovery. State agencies, county governments and local agency support services are described. The Federal emergency response follows the National Response Framework and involves agencies such as the NRC, Department of Energy (DOE), Department of Homeland Security, and Environmental Protection Agency (EPA). Section A.1, "Emergency Organization," provides a list of participating organizations and a discussion of their roles and responsibilities.

Section A.1 also describes the coordination of emergency response actions with CPNPP, Units 1 and 2. Figure II-1, "Emergency Response Organization Interrelationships (Alert, Site Area Emergency, General Emergency)," is a block diagram showing the relationships among the organizations participating in an emergency response. Section A.1.a, "Participating

³ The bracketed [], alphanumeric designations used throughout this FSER section identify the corresponding NUREG-0654/FEMA-REP-1 evaluation criteria used by the NRC staff to determine compliance with 10 CFR 50.47(b).

⁴ Braces {} identify requirements in Appendix E to 10 CFR Part 50.

Organizations,” identifies Texas Department of State Health Services (TDSHS) Radiation Control Program (RCP) as a participating organization. In **RAI 3327, Question 13.03-2.A-1.A**, NRC staff requested additional information to clarify whether the block labeled Texas Department of Health in Figure II-1 is the same as TDSHS in Section A.1.a. In response, the applicant stated that Figure II-1 will be revised to reflect the correct name which is the Texas Department of State Health Services. The applicant provided a revised Figure II-1 in its response. The RCP of TDSHS is described in Section A.1.a. In **RAI 3327, Question 13.03-2.A-1.B**, the staff requested a discussion of whether the RCP should be shown in Figure II-1. In response, the applicant clarified that Figure II-1 identifies the interfaces between Federal, State, local, and private agencies. The RCP is part of the Texas Department of State Health Services, which is included in revised Figure II-1.

The EPA provides assistance as stated in Section A.1.b, “Concept of Operations.” In **RAI 3327, Question 13.03-2.A-1.C**, the staff requested a discussion of whether the EPA shown in Section A.1.b is a participating organization, and whether it should be listed in Section A.1.a and in Figure II-1. In its response the applicant explained that under the National Response Framework Nuclear/Radiological Incident Annex, the EPA is a Cooperating Agency and the NRC is the Coordinating Agency that would coordinate all Federal response, including requesting the EPA provide support for environmental monitoring teams and mobile radio-analytical laboratories.

Section A.1.b lists local agency support services, and Figure II-1 includes some of the listed local agency support services. In **RAI 3327, Question 13.03-2.A-1.D**, the staff requested a discussion of whether support services listed in Section A.1.b, including Walls Regional Hospital, Granbury/Hood County Emergency Medical Service (EMS), Granbury Volunteer Fire Department, Tolar Volunteer Fire Department, Indian Harbor Volunteer Fire Department, or De Cordova Bend Estates Volunteer Fire Department, should be added to Figure II-1. In its response, the applicant explained that Figure II-1 illustrates those agencies/organizations with primary responsibility for responding to the CPNPP site. Since the plant is physically located in Somervell County, Somervell County volunteer fire, rescue and EMS, and Lake Granbury Medical Center are identified in Figure II-1. Notifications and communications with other hospitals and emergency services are initiated in accordance with the Hood County Emergency Management Plan.

Letters of agreement are included in Appendix 7 for the cities of Stephenville, Cleburne, and Granbury and for the National Weather Service and the Chisholm Trail Chapter of the American Red Cross. In **RAI 3327, Question 13.03-2.A-1.E**, the staff requested a discussion regarding whether the cities of Stephenville, Cleburne, and Granbury, the National Weather Service, and the American Red Cross should be shown in Figure II-1. In its response, the applicant stated that relocation centers are located in the cities of Stephenville and Cleburne, outside of the EPZ. Communication with relocation centers in these cities will be conducted in accordance to the Hood and Somervell Counties’ Emergency Management Plan. The city of Granbury will coordinate their operations from the Hood County EOC, which is identified in Figure II-1. The National Weather Service in Ft. Worth, Texas is not a primary emergency response agency, and does not need to be included in Figure II-1. The American Red Cross has primary responsibility for sheltering and mass care in Hood and Somervell Counties outside of the EPZ and does not need to be included in Figure II-1. Communications with the Red Cross are diagrammed in the Hood and Somervell Emergency Management Plans.

{Appendix E, Section IV.A.8} Section II.A.1.b, “Concept of Operations,” states that Somervell and Hood Counties, and the State of Texas coordinate their activities through their respective

Emergency Operating Centers (EOCs) and the State of Texas EOC. Information found under “State Agencies,” in Section A.1.iv, “Augmented Response,” identifies the Commissioners of the Texas Department of Agriculture and Texas Department of State Health Services as responsible for implementing protective actions in accordance with the Texas Emergency Management Plan. Section V.G.2.c, “Authority for Evacuations,” in both the Somervell and Hood County Emergency Management Plans specifies that State law provides a County Judge or mayor authority to evacuate their jurisdictions.

Technical Evaluation: [A.1.a] As described above, the CPNPP, Units 3 and 4 Emergency Plan, identified the State, local, Federal and private sector organizations (including utilities), that are intended to be part of the overall response organization for emergency planning zones as stated in NUREG-0654/FEMA-REP-1, Revision 1. Therefore, the staff finds the clarifications and additional information provided by the applicant in response to **RAI 3327, Questions 13.03-2.A-1.B, 13.03-2.A-1.C, 13.03-2.A-1.D, and 13.03-2.A-1.E** to be **acceptable**. In response to **RAI 3327, Question 13.03-2.A-1.A**, the applicant stated that Figure II-1 will be revised to correctly name the Texas Department of State Health Services. **Confirmatory Item 13.03-18** was created to track this revision.

{Appendix E, Section IV.A.8} The staff finds that the CPNPP, Units 3 and 4 Emergency Plan, with the exception of Figure II-1, which will be revised to correctly state the Texas Department of State Health Services, adequately identifies State and/or local officials responsible for planning for, ordering, and controlling appropriate protective actions, including evacuations when necessary. With the exception of the confirmatory item identified above, the staff finds the CPNPP, Units 3 and 4 Emergency Plan acceptable because it meets the requirements in Appendix E to 10 CFR Part 50, Section IV.A.8.

13.3C.1.3 Concept of the Operations

Technical Information in the Emergency Plan: [A.1.b] Section A.1.b, “Concept of Operations,” summarizes the applicant’s concept of operations and relationships to other organizations. The concept of operations describes actions and activities for preparedness, normal operations, initial emergency operations, augmented response, and recovery. Appendix 8, Table A8-2, “NUREG-0654 Crosswalk to COL Emergency Plan, State, and Local Emergency Plans,” provides a crosswalk of NUREG-0654 Evaluation Criteria and the Emergency Plan, the State of Texas, Somervell County, and Hood County Emergency Plans. Appendix 8, “Cross Reference to Regulations, Guidance, and State and Local Plans,” states that details of the State and county plans may not yet reflect the addition of CPNPP, Units 3 and 4. In **RAI 3327, Question 13.03-2.A-2**, the NRC staff requested clarification regarding when State and county Plans will reflect the addition of CPNPP, Units 3 and 4. In its response, the applicant explained that State and local emergency response plans are constantly reviewed and updated to maintain emergency preparedness. The response activities are not sensitive to the number of reactors located on the CPNPP site. The applicant also explained that there are a limited number of references to CPNPP, Units 1 and 2 in the State plans, and none in the local emergency plans. For Criterion A.1.b, Table A8-2 references State Annex D § IV and Tab 1 § VII; and Somervell and Hood County BP § V and AW § IV, which describe their respective concepts of operation.

{Appendix E, Section III} Section A, “Assignment of Responsibility (Organization Control),” describes the emergency organization, primary responsibilities for emergency response, and provides the concept of operations which includes preparedness, normal operations, initial emergency operations, augmented response, and recovery. Section A describes the Federal,

State, county and local resources to support an emergency and discusses coordination of emergency response actions with CPNPP, Units 1 and 2.

Technical Evaluation: [A.1.b] {Appendix E, Section III} As described above, the staff finds that the CPNPP, Units 3 and 4 Emergency Plan and the submitted RAI response adequately describe the applicant's role, its concept of operations, and its relationship to the total response effort as stated in A.1.b of NUREG-0654/FEMA-REP-1 and Section III to 10 CFR Part 50 Appendix E. Therefore, the staff finds the additional information provided by the applicant in response to **RAI 3327, Question 13.03-2.A-2** to be acceptable.

13.3C.1.4 Organizational Interrelationships

Technical Information in the Emergency Plan: [A.1.c.] Section A.1.iii, "Initial Emergency Operations," describes the response to an emergency and references the block diagram in Figure II-1 "Emergency Response Organization Interrelationships," which illustrates the interrelationships of organizations participating in emergency response. Additional information was requested in **RAIs 3327, Questions 13.03-2.A-1.A through 13.03-2.A-1.E**, regarding response organizations shown or not shown in Figure II-1. Information and evaluation of the response to these RAIs can be found in Technical Information/Evaluation for 13.3C.1.2

Technical Evaluation: [A.1.c.] The staff's technical evaluation of this information and additional information provided by the applicant in responses to **RAI 3327, Questions 13.03-2.A-1.B, 13.03-2.A-1.C, 13.03-2.A-1.D, and 13.03-2.A-1.E** can be found in Technical Evaluation 13.3C.1.2 of this SE.

13.3C.1.5 Individual in Charge of Emergency Response

Technical Information in the Emergency Plan: [A.1.d] Section A.1, "Emergency Organization," identifies the Shift Manager as the individual who assumes the role of the Emergency Coordinator, if an emergency condition exists. Section A.1.d, "Individual in Charge of Emergency Response," also states that the Shift Manager assumes the role of Emergency Coordinator, which passes to the TSC Manager or other designated management staff, and to the Emergency Operations Facility (EOF) Manager when the EOF is activated. Section A.2, "Functions, Responsibilities, and Legal Basis," states that the key emergency response individuals in Offsite Response Organizations are identified by title and are established in the State and county plans. Section V.G.2.c, "Authority for Evacuations," in both the Somervell and Hood County Emergency Management Plans specifies that State law provides a County Judge or mayor with executive responsibility for emergency response and recovery operations and authority to evacuate their jurisdictions.

Technical Evaluation: [A.1.d] The staff finds that the CPNPP, Units 3 and 4 Emergency Plan adequately identifies a specific individual by title that will be in charge of the emergency response. The staff finds this information acceptable because it conforms to the guidance criteria identified in A.1.d of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.1.6 24-Hour Response Capability

Technical Information in the Emergency Plan: [A.1.e.] Section A.4, "Continuous Operations," identifies the Emergency Coordinator or EOF Manager as the individual responsible for ensuring continuity of resources during emergency operations. Section A.1.e, "24 Hour Emergency Response Capability," states that capability for 24-hour response,

including manning of communications links is maintained. Section B.1, "Onsite Emergency Organization," identifies the Operations Shift as being responsible for providing 24-hour per day emergency response.

Technical Evaluation: [A.1.e.] The staff finds that the CPNPP, Units 3 and 4 Emergency Plan describes provisions for 24-hour per day emergency response, including 24-hour per day manning of communications links. The staff finds this acceptable because it conforms to the guidance in A.1.e of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.1.7 Written Agreements

Technical Information in the Emergency Plan: [A.3] Appendix 7, "Certification Letters and Letters of Agreement," contains copies of the certification letters and letters of agreement established between the applicant, State, local government agencies, and private sector organizations that will be supporting the emergency response effort. The letters for the State and Somervell and Hood Counties indicate that specific arrangements will be established in binding agreements if and when construction and operation proceed. Many of the local government agencies and private sector organizations, including the City of Stephenville, City of Cleburne, Lake Granbury Medical Center, DCBE/Acton Volunteer Fire Department, Walls Regional Hospital, Somervell County Sheriff's Office, GHC EMS, Somervell County Volunteer Fire, Rescue and EMS, American Red Cross, Granbury Volunteer Fire Department, City of Granbury, Tolar Volunteer Fire Department, Indian Harbor Volunteer Fire/EMS Department, National Weather Service, and Hood County Sheriff's Office, state their intention to extend their existing agreements with the applicant recognizing that formal letters of agreement will be made if and when the applicant proceeds with construction and operation. In **RAI 3327, Question 13.03-2.A-3.A**, the staff requested that the applicant propose an ITAAC that describes emergency measures to be provided, implementation criteria, and information exchange arrangements to be incorporated into binding agreements for the State and counties if and when construction and operation proceeds. In response, the applicant stated that emergency planning arrangements have been established between the applicant, the State of Texas, and Hood and Somervell Counties for the emergency response effort. COLA Part 10 will be revised to include a proposed license condition regarding Letters of Agreement with State and local agencies regarding emergency planning responsibilities.

Technical Evaluation: [A.3] As described above, the CPNPP, Units 3 and 4 Emergency Plan has included written agreements referring to the concept of operations developed between Federal, State, and local agencies and other support organizations having an emergency response role with the EPZ as stated in evaluation criterion A.3 of NUREG-0654/FEMA-REP-1, Revision 1. In its response to **RAI 3327, Question 13.03-2.A-3.A**, the applicant stated that COLA Part 10 will be revised to include a proposed licensee condition regarding Letters of Agreement identifying the specific nature of arrangements for the emergency response between the applicant, Governors Division of Emergency Management, Texas Department of State Health Services, Hood County Judge, and Somervell County Judge. The applicant also stated that the Letters of Agreement will certify the agency's concurrence with the emergency action levels described in the CPNPP, Units 3 and 4 Emergency Plan Procedure, "Assessment of Emergency Action Levels, Emergency Classification and Plan Activation." However, the staff modified the proposed license condition to exclude the State and local agencies agreement on the Emergency Action Level scheme. This is because a separate license condition has been developed requiring that the EALs be discussed and agreed upon with State and local officials. The staff finds this acceptable because it conforms to evaluation criteria A.3 of NUREG-

0654/FEMA-REP-1. Additional information related to the staff's evaluation of the applicants proposed license conditions is contained in Section 13.3.4 of this SE.

13.3C.1.8 Operations for a Protracted Period

Technical Information in the Emergency Plan: [A.4] Section A.4, "Continuous Operations," identifies the Emergency Coordinator or EOF Manager as the individual responsible for ensuring continuity of resources during emergency operations. Appendix 8, Table A8-2, states NUREG-0654 evaluation criterion A.4 is addressed in TEMP § VIII.E Annex D, Tab 1, Ch. 1 § V and Procedure 13 § IV.C.2; Somervell County Basic Plan § VI.B.5.i.2.c and Annex N (AN) § VI.B.3.b; and Hood County Basic Plan § VI.B.5.i.2.c and AN § VI.B.4.b.

The State plan references TEMP § VIII.E Annex D, Tab 1, Ch.1 § V, which states that for a General Emergency, response team personnel will be activated and maintain a 24-hour operational capability. This action is initiated by the Bureau Chief of the Bureau of Radiation Control or designee.

County plan references (Basic Plan § VI.B.5.i.2.c) state that emergency tasks include maintain the EOC in an operating mode. This responsibility is assigned to the County Judge/Mayor in the Somervell County Plan and to the Granbury City Manager and EMC in the Hood County Plan. Hood County reference AN § VI.B.4.b and Somervell County reference AN § VI.B.3.b state that responsible agencies will provide personnel to staff the Incident Command Post (ICP) and the EOC.

Technical Evaluation: [A.4] The staff finds that the CPNPP, Units 3 and 4 Emergency Plan describes provisions for operations for a protracted period. This is acceptable because it conforms to the guidance in A.4 of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.1.9 Conclusion

The staff has reviewed the CPNPP, Units 3 and 4 Emergency Plan and the applicant's responses to **RAI 3327, Questions 13.03-2.A-1 (A, B, C, D, & E), A-2, and A-3.A** in regards to Planning Standard A, Organizational Control of NUREG-0654/FEMA-REP-1. The staff concludes that the information provided in the COLA and the applicant's responses to **RAI 3327, Question 13.03-2.A-1.A**, which is being tracked as **Confirmatory Items 13.03-18**, and **RAI 3327, Question 13.03-2.A-3.A** are consistent with the guidelines in planning standard A of NUREG-0654/FEMA-REP-1. Therefore, the information is acceptable and meets the relevant requirements of 10 CFR 50.47(b)(1) an Sections III and IV.A of Appendix E to 10 CFR Part 50, insofar as the information describes the essential elements of advanced planning and the provisions made to cope with emergency situations.

13.3C.2 Onsite Emergency Organization

13.3C.2.1 Regulatory Basis

In determining whether the proposed emergency plan meets the applicable regulatory requirements in 10 CFR 50.47(b)(2), the staff evaluated it against the detailed evaluation criteria in NUREG-0654/FEMA-REP-1, Revision 1. The staff also evaluated the proposed emergency plan against applicable regulatory requirements related to the area of "Onsite Emergency Organization," in Appendix E to 10 CFR Part 50.

13.3C.2.2 Normal Plant Operations Organization

Technical Information in the Emergency Plan: {Appendix E, Section IV.A.1} Section B, "Onsite Emergency Organization," describes the Operations Shift personnel as responsible for the safe operation of the plant, providing for 24-hour per day emergency response capability. The minimum staff required to conduct routine and immediate emergency operations at the site is maintained consistent with Appendix E of 10 CFR 50. Section B.1, "Onsite Emergency Organization," describes the responsibilities of individuals on the Operations Shift in responding to emergencies. The Shift Manager is identified as the individual who initially assesses and declares the emergency and assumes the duties and responsibilities of Emergency Coordinator. Section B.1 states that the applicant maintains the minimum staff required to conduct routine and immediate emergency operations at the site. Section B.1 also states that the Operations Shift is staffed to be self-reliant for a period of time to allow for notification of other personnel and staffing and activation of emergency response facilities. Table II-2, "Plant Staffing Requirements for Emergencies," summarizes augmentation of response capabilities. Interface relationships among onsite and offsite activities are illustrated in Figure II-1, "Emergency Response Organization Interrelationships."

Technical Evaluation: {Appendix E, Section IV.A.1} The staff finds that the CPNPP, Units 3 and 4 Emergency Plan adequately describes the normal plant operating organization. This is acceptable because it meets the requirements in Appendix E, Section IV.A.1 to 10 CFR Part 50.

13.3C.2.3 Onsite Emergency Organization

Technical Information in the Emergency Plan: [B.1] {Appendix E, Section IV.A.2.b} Section A.1.b, "Concept of Operations," describes normal operations conducted under authority of the Shift Manager and directed from the Control Room. Section B.1, "Onsite Emergency Organization," specifies the onsite emergency organization, and references the FSAR Section 13.1, "Organizational Structure of Applicant," for a description of the operating organization. FSAR Table 13.1-201, "Staffing Plan for CPNPP Units 3 & 4," provides estimated staffing requirements for the design review, construction, preoperational, and operational phases of the plant.

Technical Evaluation: [B.1] {Appendix E, Section IV.A.2.b} The staff finds that the CPNPP, Units 3 and 4 Emergency Plan provides an adequate description of the onsite emergency organization of plant staff personnel for all shifts and its relation to the responsibilities and duties of the normal staff complement. This is acceptable because it meets the requirements of Appendix E, Section IV.A.2.b to 10 CFR Part 50 and conforms to the guidance identified in B.1 to NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.2.4 Designation of an Emergency Coordinator

Technical Information in the Emergency Plan: [B.2] Section B.1, “Onsite Emergency Organization,” identifies the Shift Manager as assuming the duties and responsibilities of Emergency Coordinator at the onset of an event. Section B.2, “Emergency Coordinator,” states that the Shift Manager position is staffed continuously, and will assume the role of Emergency Coordinator upon event classification, and has the responsibility and authority to initiate required emergency response actions, including notification of affected Federal, State, and local authorities and provision of Protective Action Recommendations (PARs) to offsite authorities.

Technical Evaluation: [B.2] The staff finds that the CPNPP, Units 3 and 4 Emergency Plan adequately identifies a designated individual as emergency coordinator, who shall be on shift at all times, and who shall have the authority and responsibility to immediately and unilaterally initiate any emergency actions, including providing protective action recommendations to authorities responsible for implementing offsite emergency measures. This is acceptable because it conforms to evaluation criteria B.2 of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.2.5 Line of Succession for the Emergency Coordinator

Technical Information in the Emergency Plan: [B.3] Section B.3, “Emergency Coordinator Line of Succession,” identifies the line of succession for the Emergency Coordinator, which includes the Unit Supervisor if the Shift Manager is rendered unable to act as Emergency Coordinator, the TSC Manager, and the EOF Manager. Section B.3 states that a trained, higher level member of the applicant’s management staff may assume these responsibilities after becoming fully familiar with pertinent plant and radiological conditions, status of emergency response/accident mitigation efforts, and determining that Emergency Response Facilities (ERFs) are staffed adequately to allow that individual to perform the designated Emergency Coordinator functions.

Technical Evaluation: [B.3] The staff finds that the CPNPP, Units 3 and 4 Emergency Plan adequately identifies a line of succession for the emergency coordinator position, and identifies the specific conditions for higher level utility officials assuming this function. This is acceptable because it conforms to evaluation criteria B.3 of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.2.6 Responsibilities of the Emergency Coordinator

Technical Information in the Emergency Plan: [B.4] {Appendix E, Section IV.A.2.c} Section B.2, “Emergency Coordinator,” and Section B.4, “Emergency Coordinator Responsibilities,” identifies the Emergency Coordinator as having responsibility and authority to notify affected Federal, State, and local authorities and to provide PARs to offsite authorities. Section B.4 lists specific responsibilities which shall not be delegated to other positions, including recommending the use of potassium iodide, authorizing reentry into evacuated onsite areas, authorizing personnel exposures in excess of 10 CFR 20 limits, making PARs to offsite authorities, and notification of Texas and Somervell and Hood County authorities responsible for offsite emergency response. In Table II-2, “Plant Staffing Requirements for Emergencies,” the Shift Manager, who assumes the role of Emergency Coordinator, is listed as having the responsibility for approving the release of information to the public regarding an emergency at CPNPP. In its response **RAI 3327, Question 13.03-3.B-4.B**, the applicant was requested to explain why this information was not included in the detailed responsibilities of the Emergency Coordinator in Section B of the CPNPP, Units 3 and 4 Emergency Plan and whether this responsibility can be delegated. In response, the applicant explained that the principal

responsibilities of the Shift Manager will be revised in Subsection II.B.1 of the Units 3 and 4 Emergency Plan to include approving the release of public information. Additionally, the applicant stated that the Shift Manager can delegate this responsibility.

{Appendix E, Section IV.A.2.a} Section B, "Onsite Emergency Organization," describes the Operations Shift personnel as responsible for the safe operation of the plant, providing for 24-hour per day emergency response capability. Section B.1, "Onsite Emergency Organization," identifies the Shift Manager as assuming the duties and responsibilities of Emergency Coordinator at the onset of an event. Section B.2, "Emergency Coordinator," states that the Shift Manager position is staffed continuously, assumes the role of Emergency Coordinator upon event classification, and has the responsibility and authority to initiate required emergency response actions, including notification of affected Federal, State, and local authorities and provision of PARs to offsite authorities.

Technical Evaluation: [B.4] {Appendix E, Section IV.A.2.c} As described above, the staff finds that the CPNPP, Units 3 and 4 Emergency Plan adequately establishes the functional responsibilities assigned to the emergency coordinator, and clearly specifies which responsibilities may not be delegated to other elements of the emergency organization as stated in evaluation criterion B.4 of NUREG-0654/FEMA-REP-1, Revision 1 and 10 CFR Part 50 Appendix E, Section IV.A.2.c. In its response to **RAI 3327, Question 13.03-3.B-4.B**, the applicant stated that the principal responsibilities of the Shift Manager will be revised in Subsection II.B.1 of the Units 3 and 4 Emergency Plan to include approving the release of public information. **Confirmatory Item 13.03-20** was created to track this revision.

{Appendix E, Section IV.A.2.a} The staff finds that the CPNPP, Units 3 and 4 Emergency Plan together with the applicant's response to **RAI 3327, Question 13.03-3.B-4.B**, which is being tracked as **Confirmatory Item 13.03-20**, adequately describes the onsite emergency response organization with a detailed discussion of the authorities, responsibilities, and duties of the individual(s) who will take charge during an emergency. This is acceptable because it meets the requirements in Appendix E to 10 CFR Part 50, Section IV.A.2.a.

13.3C.2.7 On-shift and Augmentation Emergency Response Staff

Technical Information in the Emergency Plan: [B.5] {Appendix E, Section IV.A.4} The on-shift responsibilities for emergency response are defined in Section B, "Onsite Emergency Organization," of the CPNPP, Units 3 and 4 Emergency Plan. Augmentation of response capabilities is also described. Section B also states that staffing for initial accident response in key functional areas is mainlined continuously during the course of an emergency. Section B.5, "Plant Emergency Response Positions," of the CPNPP, Units 3 and 4 Emergency Plan states that Luminant maintains emergency response staffing capability consistent with Table II-2, "Plant Staffing Requirements for Emergencies," which is based on the guidance provided in NUREG-0654/FEMA-REP-1, and the provisions of the emergency plans of currently licensed Luminant nuclear facilities.

In Table II-2, the Radwaste Operator, Mechanic, Electrician, and I&C Technician are identified as minimum staffing positions which may be provided by on-shift personnel or augmented by personnel assigned other functions. In its response to **RAI 3327, Question 13.03-3.B-4.A**, the applicant was requested to discuss whether the job functions of the Radwaste Operator, Mechanic, Electrician, and I&C Technician are collateral duties. In response, the applicant explained that the Radwaste Operator would be assigned from a shift complement of the Nuclear Equipment Operators. However, the applicant explained that once the Radwaste

Operator, Mechanic, Electrician, and I&C Technician are assigned Emergency Response Organization (ERO) duties, they would not have any responsibilities which would affect their duty or ability to respond to the event.

In **RAI 3327, Question 13.03-3.B-4.C**, the staff asked the applicant to discuss the on-shift and augmented staffing levels provided in Table II-2 for each unit. In its response, the applicant clarified that the Emergency Plan establishes the controlling requirements for staffing, and the Shift Manager is not shared between CPNPP, Units 3 and 4. The applicant also explained that the Shift Technical Advisor, Radiation Protection Technician and Chemistry Technician are shared between the CPNPP, Units 3 and 4 according to Note "g" of FSAR Table 13.1-202, "Staffing Plan for CPNPP Units 3 & 4." The applicant further explained that these three positions would respond to the affected unit during an emergency, and any deficit in staffing for the unaffected unit would be remedied by Technical Specifications. In **RAI 3327, Question 13.03-3.B-4.D**, the NRC staff asked the applicant to discuss whether the personnel assigned to the fire brigade will also perform ERO functions as collateral duties. In its response, the applicant stated that the fire brigade members are designated in accordance with procedures at the beginning of a shift. During an emergency involving a fire, the fire brigade members would be dedicated to fire response, and other qualified personnel would perform on-shift ERO functions.

In Table II-2 augmentation staffing times are 40 minutes and 70 minutes versus 30 minutes and 60 minutes as specified in Table B-1, "Minimum Staffing Requirements for NRC Licensees for Nuclear Power Plant Emergencies," of NUREG-0654/FEMA-REP-1. In **RAI 3327, Question 13.03-3.B-4.E**, the applicant was requested to provide staffing times consistent with NUREG-0654/FEMA-REP-1, or discuss why the extended augmentation times are acceptable for each function/task. In its response, the applicant stated that Table II-2 will be revised to 30 minutes and 60 minutes to be consistent with the staffing times in Table B-1 of NUREG-0654/FEMA-REP-1.

Several positions (Mechanic, Electrician, I&C Technician) are identified with a note (f) which states that on-shift staffing is provided in Technical Specifications (TS) for these positions. In **RAI 3327, Question 13.03-3.B-4.F**, the applicant was requested to revise Table II-2 to identify the on-shift maintenance (Mechanical, Electrical, Instrumentation and Control) minimum staffing available for repair and corrective actions during an emergency. In its response, the applicant explained that Table II-2 will be revised for the Mechanical, Electrical, Instrumentation and Control positions to reference footnote 'a,' which states that these positions may be provided by on-shift or augmentation personnel.

The on-shift Radiation Protection Technician (RPT) personnel responsible for onsite surveys and in-plant surveys are identified in Table II-2 with a note (f) that states the on-shift staffing is provided in TS for these positions. TS state that a RPT shall be onsite when fuel is in the reactor, and a single RPT may fulfill the requirements for both units. In addition, Table II-2 identifies two RPTs responsible for protective actions as part of the Radiological Accident Assessment and Support function that may be provided by on-shift or augmentation personnel assigned other functions. In **RAI 3327, Question 13.03-3.B-4.G-1**, the applicant was requested to clarify footnote (f) regarding RPT staffing present onsite when both reactors are defueled and discuss who would perform the functions of in-plant surveys, onsite surveys, and protective actions if a radiological emergency occurred during this time. In its response, the applicant stated at least one RPT will be onsite when fuel is present and Table II-2, footnote (f), identifies that on-shift staffing is provided in TS for these positions. The applicant stated that any emergencies that occurred when the reactor core was off-loaded which would result in the need

for an RPT would be responded to in accordance with the Emergency Plan and Emergency Planning Procedures (EPPs).

In **RAI 3327, Question 13.03-3.B-4.G-2**, the applicant was requested to clarify the on-shift RPT staff that will perform in-plant surveys, onsite surveys, and protective actions as part of the overall Radiological Accident Assessment and Support function. In its response, the applicant stated EPP 205, "Activation and Operation of the Operations Support Center (OSC)," describes the responsibilities of the on-shift RPT staff. The approach for CPNPP, Units 3 and 4, Plant Emergency Response Positions will follow that of CPNPP, Units 1 and 2, and that the duties and responsibilities of these positions are provided in EPPs.

In **RAI 3327, Question 13.03-3.B-4.G-3**, the applicant was requested to explain why there are no 40-minute augmentation RPT personnel to perform onsite surveys. In its response, the applicant clarified that the term "onsite surveys" is used by the applicant for onsite (out-of-plant) surveys. The applicant explained in its response that Table II-2 indicates two RPTs are provided for on-shift "Radiological Accident Assessment and Support of Operational Accident Assessment," which includes onsite surveys.

Section B of the CPNPP, Units 3 and 4 Emergency Plan states that onsite Survey Teams initially will be composed of at least two members, and that at least one will be a RPT. In **RAI 3327, Question 13.03-3.B-4.H**, the applicant was requested to clarify who will perform the role of the second team member based regarding the minimum shift staffing provided in Table II-2. In its response, the applicant stated EPP 309, "Onsite/In-Plant Radiological Surveys and Offsite Radiological Monitoring," states that onsite Survey Teams initially are composed of at least two members, one of which is the RPT. The applicant explained that any available onsite personnel permitted to access Radiation Areas can serve as the second member of the team.

Section B of the CPNPP, Units 3 and 4, Emergency Plan states that Chemistry Technicians will perform in-plant chemistry sampling and analysis and function as part of the First Aid Team if there is an emergency at CPNPP until relieved by other members of the ERO. Table II-2 identifies the on-shift minimum chemistry staffing with a note (f), which states that the on-shift staffing is provided in TS for these positions. TS do not require chemistry personnel to be onsite when both units are in Modes 5, 6, or defueled. In **RAI 3327, Question 13.03-3.B-4.I-1**, the applicant was requested to discuss who will perform the in-plant chemistry sampling and analysis, and participate as part of the First Aid Team if both units are in Modes 5, 6, or defueled, if there is an emergency at CPNPP. In its response, the applicant explained that Table II-2 will be revised to reference footnote 'a,' which identifies that these positions may be provided by on-shift or augmentation personnel. In **RAI 3327, Question 13.03-3.B-4.I-2**, the applicant was requested to provide the rationale for assigning Chemistry technicians a collateral task regarding the first aid team. In its response, the applicant explained that, consistent with Table B-1 of NUREG-0654, Rescue Operations and First-Aid may be provided by shift personnel assigned other functions. In the applicant's experience with operating CPNPP, Units 1 and 2, this responsibility has been assigned to the on-shift Chemistry Technician.

Table II-2 in the CPNPP, Units 3 and 4, Emergency Plan indicates that the on-shift Shift Technical Advisor (STA) will perform the major tasks of dose assessment and technical support. In addition, the STA position in Table II-2 is identified with note (a), which states that these tasks may be provided by on-shift or augmentation personnel assigned other functions. Footnote (e) provided in FSAR Table 13.1-202, "Minimum Shift Crew Composition," states that the STA position may be filled by an on-shift SRO provided that an individual meets the dual role requirements described in the Commission Policy Statement regarding Engineering Expertise

On-Shift and has dose assessment capability. Section B of the Emergency Plan states that the STA provides engineering expertise and advice regarding plant transient analysis, accident mitigation, core/thermal hydraulics, and other matters related to operational safety, including dose assessment. In **RAI 3327, Question 13.03-3.B-4.J-1**, the applicant was requested to explain the rationale for assigning the on-shift STA the potentially competing responsibilities of dose assessment and Engineering Technical Support. In its response, the applicant stated that the roles of dose assessment and Engineering Technical Support are complimentary. The applicant explained that the STA has situational awareness and understanding of the plant conditions so that he/she can quickly fulfill the dose assessment role, and the STA is trained to operate the computer-based dose assessment model.

In **RAI 3327, Question 13.03-3.B-4.J-2**, the applicant was requested to discuss the on-shift compensation for providing Core/Thermal Hydraulics expertise or add an augmentation responder to Table II-2 of the CPNPP, Units 3 and 4 Emergency Plan. In its response, the applicant stated that the Core/Thermal Hydraulics area of expertise is a member of the TSC Engineering Team. The applicant referred to EPP-204, "Activation and Operation of the Technical Support Center (TSC)," for the responsibilities of the Engineering Team which include assessing core thermal hydraulics.

Table B-1, "Minimum Staffing Requirements for NRC Licensees for Nuclear Power Plant Emergencies," of NUREG-0654/FEMA-REP-1 identifies the need to augment the Electrical/I&C Maintenance capability within 30 minutes. In **RAI 3327, Question 13.03-3.B-4.K**, the applicant was asked to explain why Table II-2 does not include this capability. In its response, the applicant stated that Table II-2 will be revised to reflect the ability to augment the Electrical/I&C Maintenance capability within 30 minutes.

Table B-1 of NUREG-0654/FEMA-REP-1 identifies the need for Electrical and Mechanical Technical support within 60 minutes. In **RAI 3327, Question 13.03-3.B-4.L**, the applicant was requested to discuss the electrical and mechanical technical expertise of the four TSC Engineering team members identified as 70-minute augmentation staff in Table II-2. In its response, the applicant stated that Table II-2 of the Emergency Plan will be revised to reflect the Electrical and Mechanical Technical Support availability within 60 minutes.

Technical Evaluation: [B.5] {Appendix E, Section IV.A.4} As described above, the staff finds that the clarifications and additional information provided by the applicant in responses to **RAI 3327 Questions 13.03-3.B-4A-L** to be acceptable. However, the applicant stated in its response to **RAI 3327 Questions 13.03-3B-4.B, 13.03-3B-4.E, 13.03-3B-4.F, 13.03-3B-4.I.1, 13.03-3B-4.K, and 13.03-3B-4.L** that revisions to the emergency plan would be made to reflect these clarifications and additional information. As a result, the staff created the confirmatory Items listed below to track these revisions. For the reasons explained above, the CPNPP, Units 3 and 4 Emergency Plan and the applicant's responses to **RAI 3327, Questions 13.03-3B-4.B, 13.03-3B-4.E, 13.03-3B-4.F, 13.03-3B-4.I.1, 13.03-3B-4.K, and 13.03-3B-4.L**, which are being tracked as confirmatory items, specify the positions or titles and major tasks to be performed by persons to be assigned to the functional areas of emergency activity including augmentation times. For emergency situations, specific assignments were made for all shifts and for plant staff members, both onsite and away from the site. This is acceptable because it conforms to the guidance criteria identified in B.5 of NUREG-0654/FEMA-REP-1 and 10 CFR Part 50 Appendix E, Section IV.A.4.

In its response to **RAI 3327, Question 13.03-3B-4.B**, the applicant stated that the principal responsibilities of the Shift Manager will be revised in Subsection II.B.1 to include approving the release of public information. **Confirmatory Item 13.03-20** was created to track this revision.

In its response to **RAI 3327, Question 13.03-3B-4.E**, the applicant stated that Table II-2 will be revised to 30 minutes and 60 minutes. **Confirmatory Item 13.03-21** was created to track this revision.

In its response to **RAI 3327, Question 13.03-3B-4.F**, the applicant stated that Table II-2 will be revised for the Mechanical, Electrical, Instrumentation and Control positions to reference that these positions may be provided by on-shift or augmentation personnel. **Confirmatory Item 13.03-22** was created to track this revision.

In its response to **RAI 3327, Question 13.03-3B-4.I.1**, the applicant stated Table II-2 will be revised for the Chemistry Technician to reference that this position may be provided by on-shift or augmentation personnel. **Confirmatory Item 13.03-22** was created to track this revision.

In its response to **RAI 3327, Question 13.03-3B-4.K**, the applicant stated that Table II-2 will be revised to reflect the ability to augment the Electrical/I&C Maintenance capability within 30 minutes. **Confirmatory Item 13.03-21** was created to track this revision.

In its response to **RAI 3327, Question 13.03-3B-4.L**, the applicant stated that Table II-2 of the Emergency Plan will be revised to reflect the Electrical and Mechanical Technical Support availability within 60 minutes. **Confirmatory Item 13.03-21** was created to track this revision.

13.3C.2.8 Interfaces Between Functional Areas

Technical Information in the Emergency Plan: [B.6] Section B.6, "Interfaces Between Functional Areas," states that interfaces among Emergency Response Facilities, corporate support, and State and county government response organizations are illustrated in the block diagram of Figure II-1, "Emergency Response Organization Interrelationships." Figure II-1 includes two TSCs, two OSCs, and the EOF, as well as local services and State and local government organizations.

Block diagrams of the details of internal organizational interfaces, including the TSC, OSC, EOF, and Joint Information Center (JIC) are provided in a series of figures including Figure II-2, "Emergency Response Organization - Shift Manager as Emergency Coordinator," Figure II-3, "Emergency Response Organization - Technical Support Center Manager as Emergency Coordinator," Figure II-4, "Emergency Response Organization - Operations Support Center," and Figure II-5, "Emergency Response Organization - Emergency Operations Facility Manager as Emergency Coordinator." Section B.1, "Onsite Emergency Organization," describes the responsibilities of the Shift Manager, STA, Control Room Communications, RPT, Chemistry Technicians, Security Shift Supervisor, and three Emergency Teams (Emergency Repair and Damage Control, Fire Brigade, and First Aid).

The Security Shift Advisor is described in Section B.1. In **RAI 3327, Question 13.03-3.B-3.A** the staff requested information regarding why the security function is not included in Figure II-2. In its response, the applicant stated the Security Shift Supervisor position will be added to Figure II-2. The Emergency Repair & Damage Control Emergency Team are described in Section B.1. In **RAI 3327, Question 13.03-3.B-3.B**, the staff requested a description of whether the function of Emergency Repair and Damage Control (ERDC) is represented by the entry for

Maintenance Personnel in Figure II-2. In its response, the applicant clarified that Maintenance Personnel, as identified in Figure II-2, perform the ERDC function until the OSC is manned. Figures II-3 and II-5 include a block for Communicators, and Figure II-4 includes a block for Team Communicator. In **RAI 3327, Question 13.03-3.B-3.C**, the staff requested a description of the responsibilities of Communicators assigned to the TSC and EOF, and of the Team Communicator in the OSC. In its response, the applicant explained that Subsection II.B.5 of the emergency plan will be revised to reference the EPPs that include the duties and responsibilities of the communicators and other plant positions. Figure II-3 and II-5 identifies an EP Advisor. In **RAI 3327, Question 13.03-3.B-3.D**, the staff requested a description of the functional responsibilities of the EP Advisor. In its response, the applicant explained that the Emergency Planning Advisor assists the ERO activation of the TSC and provides expertise to TSC personnel concerning CPNPP and offsite supporting emergency facilities' capabilities, communications capabilities, personnel and equipment resources, and procedural requirements. This information will be added to Subsection II.B.5 of the Emergency Plan.

Section B.5, "Plant Emergency Response Positions," includes a description of Onsite Survey Teams dispatched from the OSC. In **RAI 3327, Question 13.03-3.B-3.E**, the staff requested additional information to clarify whether the RPTs shown in Figure II-4 are the same as Onsite Survey Teams described in Section B.5. In its response, the applicant stated that the RPTs shown in Figure II-4 are equivalent to Onsite Survey Teams which are described in Section II.B.5. The applicant will revise Figure II-4 to include "Onsite Survey Teams." In **RAI 3327, Question 13.03-3.B-3.F**, the staff requested additional information regarding responsibilities for Board Recorders, Clerical Support, Manpower Coordinator, Procurement Coordinator, and Contracts Coordinator shown in Figures II-3, II-4, and II-5. In its response, the applicant explained that Subsection II.B.5 of the emergency plan will be revised to reference the EPPs that include the duties and responsibilities of these and other plant positions.

Technical Evaluation: [B.6] As described above, the staff finds the clarifications and additional information provided by the applicant in response to **RAI 3327, Questions 13.03-3.B-3.A-F acceptable**. However, the applicant stated in its responses to **RAI 3327, Questions 13.03-3B-3.A, 13.03-3B-3.C, 13.03-3B-3.D, 13.03-3B-3.E, and 13.03-3B-3.F**, that revisions to the emergency plan would be made. As a result, the staff created the confirmatory items listed below to track these revisions. For the reasons explained above, the staff finds that the CPNPP, Units 3 and 4, Emergency Plan, and the applicant's responses to **RAI 3327, Questions 13.03-3B-3.A, 13.03-3B-3.C, 13.03-3B-3.D, 13.03-3B-3.E, and 13.03-3B-3.F**, which are being tracked as confirmatory items, specify the interfaces between and among the onsite functional areas of emergency activity, licensee headquarters support, local services support, and State and local government response organizations. This is consistent with the guidance identified in evaluation criterion B.6 of NUREG-0654/FEMA-REP-1.

In its response to **RAI 3327, Question 13.03-3B-3.A**, the applicant stated that the Security Shift Supervisor position will be added to Figure II-2. **Confirmatory Item 13.03-23** was created to track this revision.

In its response to **RAI 3327, Question 13.03-3B-3.C**, the applicant stated that Subsection II.B.5 of the emergency plan will be revised to reference the EPPs that include the duties and responsibilities of the communicators and other plant positions. **Confirmatory Item 13.03-24** was created to track this revision.

In its response to **RAI 3327, Question 13.03-3B-3.D**, the applicant stated that the information will be added to Subsection II.B.5 of the Emergency Plan describing that the Emergency

Planning Advisor assists the ERO activation of the TSC and provides expertise to TSC personnel concerning Comanche Peak and offsite supporting emergency facilities' capabilities, communications capabilities, personnel and equipment resources, and procedural requirements. **Confirmatory Item 13.03-25** was created to track this revision.

In its response to **RAI 3327, Question 13.03-3B-3.E**, the applicant will revise Figure II-4 to include "Onsite Survey Teams." **Confirmatory Item 13.03-26** was created to track this revision.

In its response to **RAI 3327, Question 13.03-3B-3.F**, the applicant stated that Subsection II.B.5 of the emergency plan will be revised to reference the EPPs that include the duties and responsibilities of Board Recorders, Clerical Support, Manpower Coordinator, Procurement Coordinator, and Contracts Coordinator and other plant positions. **Confirmatory Item 13.03-24** was created to track this revision.

13.3C.2.9 Corporate Support

Technical Information in the Emergency Plan: [B.7] {Appendix E, Section IV.A.3} Section B.7, "Corporate (offsite) Support for the Plant Staff," states that the applicant is fully committed to providing resources to assist the ERO in the areas of public information services, materials procurement services, contract manpower and construction services, legal and insurance services, and additional technical support, but does not specifically describe by position and function headquarters personnel who will be sent to the plant site to augment the ERO. The applicant states that this arrangement preempts the need for a separate organization of offsite corporate personnel to be identified. In **RAI 3327, Question 13.03-3.B-1**, the staff requested that the applicant describe, by position and function, how the ERO will be effectively staffed (24 hours) without the use of offsite corporate support. In its response, the applicant stated that the offsite corporate support functions are performed routinely by personnel and departments involved, and are not specific to the emergency plan.

Table II-2, "Plant Staffing Requirements for Emergencies," identifies plant staffing requirements for notifications and communications with local, State, and Federal personnel. Table II-2, "Plant Staffing Requirements for Emergencies," contains staff augmentation requirements including functional areas and tasks for logistics and release of public information.

Technical Evaluation: {B.7} {Appendix E, Section IV.A.3} As described above, the staff finds that the CPNPP, Units 3 and 4, Emergency Plan has described who in the corporate management, administrative, and technical support personnel will augment the plant staff during emergency events. This is acceptable because it conforms to evaluation criterion B.7 identified NUREG-0654/FEMA-REP-1, Revision 1 and the requirements of 10 CFR Part 50 Appendix E, Section IV.A.3. The staff finds the additional information and textual revisions submitted in response to **RAI 3327, Question 13.03-3.B-1** to be acceptable.

13.3C.2.10 Contractor and Private Organizations Support

Technical Information in the Emergency Plan: [B.8] {Appendix E, Section IV.A.5} Section B.8, "Support from Contractor and Private Organizations," identifies Mitsubishi Nuclear Energy Systems, Inc., Institute of Nuclear Power Operations (INPO), South Texas Project, and American Nuclear Insurers (ANI) as supporting contractor and private organizations. Section B.7, "Corporate (offsite) Support for the Plant Staff," states that the applicant is fully committed to providing resources to assist the ERO in the areas of public information services, materials procurement services, contract manpower and construction services, legal and insurance

services, and additional technical support, but does not specifically describe by position and function headquarters personnel who will be sent to the plant site to augment the ERO. The applicant states that this arrangement preempts the need for a separate organization of offsite corporate personnel to be identified. In **RAI 3327, Question 13.03-3.B-2**, the staff requested details regarding other employees and non-employees in supporting organizations and their special qualifications by position and function to be performed that may be called upon for assistance during emergencies. In its response, the applicant describes that individuals who are not members of the ERO, but who may be called upon for assistance, are many and varied. The response provides examples of types of onsite personnel and explains the reasoning that these positions are not included in the emergency plan. The applicant further explains that a procedure that includes information similar to the “Emergency Preparedness and Training,” procedure TRA-105 for CPNPP, Units 1 and 2 will be developed for CPNPP, Units 3 and 4. In RAI 4579, Question 13.3-38, tracked as **Open Item 13.03-08 in this SE**, the staff requested that the applicant identify, by position and function to be performed, other employees of the licensee with special qualifications for coping with emergency conditions that may arise. In its response, the applicant explained that Sections II.B.1, II.B.2, and II.B.5 of the Emergency Plan identify the positions by title, and the responsibilities, of the ERO positions. The applicant explained that these positions provide sufficient management and personnel to staff the ERO and implement its intended emergency mitigation functions. The applicant explained that the types of additional resources that may be called upon for additional support, such as public information, materials procurement, contract manpower and construction, and legal and insurance support, do not require a formal Corporate Emergency Support Organization and are typical functions necessary for normal conduct of business for a nuclear utility.

Technical Evaluation: [B.8] {Appendix E, Section IV.A.5} As described above, the staff finds that the CPNPP, Units 3 and 4, Emergency Plan and the applicant’s response to **RAI 4579, Question 13.3-38**, previously tracked as **Open Item 13.03-08**, and currently tracked by the staff as **Confirmatory Item 13.03-67**, adequately specifies the contractor and private organizations that may be requested to provide technical assistance to, and augmentation of, the emergency organization. The staff also finds that the CPNPP, Units 3 and 4, Emergency Plan and the applicant’s response to **RAI 4579, Question 13.3-38** adequately identifies, by position and function to be performed, other employees of the licensee with special qualifications for coping with emergency conditions that may arise or other persons with special qualifications, such as consultants, who are not employees of the licensee, and who may be called upon for assistance for emergencies. This is acceptable because it conforms to guidance criterion B.8 of NUREG-0654/FEMA-REP-1 and meets the requirements in 10 CFR Part 50 Appendix E, Section IV.A.5. In RAI 4579, Question 13.3-38, tracked as **Open Item 13.03-08**, the staff requested that the emergency plan identify, by position and function to be performed, other employees of the licensee with special qualifications for coping with emergency conditions that may arise as required under 10 CFR 50, Appendix E.IV.A.5. In its response to RAI 4579, Question 13.3-38, tracked as **Open Item 13.03-08**, the applicant will revise Section II.B.5 of the Emergency Plan to clarify that support personnel that could possibly be called in during a protracted event are not members of the ERO and would perform functions that are necessary for normal conduct of business for a nuclear utility. This revision is being tracked by the staff as **Confirmatory Item 13.03-67**.

13.3C.2.11 Local Emergency Response Support

Technical Information in the Emergency Plan: [B.9] {Appendix E, Section IV.A.6} Section B.9, “Local Emergency Response Support,” states that emergency response support services include firefighting, rescue squad, medical and hospital services and agreements are

established and maintained for local emergency response support services. Appendix 7, "Certification Letters and Letters of Agreement," contains certification letters for organizations providing these services including Lake Granbury Medical Center, DCBE/Acton Volunteer Fire Department, Walls Regional Hospital, Somervell County Sheriff's Department, GHC EMS, Somervell County Volunteer Fire, Rescue and EMS, Chisholm Trail Chapter of the American Red Cross, Granbury Volunteer Fire Department, Tolar Volunteer Fire Department, Indian Harbor Volunteer Fire/EMS Department, and Hood County Sheriff's Office, which state its intention to extend existing agreements with the applicant recognizing that formal letters of agreement will be made if and when the applicant proceeds with construction and operation. **Confirmatory Item 13.03-19** has been created by the staff to track the inclusion of a License Condition regarding Letters of Agreement for the emergency response between the applicant, the State of Texas, and Hood and Somervell Counties in a future revision to the Emergency Plan. Additional information related to this License Condition can be found in Section 13.3C.1.7, "Written Agreements," of this SE.

Technical Evaluation: [B.9] {Appendix E, Section IV.A.6} As described above, the staff finds that the CPNPP, Units 3 and 4, Emergency Plan and the applicant's response to **RAI 3327, Question 13.03-2.A-3.A**, which is being tracked as **Confirmatory Item 13.03-19**, adequately identifies the services to be provided by local agencies for handling emergencies (e.g., police, ambulance, medical, hospital, and fire-fighting organizations). The staff also finds that the CPNPP, Units 3 and 4, Emergency Plan adequately incorporates information about the emergency response roles of supporting organizations and offsite agencies. The information in the onsite emergency plan is sufficient to provide assurance of coordination among the supporting groups and with the licensee. This is acceptable because it conforms to the guidance identified in evaluation criteria B.9 of NUREG-0654/FEMA-REP-1 and meets the requirements in Appendix E, Section IV.A.6 to 10 CFR Part 50. In its response to **RAI 3327, Question 13.03-2.A-3.A**, the applicant commits to revise COLA Part 10 to include a proposed license condition regarding Letters of Agreement for the emergency response between the applicant, the State of Texas, and Hood and Somervell Counties. This is acceptable because it conforms to evaluation criteria B.9 of NUREG-0654/FEMA-REP-1. **Confirmatory Item 13.03-19** has been created to track this revision. The staff's evaluation of the proposed license condition is contained in Section 13.3.4 of this SE.

13.3C.2.12 Conclusion

The staff has reviewed the applicant's responses to **RAI 3327, Questions 13.03-3.B-1, B-2, B-3, and B-4**, in regards to Planning Standard B, "Onsite Emergency Response Organization (ERO)," of NUREG-0654/FEMA-REP-1 and Applicable Regulation. On the basis of the staff's review as described above for onsite emergency organization, the staff has concluded that the information provided in the CPNPP, Units 3 and 4, Emergency Plan and RAI responses which are being tracked as **Confirmatory Items 13.03-19 through 13.03-26 and Confirmatory Item 13.03-67**, are consistent with the guidelines in planning standard B of NUREG-0654/FEMA-REP-1. Therefore, the information is acceptable and meets the relevant requirements of 10 CFR 50.47(b)(2) and Sections III, IV.A, and IV.C of Appendix E to 10 CFR Part 50, insofar as the information describes the essential elements of advanced planning and the provisions made to cope with emergency situations.

13.3C.3 Emergency Response Support and Resources

13.3C.3.1 Regulatory Basis

In determining whether the proposed emergency plan met the applicable regulatory requirements in 10 CFR 50.47(b)(3), the staff evaluated the proposed emergency plan against the detailed evaluation criteria in NUREG-0654/FEMA-REP-1, Revision 1. The staff also evaluated the proposed emergency plan against applicable regulatory requirements related to the area of “Emergency Response Support and Resources,” in Appendix E to 10 CFR Part 50.

13.3C.3.2 Person Authorized to Request Federal Support

Technical Information in the Emergency Plan: [C.1.a] Section C.1, “Federal Response Capability,” identifies the Emergency Coordinator or EOF Manager as authorized to request Federal assistance on behalf of the site. Section A, “Assignment of Responsibility (Organization Control),” also identifies the Emergency Coordinator as authorized to request Federal assistance on behalf of the site. Section B, “Onsite Emergency Organization,” states that responsibilities of the Emergency Coordinator includes ensuring notification of officials in Somervell and Hood Counties, State of Texas Department of Public Safety (DPS), NRC, and other organizations as needed. The Emergency Coordinator also requests support from Federal, State, and local emergency response agencies, as appropriate. Section C.1 identifies arrival times for the Federal Radiological Monitoring and Assessment Center and NRC Region IV as three to four hours.

Technical Evaluation: [C.1.a] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately addresses the person authorized to request federal support. This is acceptable because it conforms to the guidance in C.1.a of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.3.3 Expected Assistance from State, Local, and Federal Agencies

Technical Information in the Emergency Plan: [C.1.b] {Appendix E, Section IV.A.7} Section A, “Assignment of Responsibility (Organization Control),” lists facilities available to support the Federal emergency response efforts including airports (Granbury, Cleburne, Stephenville, Meacham in Fort Worth, Forth Worth Joint Reserve Base, Love Field in Dallas, and Dallas-Fort Worth International); motels (Granbury, Glen Rose, Cleburne, Stephenville, Dallas, and Fort Worth); and working space within the CPNPP, Units 3 and 4, ERFs has been allocated for co-location of NRC personnel. In Section C, “Emergency Response Support and Resources,” the applicant identifies general resources as office space and telephones that are made available by the applicant to support the Federal response.

Section F.1, “Description of Communication Links,” describes communications systems available to support the response including a Public Address System/Plant Page-Party System, Private Automatic Branch Telephone Exchange (PABX), Sound Powered Telephone System (SPTS), Plant Radio System, and offsite Communication System. Capability is provided for emergency response communications between support personnel and the control room (CR), TSC, and EOF using an intraplant radio system. Trunk lines provide direct communications between offsite locations and emergency response facilities and allow the State of Texas and county EROs to communicate with their personnel and facilities stationed onsite.

Section C.1.b states that Federal radiological monitoring may be provided by DOE under the Radiological Assistance Program. Section C.1.b also states that the applicant expects assistance from NRC’s Region IV Office.

Technical Evaluation: [C.1.b] {Appendix E, Section IV.A.7} The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately identifies the assistance expected from appropriate State, local, and Federal agencies with responsibilities for coping with emergencies. This is acceptable because it meets the requirements in Appendix E to 10 CFR Part 50, Section IV.A.7 and it conforms to the guidance in C.1.b of NUREG-0654/FEMA-REP-1, Revision 1. .

13.3C.3.4 Resources to Support the Federal Response

Technical Information in the Emergency Plan: [C.1.c] Section C.1.c states that the applicant will provide office space and telephone communication facilities that are needed to support the Federal response through the EOF and TSC.

Technical Evaluation: [C.1.c] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately describes provisions for incorporating the Federal response capability into its operation plan; including specific licensee, State and local resources available to support the Federal response. This is acceptable because it conforms to the guidance in C.1.c of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.3.5 Representatives to Offsite Governments

Technical Information in the Emergency Plan: [C.2.b] Section C.2, "Offsite Organization Representation in the EOF," states that in the event of an emergency requiring offsite assistance, the applicant dispatches advisers to the Texas EOC in Austin, the Hood County EOC, and the Somervell County EOC.

Technical Evaluation: [C.2.b] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately addresses the dispatch of a representative to principal offsite governmental EOCs. This is acceptable because it conforms to the guidance in C.2.b of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.3.6 Radiological Laboratory Support

Technical Information in the Emergency Plan: [C.3] Section C.3, "Radiological Laboratories," contains a list of the radiological laboratories available to support such agencies as the Texas Department of State Health Services (TDSHS) mobile radiological laboratory, the Department of Energy (DOE) Radiological Assistance Team, the United States Environmental Protection Agency (U.S. EPA), and the South Texas Project. The site counting laboratory is available for gross counting and spectral analysis. The radiological facilities are available 24 hours per day and can provide services and equipment upon demand.

Technical Evaluation: [C.3] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately identifies radiological laboratories and their general capabilities and expected availability to provide radiological monitoring and analyses services which can be used in an emergency. This is acceptable because it conforms to the guidance in C.3 of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.3.7 Other Sources of Assistance

Technical Information in the Emergency Plan: [C.4] Section C.4, "Other Supporting Organizations," states that arrangements are established to obtain additional emergency response support from the Institute of INPO Fixed Nuclear Facility Voluntary Assistance Agreement. Signatories and letters of agreement provided in Appendix 7, "Certification Letters and Letters of Agreement," outline the scope of the expected support.

{Appendix E, Section III} Chapter 13, "Conduct of Operations," of the CPNPP, Units 3 and 4, FSAR describes the organization of the CPNPP site and outlines individual responsibilities. Section A, "Assignment of Responsibility," of the CPNPP, Units 3 and 4, Emergency Plan describes the primary responsibilities and organizational control of CPNPP, Units 3 and 4, Federal, State, county, and other support organizations. A block diagram outlining the interrelationships of supporting organizations is provided in Figure II-1, "Emergency Response Organization Interrelationships." A list of Letters of Agreement (LOA) is provided in Appendix 7, "Certification Letters and Letters of Agreement." These Certification Letters and LOAs formalize the coordination of the response.

Technical Evaluation: [C.4] The NRC staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately identifies the other sources of assistance expected to support any emergency response. This is acceptable because it conforms to the guidance in C.4 of NUREG-0654/FEMA-REP-1, Revision 1.

{Appendix E, Section III} The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately describes the applicant's operational role, its concept of operations, and its relationship to the total effort. This is acceptable because it meets the requirements in Appendix E to 10 CFR Part 50, Section III.

13.3C.3.8 Conclusion

On the basis of its review of the onsite emergency plan as described above for the onsite emergency organization, the staff concludes that the information provided in the CPNPP, Units 3 and 4, Emergency Plan as it pertains to emergency response support and resources is acceptable and meets the requirements of 10 CFR 50.47(b)(3) because it complies with the guidance in Planning Standard C of NUREG-0654/FEMA-REP-1, Revision 1, and the applicable portions of Appendix E to 10 CFR Part 50 as described above.

13.3C.4 Emergency Classification System

13.3C.4.1 Regulatory Basis

In determining whether the proposed emergency plan met the applicable regulatory requirements in 10 CFR 50.47(b)(4), the staff evaluated it against the detailed evaluation criteria in NUREG-0654/FEMA-REP-1, Revision 1, in addition to, the guidance set forth in Regulatory Guide 1.101, "Emergency Planning and Preparedness for Nuclear Power Reactors" and those documents referenced therein. The staff also evaluated the proposed emergency plan against applicable regulatory requirements related to the area of "Emergency Classification System," in Appendix E to 10 CFR Part 50.

13.3C.4.2 Emergency Classification System

Technical Information in the Emergency Plan: [D.1 and D.2] {Appendix E, Section IV.B} {Appendix E, Section IV.C} Section D, "Emergency Classification System," of the CPNPP, Units 3 and 4, Emergency Plan will be updated to describe the emergency classification system used to categorize an event into one of four classification levels. The spectrum of possible emergency events is categorized in the following four emergency classifications based on the recommendations of NEI 99-01, Revision 5, "Unusual Event, Alert, Site Area Emergency, and General Emergency.

Upon the staff's review, it was noted that the applicant did not fully address certain aspects of the required EAL scheme. This is because various equipment set points and other information cannot be determined until the as-built information is available (e.g., head corrections, radiation shine, final technical specifications, and equipment calculations and tolerances). Consequently, in **RAI 3295, Question 13.03-01.D-1**, the staff requested that the applicant address its plans to finalize the required EAL scheme. In its response to **RAI 3295, Question 13.03-01.D-1**, the applicant proposed a license condition to submit a fully developed set of site-specific EALs in accordance with the NRC-endorsed version of NEI 99-01, Revision 5, with few deviations as described below. The applicant stated that the proposed License Condition, described below, will be added to Part 10 of the CPNPP, Units 3 and 4, COLA.

The applicant's supplemental RAI response proposed the following License Condition:

"The licensee shall complete development of the site-specific Emergency Action Levels (EALs) presented in Appendix 1 to the Comanche Peak Nuclear Power Plant Units 3 & 4 Combined License Application Emergency Plan in accordance with 99-01, Revision 5, with few differences or deviations. The fully developed site-specific EAL scheme shall be submitted to the NRC for confirmation at least 180 days prior to initial fuel load."

The NRC staff determined that the deviations identified by the applicant in response to RAI 3295, Question 13.03-01.D-1, must be addressed, and could not be treated as deviations, in order for the staff to make a finding of reasonable assurance as it pertains to the EAL Scheme for the proposed CPNPP, Units 3 and 4. The staff informed the applicant that its response to RAI 3295, Question 13.03-01.D-1 needed to include deviations from NEI 99-01, Revision 5. On March 5, 2010, Luminant supplemented its December 21, 2009, RAI response submittal to include these deviations. On September 16, 2010, Luminant again supplemented its response to clarify the wording of their proposed License Condition. In addition, the applicant stated that Appendix 1 of the Emergency Plan, which currently contains an incomplete EAL scheme, will be replaced in its entirety to include a table identifying differences and deviations between the

CPNPP, Units 3 and 4, EALs and NEI 99-01, Revision 5. However, because the Applicant's proposed revision to the license condition did not fully address the requirements of 10 CFR 50.47(b) and 10 CFR 50, Appendix E, the staff revised the proposed license condition to read as follows:

The licensee shall submit a fully developed set of plant-specific Emergency Action Levels (EALs) for CPNPP 3&4 in accordance with NEI 99-01 Revision 5 with the exception of the deviations specified in Appendix 1 of the CPNPP3&4 application, "EAL Differences and Deviations from NEI Guidance," and approved in NRC staff's SER Section 13.3C.4. 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.

In summary, the fully developed set of site-specific EALs for CPNPP, Units 3 and 4, will be provided to the NRC in accordance with 99-01 Revision 5 with the following exceptions:

- CPNPP, Units 3 and 4, proposes the exclusion of NEI 99-01 Revision 5 Initiating Condition (IC) SU3. This IC is not applicable to CPNPP based on the US-APWR design, and
- CPNPP proposed inserting replacement ICs for SA4 and SS6 from NEI 99-01 Revision 5 which are applicable to US-APWR CPNPP, Units 3 and 4 Digital I&C, and
- CPNPP proposes modifying NEI 99-01 Revision 5 ICs CU2, HA1, AU1, AA1, AS1, AG1, HU1, and SU8, and
- CPNPP proposes the addition of NEI 99-01 Revision 5 ICs CU9 and CA9, applicable to Cold Shutdown, into the final Emergency Action Level Bases Document for CPNPP, Units 3 and 4.

In its response to **RAI 3295, Question 13.03-01.D-1**, the applicant also stated that a revised Section D that describes a general list of licensee actions at each emergency classification level will be provided in a future revision to the CPNPP, Units 3 and 4, Emergency Plan. The language that will appear in the future revision to Part 5 of the Emergency Plan was included in the applicant's RAI response. In addition, the applicant proposes that the emergency response procedure related to emergency classification will be controlled in accordance with the requirements of 10 CFR 50.54(q).

Technical Evaluation: [D.1 and D.2] {Appendix E, Section IV.B} {Appendix E, Section IV.C} The staff finds the license condition, as modified by the staff, ensures that the applicant will provide to the NRC a standard emergency classification and action level scheme that will be used by the nuclear facility licensee and State and local response organizations for reliance on information regarding initial onsite and offsite response measures. The staff also finds that the response to **RAI 3295, Question 13.03-01.D-1**, which describes exclusion of IC SU3, specified in NEI 99-01, Revision 5, acceptable because this IC will not be applicable to CPNPP, Units 3 and 4, based on the US-APWR Digital I&Cs design. In addition, the staff found the replacement ICs for SA4 and SS6, with the criteria from NEI-07-01, Revision 0, which are applicable to Digital I&C to be acceptable. The staff also finds that the modified ICs of CU2, HA1, AU1, AA1, AS1, AG1, HU1, and SU8 applicable to power operation, startup, and hot standby/shutdown

modes, are acceptable because they address control and indication systems unique to the plant design. The addition of the ICs CU9 and CA9 into the final Emergency Action Level Bases Document for CPNPP, Units 3 and 4 is acceptable because they address control and indication systems unique to the plant design when the reactors are in the cold shutdown mode. The staff finds that the proposed revised license condition and deviations are acceptable because they conform with guidance identified in evaluation criterion D.1 and D.2 of NUREG-0654/FEMA-REP-1 and 10 CFR Part 50 Appendix E, Section IV.B and Section IV.C.

13.3C.4.3 Emergency Action Levels Review by State and Local Authorities

Technical Information in the Emergency Plan: {Appendix E, Section IV.B} Appendix 1, “Emergency Action Levels,” of the CPNPP, Units 3 and 4, Emergency Plan incorporates by reference NEI 99-01 Revision 5 which is intended to provide parameter values and equipment status that are indicative of each emergency class. **RAI 3327, Question 13.03-8.I-1** requested that the applicant propose a License Condition that will ensure that the fully developed version of the initial emergency action levels will be discussed with, and agreed upon with, State and local governmental authorities. In its response, the applicant stated that a License Condition requiring the execution of letters of agreement with State and local entities with emergency support responsibilities and those entities concurrence on the finalized emergency action level scheme will be added to Part 10 of the CPNPP, Units 3 and 4, Emergency Plan that will include the above information. Specifically, the proposed License Condition read as follows:

Execution of Letters of Agreement with State and local entities identifying the specific nature of arrangements in support of emergency preparedness and certifying the agency’s concurrence with the emergency action levels prior to the full-participation exercise is a potential condition to the license.

Technical Evaluation: {Appendix E, Section IV.B} In its response to **RAI 3327, Question 13.03-8.I-1**, the applicant proposed a License Condition that would ensure that the fully developed version of the initial emergency action level scheme would be discussed and agreed upon with State and local governmental authorities following the issuance of a license as required by Appendix E to 10 CFR Part 50.

However, this license condition was modified by the staff pursuant to the requirements identified in Appendix E, Section IV.B to 10 CFR Part 50 read as follows:

The licensee shall execute formal Letters of Agreement with State and local entities with emergency planning responsibilities prior to the full-participation exercise. These Letters of Agreement shall identify the specific nature of arrangements in support of emergency preparedness for operation of the proposed new nuclear units.

Additional information related to the State and local authorities review and agreement of the applicant’s Emergency Action Levels can be found in Section 13.3C.9.2, “Initiating Conditions for Emergency Classes,” of this SE.

13.3C.4.4 Conclusion

On the basis of its review of the CPNPP, Units 3 and 4, Emergency Plan and the applicant’s response to **RAI 3327, Question 13.03-8.I-1**, as described above for the emergency classification system, the staff concludes that the information is consistent with the guidelines in planning standard D of NUREG-0654/FEMA-REP-1. Therefore, the information is acceptable

and meets the relevant requirements of 10 CFR 50.47(b)(4) and Sections III, IV.B, and IV.C of Appendix E to 10 CFR Part 50, insofar as the information describes the essential elements of advanced planning and the provisions made to cope with emergency situations.

13.3C.5 Notification Methods and Procedures

13.3C.5.1 Regulatory Basis

In determining whether the proposed emergency plan met the applicable regulatory requirements in 10 CFR 50.47(b)(5), the staff evaluated it against the detailed evaluation criteria in NUREG-0654/FEMA-REP-1, Revision 1. The staff also evaluated the proposed emergency plan against applicable regulatory requirements related to the area of “Notification Methods and Procedures,” in Appendix E to 10 CFR Part 50 and 10 CFR 50.72⁵.

13.3C.5.2 Notification Procedures, Capabilities, and Agreements

Technical Information in the Emergency Plan: [E.1] {Appendix E, Section IV.D.1 and D.3} Section E, “Notification Methods and Procedures,” states initial notifications are made to the Somervell County Sheriff or Dispatcher; Hood County Sheriff or Dispatcher; and State of Texas DPS. Section E and Appendix 5, “Emergency Plan Procedures,” of the CPNPP, Units 3 and 4, Emergency Plan states that message content and verification methods are established in EPPs and agreements between the affected organizations. The applicant has proposed emergency planning ITAAC 2.1 to test the capabilities to notify State and local authorities no later than 15 minutes after the applicant declares an emergency.

Technical Evaluation: [E.1] {Appendix E, Section IV.D.1 and D.3} The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately refers to procedures which describe mutually agreeable bases for notification of response organizations and conforms to the emergency classifications as set forth in Appendix 1, “US Nuclear Regulatory Commission Emergency Action Level Guidelines for Nuclear Power Plants,” to NUREG-0654/FEMA-REP-1, Revision 1. These procedures include the means for verification of messages. This is acceptable because it conforms to the guidance in E.1 of NUREG-0654/FEMA-REP-1, Revision 1, and meets the requirements in Appendix E to 10 CFR Part 50, Section IV.D.1 and D.3. The staff’s evaluation of emergency planning ITAAC is addressed in Section 13.3C.19 of this FSER.

13.3C.5.3 Notification and Activation of the Emergency Response Organization

Technical Information in the Emergency Plan: [E.2] {Appendix E, Section IV.C} Section E, “Notification Methods and Procedures,” of the CPNPP, Units 3 and 4, Emergency Plan states the Emergency Coordinator directs the notification of the ERO and Security Shift Supervisor upon declaration of an Alert or higher level emergency. ERO personnel are notified of emergency conditions in accordance with the provisions of EPPs. ERO personnel are notified by either the plant page-party system or the autodial calling system utilizing commercial telephone lines. Appendix 5, “Emergency Plan Procedures,” of the CPNPP, Units 3 and 4, Emergency Plan lists notifications as an area which will be covered in procedures. The applicant has proposed emergency planning ITAAC 2.2 to test the capabilities of the system used to notify emergency response personnel.

⁵ Parentheses () identify other applicable regulatory requirements

Technical Evaluation: [E.2] {Appendix E, Section IV.C} The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately addresses capabilities for alerting, notifying, and mobilizing emergency response personnel. This is acceptable because it conforms to the guidance in E.2 of NUREG-0654/FEMA-REP-1 and meets the requirements in Appendix E to 10 CFR Part 50, Section IV.C. The staff's evaluation of emergency planning ITAAC is addressed in Section 13.3C.19 of this FSER.

13.3C.5.4 Initial Message Content to Offsite Response Organizations

Technical Information in the Emergency Plan: [E.3] {Appendix E, Section IV.A.4 and IV.C} Section E, "Notification Methods and Procedures," of the CPNPP, Units 3 and 4, Emergency Plan states initial notifications to Somervell County EOC, Hood County EOC, and the Department of Public safety provides information including the CPNPP, Units 3 and 4, communicator's name, emergency classification, brief description of emergency, whether an emergency-related radiological release is occurring, protective action recommendations (PARs), and potentially affected areas and populations. The applicant has proposed emergency planning ITAAC 2.3 to test the capabilities to inform the public in the plume exposure pathway EPZ.

Technical Evaluation: [E.3] {Appendix E, Section IV.A.4 and IV.C} The staff finds that the CPNPP, Units 3 and 4, Emergency Plan, in conjunction with State and local organizations, adequately establishes the contents of the initial emergency messages to be sent from the plant. These messages contain information about the class of emergency, whether a release is taking place, potentially affected population and areas, and whether protective measures may be necessary. This is acceptable because it meets the requirements of Appendix E, Section IV.A.4 and IV.C to 10 CFR Part 50 and conforms to the guidance in E.3 of NUREG-0654/FEMA-REP-1, Revision 1. The staff's evaluation of emergency planning ITAAC is addressed in Section 13.3C.19 of this FSER.

13.3C.5.5 Follow-up Messages to Offsite Response Organizations

Technical Information in the Emergency Plan: [E.4] Section E, "Notification Methods and Procedures," of the CPNPP, Units 3 and 4, Emergency Plan states that follow-up notification to Somervell County EOC, Hood County EOC, and Texas Department of Public Safety provides information including the meteorological conditions (wind velocity and direction, temperature, atmospheric stability data, and form of precipitation, if any) and requests for onsite support if needed. Additional information is provided if requested by Radiation Protection Coordinator (RPC) including type of radiological material release (whether actual or projected), airborne, waterborne or surface spill and estimated or known release duration, estimated or known quantities of radioactive material released, point of release, chemical and physical form of released material. Estimates of relative quantities and concentrations of noble gases, radioiodines, and particulates would also be provided as well as estimates or known quantities of radioactive surface contamination, onsite or offsite, actual or projected dose rates and integrated doses at the CPNPP, Units 3 and 4, site boundary and at two, five, and 10 miles, and for affected sectors. The prognosis for escalation or termination of emergency based on current plant information and any applicant emergency response actions underway are provided.

Technical Evaluation: [E.4] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately provides for follow-up messages from the facility to offsite authorities. The staff verified that the nature of the information provided is consistent with the requirements of the

State and local emergency plans. This is acceptable because it conforms to the guidance in E.4 of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.5.6 Notification of the Public

Technical Information in the Emergency Plan: [E.6] Section E, “Notification Methods and Procedures,” of the CPNPP, Units 3 and 4, Emergency Plan states that local officials, primarily County Judges and County Sheriffs, authorize use of and are responsible for operating the Alert and Notification System and providing messages to the Emergency Alert System (EAS) stations. Preformatted EAS messages are included in State and county emergency plans.

Backup methods of alerting the public are discussed in Section E.6, “Instructions to the Public in the Plume Exposure EPZ,” and include using the alerting mechanism on emergency vehicles, automatic dialing systems, and public address systems.

Section III.C, “Special Alerting Arrangements,” of Appendix 3, “Public Alert and Notification System Description,” of the CPNPP, Units 3 and 4, Emergency Plan states that the alerting requirement for industrial facilities and institutions were determined with consideration to existing alerting mechanisms. In **RAI 3327, Question 13.03-4.E-1**, the staff requested additional information regarding whether systems designed for other purposes are adapted to incident alert notification at CPNPP. In its response, the applicant stated that the ANS used at CPNPP, Units 1 and 2, will be used for CPNPP, Units 3 and 4, and the ANS may also be used for dangerous weather or civil defense emergencies.

Technical Evaluation: [E.6] As described above, the CPNPP, Units 3 and 4, Emergency Plan adequately establishes administrative and physical means, and the time required for notifying and providing prompt instructions to the public in the plume exposure pathway EPZ as stated in evaluation criterion E.6 of NUREG-0654/FEMA-REP-1, Revision 1. The staff finds the additional information provided by the applicant in response to **RAI 3327, Question 13.03-4.E-1** to be acceptable.

13.3C.5.7 Written Messages to the Public

Technical Information in the Emergency Plan: [E.7] Section E, “Notification Methods and Procedures,” states that written pre-planned EAS messages intended for transmittal to the public via radio and television stations are consistent with the classification scheme. These messages are released to the media by the Emergency Management Director (County Judges) or their designees. The messages provide instruction with regard to specific actions to be taken by the occupants of the affected area. As appropriate, the messages provide information on the nature of the emergency and recommended protective actions, including sheltering, evacuation, and the use of Potassium Iodine (KI). The applicant provides information needed to support development of these messages.

Technical Evaluation: [E.7] The staff finds the CPNPP, Units 3 and 4, Emergency Plan adequately discusses written messages intended for the public developed by the State of Texas. In particular, draft messages to the public giving instructions with regard to specific protective actions to be taken by occupants of affected areas, were prepared. This is acceptable because it conforms to the guidance in E.7 of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.5.8 Notification of the NRC

Technical Information in the Emergency Plan: {Appendix E, Section IV.A.4} (10 CFR 50.72(a)(3)) and (10 CFR 50.72(c)(3)) Section E, "Notification Methods and Procedures," of the CPNPP, Units 3 and 4, Emergency Plan states the NRC is notified as soon as practical following the notification of the State of Texas and county authorities and within one hour of the emergency declaration.

Technical Evaluation: {Appendix E, Section IV.A.4} (10 CFR 50.72(a)(3)) The staff finds that the CPNPP, Units 3 and 4, Emergency Plan states that the licensee will notify the NRC immediately after notification of the appropriate State or local agencies and not later than one hour after the time the licensee declares one of the Emergency Classes. This is acceptable because it meets the requirements in 10 CFR 50.72(a)(3) and Appendix E to 10 CFR Part 50, Section IV.A.4.

(10 CFR 50.72(c)(3)) The staff finds that the CPNPP, Units 3 and 4, Emergency Plan states that with respect to the telephone notifications made under 10 CFR 50.73(a) and (b), in addition to making the required initial notification, adequate provisions have been made that upon request of the NRC an open and continuous communication channel with the NRC will be maintained. This is acceptable because it meets the requirements in 10 CFR 50.72(c)(3).

13.3C.5.9 Conclusion

The staff concludes that the information provided in the CPNPP, Units 3 and 4, Emergency Plan regarding notification methods and procedures meets the requirements of 10 CFR 50.47(b)(5) and is acceptable because it complies with the guidance in Planning Standard E of NUREG-0654/FEMA-REP-1, Revision 1, the applicable portions of Appendix E to 10 CFR Part 50, and the requirements of 10 CFR 50.72(a)(3) and (c)(3) as described above.

13.3C.6 Emergency Communications

13.3C.6.1 Regulatory Basis

In determining whether the proposed emergency plan met the applicable regulatory requirements in 10 CFR 50.47(b)(6), the staff evaluated it against the detailed evaluation criteria in NUREG-0654/FEMA-REP-1, Revision 1. The staff also evaluated the proposed emergency plan against applicable regulatory requirements related to the area of "Emergency Communications," in Appendix E to 10 CFR Part 50 and GL 91-14.

13.3C.6.2 Content of the Emergency Communications Plan

Technical Information in the Plan: [F.1.a] Section II.F.1, "Description of Communication Links," of the CPNPP, Units 3 and 4, Emergency Plan describes the communication links used to notify and activate Federal, State, and local agencies. A 24-hour per day notification capability to Federal, State and county emergency response organizations is maintained and a 24-hour per day manning of communication links is provided. Section II.F.1.b of the CPNPP, Units 3 and 4, Emergency Plan indicates that a dedicated telephone circuit has been established between CPNPP, Units 3 and 4, and Texas DPS and Hood and Somervell Sheriff's offices as the primary communications link. Private telephone capability, voice and facsimile communications capability, and an intraplant radio transmitter-receiver system (Section II.F.1.d) serve as backup systems.

[F.1.b] Section II.F.1 describes the communication links used to notify and activate Federal, State, and local agencies. Notification to Federal, State and county emergency response organizations are conducted through the use of simultaneous telephone links, voice and facsimile communications via the PABX telephone system, public address system/plant page-party system, SPTS, plant radio system, offsite-communication system, microwave communications system, Federal Telecommunications System (FTS), and the interplant radio transmitter-receiver system.

[F.1.c] Section II.F.1, "Description of Communication Links," describes the communication links used to notify and activate Federal, State, and local agencies. Notification to Federal emergency response organizations are conducted through the use of simultaneous telephone links, voice and facsimile communications via the PABX telephone system, SPTS, plant radio system, offsite-communication system, microwave communications system, FTS, and the interplant radio transmitter-receiver system.

[F.1.d] Section II.F.1.b indicates that a dedicated telephone circuit has been established between CPNPP, Units 3 and 4, and Texas DPS and Hood and Somervell Sheriff's offices as the primary communications link. Private telephone capability, voice and facsimile communications capability, and an intraplant radio transmitter-receiver system (Section II.F.1.d) serve as backup systems. Section II.F.1.c, states communication between the CR and EOF is also available through the FTS. The applicant proposed emergency planning ITAAC 3.1 to test the capabilities to verify that the means exist for communications among the control room, TSC, EOF, principal State and local EOCs and radiological field assessment teams.

[F.1.e] Section II.F.1.e of the CPNPP, Units 3 and 4, Emergency Plan references Section II.E.2, "Notification and Mobilization of Licensee Response Organizations," of the Plan for notification, alerting, and activation of emergency response personnel in the TSC, OSC, and EOF. Emergency response personnel are notified by the plant page-party system or an auto-dialing calling system using commercial telephone lines. A pager system can also be used to notify personnel if necessary.

[F.1.f] Section II.F.1.f of the CPNPP, Units 3 and 4, Emergency Plan states that communications between the CR/TSC/EOF to the NRC Operations Center are via the Emergency Notification System (ENS) or private telephone. Communications between the CR/TSC/EOF to the NRC Regional Office EOC are via the normal private telephone capability. Communications between the TSC and EOF and offsite monitoring teams are via a radio system. The applicant has proposed emergency planning ITAAC 3.2 to test the communications capabilities of the control room, TSC, and EOF to NRC headquarters and regional offices.

{Appendix E, Section IV.E.9} Section II.F.1, "Description of Communication Links," of the CPNPP, Units 3 and 4, Emergency Plan describes the communication links used to notify and activate Federal, State, and local agencies. Notification to Federal, State and county emergency response organizations is available 24-hours per day through the use of multiple communications systems. These communication systems are designed so that the failure of one component would not impair the reliability of the total communication system. Communications to the public are discussed in Sections E.5, "Disseminating Information to the Affected Public," Section E.6, "Instructions to the Public in the Plume Exposure EPZ," and E.7, "Written Messages to the Public."

Section II.F.1, "Description of Communication Links," of the CPNPP, Units 3 and 4, Emergency Plan lists multiple onsite and offsite communication systems. In **RAI 3327, Question 13.03-5.F-1**, the staff requested additional information regarding the availability of backup power sources for onsite and offsite communication systems. In its response, the applicant described the five communications systems available at CPNPP and references Section 9.5.2 of the US-APWR DCD for primary and backup power sources to these systems. The applicant described the backup power sources for the corporate microwave communications system, the "dedicated circuit" and "private telephone lines." The applicant will revise the Emergency Plan to include the backup power capabilities of the "dedicated circuit," "private telephone lines," and the microwave communications system.

Provisions for communications between the nuclear power reactor CR, the onsite TSC, and the near-site EOF, and among the nuclear facility, the principal State and local EOCs, and the field assessment teams is discussed in Section II.F.1, "Description of Communication Links." These communication systems include a microwave communications system, dedicated telephone lines, the Federal Telecommunications System and an intraplant transmitter-receiver system. Section II.F.3, "Communication System Periodic Testing," states Section II.N.2.a, "Communication Drills," addresses communications systems testing. Section II.N.2.a, "Communication Drills," states communications between CPNPP, Units 3 and 4, State and local EOCs and radiological monitoring teams are tested annually.

Section II.F.1.f states that communications between the CR/TSC/EOF to the NRC Operations Center is via the Emergency Notification System or private telephone. Communications between the CR/TSC/EOF to the regional office is via normal private telephone capability. Communications between the TSC/EOF and offsite monitoring teams is via a radio system. Section II.N.2.a, "Communication Drills," states that communication links between CPNPP and Federal agencies shall be tested quarterly.

{Appendix E, Section IV.E.9(a)} Section II.F.1, "Description of Communication Links," of the CPNPP, Units 3 and 4, Emergency Plan describes the communication links used to notify and activate Federal, State, and local agencies. Notification to Federal, State and county emergency response organizations is available 24-hours per day through the use of telephone links, voice and facsimile communications via the PABX telephone system, public address system/plant page-party system, SPTS, plant radio system, offsite-communication system, microwave communications system, FTS, and the interplant radio transmitter-receiver system. These communication systems are designed so that the failure of one component would not impair the reliability of the total communication system. Communications to the public are discussed in Sections E.5, "Disseminating Information to the Affected Public," Section E.6, "Instructions to the Public in the Plume Exposure EPZ," and E.7, "Written Messages to the Public."

{Appendix E, Section IV.E.9(b)} Section II.F.1.b indicates that a dedicated telephone circuit has been established between CPNPP, Units 3 and 4, and Texas DPS and Hood and Somervell Sheriff's offices as the primary communications link. Private telephone capability, voice and facsimile communications capability, and an intraplant radio transmitter-receiver system (Section II.F.1.d) serve as backup systems. Section II.N.2.a, "Communication Drills," states that communication systems between CPNPP, Units 3 and 4, the DPS, and Somervell and Hood County EOCs are tested monthly. Section II.F.1.c, describes the FTS as an independent phone link between CPNPP, Units 3 and 4, and the NRC.

{Appendix E, Section IV.E.9(c)} Section II.N.2.a, "Communication Drills," states that communication systems between CPNPP, Units 3 and 4, the DPS, and Somervell and Hood County EOCs are tested monthly. Section II.F.1.c, describes the FTS as an independent phone link between CPNPP, Units 3 and 4, and the NRC. Communications equipment involving the ENS telephone in the CR and the ENS and HPN telephones in the TSC and EOF are tested monthly.

{Appendix E, Section IV.E.9 (d)} Section II.F.1.c, describes the FTS as an independent phone link between CPNPP, Units 3 and 4, and the NRC. Communications equipment involving the ENS telephone in the CR and the ENS and HPN telephones in the TSC and EOF are tested monthly.

(GL 91-14) Section II.F.1, "Description of Communication Links," of the CPNPP, Units 3 and 4, Emergency Plan states provisions are in place for the: ENS, HPN, and ERDS. FTS lines are used for the ENS and HPN. In **RAI 3327, Question 13.03-5.F-2**, the staff requested a discussion of the availability of the RSCL, PMCL, MCL, and LAN. In its response, the applicant explained that the RSCL, the PMCL, MCL and LAN are known collectively as the Emergency Telecommunications System (ETS). The applicant will revise Section II.F.1.c of the Emergency Plan to discuss the availability of the RSCL, PMCL, MCL, and LAN. In **RAI 3327, Question 13.03-5.F-3**, the staff requested additional information to specify that there is guaranteed power for the ENS. In its response, the applicant clarified that the ENS uses the FTS for communications. The FTS has backup capability from generators and batteries. Additionally, the microwave communications system can be used to provide backup capability. The applicant will revise Section F.1, "Description of Communication Links," include backup power systems and communications systems.

Technical Evaluation: [F.1.a] As described above, the staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately addresses communication plans for emergencies. The CPNPP, Units 3 and 4, Emergency Plan provides for 24-hour per day notification to and activation of the State/local emergency response network, and at a minimum, a telephone link and alternate, including 24-hour per day manning of communications links that initiate emergency response actions. These actions are acceptable because they conform to the guidance described in evaluation criterion F.1.a of NUREG-0654/FEMA-REP-1, Revision 1. Additional information on Emergency Communications is located at FSER Section 9.5.2, "Communications Systems."

[F.1.b] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately addresses provisions for communications with State and local governments within the EPZs. This is acceptable because it meets the guidance in F.1.b of NUREG-0654/FEMA-REP-1, Revision 1.

[F.1.c] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately addresses provisions for communications as needed with Federal emergency response organizations. This is acceptable because it conforms to the guidance described in F.1.c of NUREG-0654/FEMA-REP-1, Revision 1.

[F.1.d] The staff finds the CPNPP, Units 3 and 4, Emergency Plan adequately describes the communication plans that included provisions for emergency communications between the nuclear facility and the EOF, State and local EOCs, and radiological monitoring teams. This is acceptable because it conforms to the guidance described in F.1.d of NUREG-0654/FEMA-REP-1, Revision 1. The adequacy of the proposed emergency planning ITAAC is addressed in Section 13.3C.19, "Emergency Planning ITAAC."

[F.1.e] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately describes the emergency communication plans that include provision for alerting or activating emergency personnel in each response organization. This is acceptable because it conforms to the guidance provided in F.1.e NUREG-0654/FEMA-REP-1, Revision 1.

[F.1.f] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately describes the communication plans for emergencies and addresses provisions for communication by the licensee with NRC headquarters and NRC Regional Office Emergency Operations Centers and the EOF and radiological monitoring team assembly area. This is acceptable because it conforms to the guidance in F.1.f of NUREG-0654/FEMA-REP-1, Revision 1. The adequacy of the proposed emergency planning ITAAC is addressed in Section 13.3C.19, "Emergency Planning ITAAC."

{Appendix E, Section IV.E.9} As described above, the staff finds that the CPNPP, Units 3 and 4, Emergency Plan makes arrangements for emergencies consistent with the requirements in 10 CFR Part 50 Appendix E, Section IV.E.9. In its response to **RAI 3327, Question 13.03-5.F-1**, the applicant will revise Section II.F, "Emergency Communications," of the Emergency Plan to describe backup power sources to the "dedicated," "private," and microwave communications system. The revision to Section II.F will describe that the backup power sources for these systems are supported by generators and batteries. This is acceptable because it meets the requirements in Appendix E to 10 CFR Part 50, Section IV.E.9. Therefore, **Confirmatory Item 13.03-27** has been created to track this revision.

In addition, the applicant's communication plans have arrangements for emergencies, including titles and alternates for those in charge at both ends of the communication links and the primary and backup means of communication. Consistent with the function of the governmental agency, these arrangements included:

- a. Provisions for communications with contiguous State/local governments within the plume exposure pathway EPZ. Such communications shall be tested monthly.
- b. Provisions for communications with Federal emergency response organizations. Such communications systems shall be tested annually.
- c. Provisions for communications among the nuclear power reactor control room, the onsite technical support center, and the emergency operations facility; and among the nuclear facility, the principal State and local emergency operations centers, and the field assessment teams. Such communications systems shall be tested annually.
- d. Provisions for communications by the licensee with NRC Headquarters and the appropriate NRC Regional Office Operations Center from the nuclear power reactor control room, the onsite technical support center, and the emergency operations facility. Such communications shall be tested monthly.

This is acceptable because it meets the requirements in Appendix E to 10 CFR Part 50, Section IV. E. 9.

(GL 91-14) As described above, the staff finds that the CPNPP, Units 3 and 4, Emergency Plan and the applicant's responses to **RAI 3327, Question 13.03-5.F-2** and **RAI 3327, Question**

13.05.F-3, provide for all Emergency Communication paths as described in Generic Letter 91-14. In its response to **RAI 3327, Question 13.03-5.F.2**, the applicant will revise Section II.F.1.c of the Emergency Plan to discuss the availability of the RSCL, PMCL, MCL, and LAN.

Confirmatory Item 13.03-28 has been created to track this revision. In its response to **RAI 3327, Question 13.03-5.F-3**, the applicant will revise Section F.1, "Description of Communication Links," to include backup power systems and communications systems to the ENS. This is acceptable because it conforms to GL 91-14. **Confirmatory Item 13.03-29** has been created to track this revision.

13.3C.6.3 Communications with Medical Facilities

Technical Information in the Plan: **[F.2]** Section II.F.2, "Communication with Fixed and Mobile Medical Support Facilities," of the CPNPP, Units 3 and 4, Emergency Plan references Section II.L.4, "Medical Emergency Transportation," of the Plan which states ambulances will be able to communicate with staff at the receiving hospital.

Technical Evaluation: **[F.2]** The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately ensures that a coordinated communication link exists for fixed medical support facilities and ambulance service(s). This is acceptable because it conforms to the guidance described in F.2 of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.6.4 Periodic Testing of the Emergency Communications System

Technical Information in the Plan: **[F.3]** Section II.F.3, "Communication System Periodic Testing," refers to Section II.N.2.a, "Communication Drills," regarding communication system testing. Section II.N.2.a states that communication systems between CPNPP, Units 3 and 4, the DPS, and Somervell and Hood County EOCs are tested monthly. Section II.F.1.c, "Federal Telecommunications System," states communications equipment involving the ENS telephone in the CR and the ENS and HPN telephones in the TSC and EOF are tested monthly.

Technical Evaluation: **[F.3]** The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately describes the conduct of periodic testing of the entire emergency communications system. This is acceptable because it conforms to the guidance described in F.3 of NUREG-0654/FEMA-REP-1, Revision 1. NUREG-0654/FEMA-REP-1, Revision 1, Section II.N.2.a, specifies monthly testing.

13.3C.6.5 Conclusion

The staff has reviewed the CPNPP, Units 3 and 4, Emergency Plan and the applicant's responses to **RAI 3327, Questions 13.03-5.F-1, 13.03-5.F-2, and 13.03-5.F-3** in regards to Planning Standard F, Emergency Communications, of NUREG-0654/FEMA-REP-1 and Applicable Regulation. The staff concludes that the information provided in the CPNPP, Units 3 and 4, Emergency Plan and the applicant's responses to **RAI 3327, Questions 13.03-5.F-1, 13.03-5.F-2, and 13.03-5.F-3**, which are being tracked as **Confirmatory Items 13.03-27** through **13.03-29**, regarding emergency communications is acceptable and meets the requirements of 10 CFR 50.47(b)(6) because it complies with the guidance in Planning Standard F of NUREG-0654/FEMA-REP-1, the applicable portions of Appendix E to 10 CFR Part 50, and the guidance in GL 91-14 as described above.

13.3C.7 Public Education and Information

13.3C.7.1 Regulatory Basis

In determining whether the proposed emergency plan meets the applicable regulatory requirements in 10 CFR 50.47(b)(7), the staff evaluated the proposed emergency plan against the detailed evaluation criteria in NUREG-0654/FEMA-REP-1, Revision 1. The staff also evaluated the proposed emergency plan against applicable regulatory requirements related to the area of "Public Education and Information," in Appendix E to 10 CFR Part 50.

13.3C.7.2 Content of Public Information

Technical Information in the Plan: [G.1] Section G.1, "Public Information Program," of the CPNPP, Units 3 and 4, COLA - Emergency Plan, provides a general discussion of the public education and information program. Section G.1 and Section G.2, "Distribution and Maintenance of Public Information," of the CPNPP, Units 3 and 4, Emergency Plan states that public information will be provided to residents, businesses, and transients in the 10-mile Plume Exposure Pathway EPZ. The applicant describes that information will be provided annually to residents within the 10-mile EPZ. Publications will include information on how the public will be notified and what their actions should be in the case of an emergency. The information will also address educational information on radiation, points of contact for additional information, EAS radio stations, immediate actions and protective measures. The process for special needs persons to register with local agencies is discussed in public information. Methods of distribution may include informative sections in local telephone directories, brochures, or calendars which are mailed to households. Information will also be provided via a website which can be accessed electronically. Section G, "Public Education and Information," states that procedures are established for coordinated dissemination of information to the public by designated members of Luminant, State of Texas, and Somervell and Hood County EROs.

Technical Evaluation: [G.1] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately provides for a coordinated periodic (at least annually) dissemination of information to the public regarding how they will be notified and what their actions should be in an emergency. Means for accomplishing this dissemination are also adequately described. This is acceptable because it conforms to the guidance provided in G.1 of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.7.3 Distribution and Maintenance of Public Information

Technical Information in the Plan: [G.2] {Appendix E, Section IV.D.2} Section G.2 states that information will be provided to the transient population within the Plume Exposure Pathway EPZ in public postings and publications to selected local businesses, public buildings, recreational areas, hotels, motels, and campgrounds. This information will include telephone numbers for local Offsite Response Organizations, evacuation and shelter instructions, and maps of evacuation routes and reception centers. Residential distribution methods include information sections in telephone directories, brochures, or calendars which are mailed to residents and kept in the household. In **RAI 3327, Question 13.03-6.G-1**, the staff requested clarification regarding how often public education and information materials for transient use are disseminated to selected businesses, public buildings, recreational areas, hotels, motels, and campgrounds. In response, the applicant provided reference to Hood and Somervell County's Emergency Plans, both of which state that information is provided annually in telephone directories.

Technical Evaluation: [G.2] {Appendix E, Section IV.D.2} As described above, the staff finds that the CPNPP, Units 3 and 4, adequately describes a public information program that

provides the permanent and transient population with the plume exposure EPZ an opportunity to become aware of the information annually. This is acceptable because it conforms to the guidance described in evaluation criterion G.2 of NUREG-0654/FEMA-REP-1 and it meets the requirements in Appendix E to 10 CFR Part 50, Section IV.D.2. In its response to **RAI 3327, Question 13.03-6.G-1**, the applicant stated that Section G.2 will be revised to describe how often public education and information materials for transient use are disseminated to selected businesses, public buildings, recreational areas, hotels, motels, and campgrounds. This is acceptable because it conforms to the guidance in evaluation criterion G.2 of NUREG-0654/FEMA-REP-1 and meets the requirements in Appendix E to 10 CFR Part 50, Section IV.D.2. **Confirmatory Item 13.03-30** has been created to track this revision.

13.3C.7.4 Points of Contact for the News Media

Technical Information in the Plan: [G.3.a] Section G.3, “News Media Coordination,” and Section G.4, “Information Exchange,” in the CPNPP, Units 3 and 4, Emergency Plan states that the Information Liaison and a Company Spokesperson, has access to required information and provides plant status and company information during news conferences and media briefings. These persons will be the primary contacts to the news media. Federal, State, and local public information personnel will also be available during news conferences. Section G.3 states the Joint Information Center (JIC) is located in the Granbury City Hall at 116 West Bridge, in Granbury, Texas. Section G.3, states that the JIC provides space for approximately 75 media personnel. The JIC is activated at a Site Area Emergency (SAE) or higher emergency classification. The dissemination of emergency-related information will be coordinated from this location. Annex W, “Fixed Nuclear Facility,” of the Hood and Somervell County Emergency Plans, state that news briefings will be held from the licensee’s JIC, and also identifies Granbury City Hall as the JIC in the plan. The State of Texas, Annex D, Tab 1, Ch.1, III, B.2, “News Center (Joint Information Center),” states that the JIC will be located in the Hood County Courthouse within Granbury City Hall. In addition, ITAAC 4.1 was proposed by the applicant to ensure that space is provided for limited number of news media.

Technical Evaluation: [G.3.a] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately designates the points of contact and physical locations for use by news media during an emergency and that the CPNPP, Units 3 and 4, Emergency Plan also describes space, which may be used for a limited number of the news media at the EOF. This is acceptable because it conforms to the guidance provided in G.3.a of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.7.5 Space for News Media

Technical Information in the Plan: [G.3.b] Section G.3, “News Media Coordination,” of the CPNPP, Units 3 and 4, Emergency Plan provides information regarding the JIC. In **RAI 3327, Question 13.03-6.G-2**, the staff requested additional information regarding whether there is space for a limited number of news media at the near-site EOF. In its response, the applicant stated that space is not provided in the EOF for news media. Instead, the JIC serves as the single point of dissemination of information to the media. The applicant has proposed emergency planning ITAAC 4.1 to ensure that the licensee has provided space at the Granbury City Hall which may be used for a limited number of the news media.

Technical Evaluation: [G.3.b] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately describes space which may be used for the news media at the emergency operations facility and is acceptable because it conforms to the guidance in G.3.b of NUREG-

0654/FEMA-REP-1, Revision 1. The adequacy of proposed planning ITAAC 4.1 is addressed in Section 13.3C.19, "Emergency Planning ITAAC."

13.3C.7.6 Designated Spokesperson

Technical Information in the Plan: [G.4.a] Section G.4, "Information Exchange," states that a Company Spokesperson will have access to required information and will provide plant status and company information during news conferences and media briefings. An Information Liaison is also identified in Section G.4 as another primary contact for news media. Applicant liaisons coordinate with designated members of the State of Texas, Somervell, and Hood County EROs.

Technical Evaluation: [G.4.a] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately identifies a spokesperson that has access to all necessary information. This is acceptable because it conforms to the guidance provided in G.4.a of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.7.7 Timely Exchange of Information

Technical Information in the Plan: [G.4.b] Section G.4, "Information Exchange," of the CPNPP, Units 3 and 4, Emergency Plan states that applicant liaisons coordinate on a periodic basis with designated members of the State of Texas, Somervell, and Hood County EROs.

Technical Evaluation: [G.4.b] The staff finds the CPNPP, Units 3 and 4, Emergency Plan adequately describes established arrangements for the exchange of information among designated spokespersons. This is acceptable because it conforms to the guidance in G.4.b of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.7.8 Rumor Control

Technical Information in the Plan: [G.4.c] Section G.4, "Information Exchange," of the CPNPP, Units 3 and 4, Emergency Plan states that rumor control is accomplished with ongoing communications between the Company Spokesperson and Offsite Response Organizations. Additionally, the applicant has a Rumor Control Coordinator and Rumor Control Aids which are located in the JIC. These personnel identify rumors, contact the appropriate individuals to obtain correct information and disseminate accurate information to representatives in the JIC. Inquiries from customers are handled by Customer Contact Centers. Hood and Somervell County Emergency Plans state that independent news dissemination to the press will be discouraged in order to minimize rumors. The State of Texas Emergency Plan states office space for rumor control is within the JIC.

Technical Evaluation: [G.4.c] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately describes coordinated arrangements for dealing with rumors. This is acceptable because it conforms to the guidance in G.4.c of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.7.9 Annual Media Orientation

Technical Information in the Plan: [G.5] Section G.5, "News Media Training," of the CPNPP, Units 3 and 4, Emergency Plan states that news media organizations are provided information and a briefing on an annual basis regarding emergency plans, radiation hazards, and points of contact for release of public information during an emergency. County plans concur that news media are provided information and a briefing on an annual basis.

Technical Evaluation: [G.5] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately describes coordinated programs that will be conducted at least annually to acquaint news media with the emergency plans, information concerning radiation, and points of contact for release of public information in an emergency. This is acceptable because it conforms to the guidance in G.5 of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.7.10 Conclusion

The staff has reviewed the CPNPP, Units 3 and 4, Emergency Plan and the responses to **RAIs 3327, Questions 13.03-6.G-1 and 13.03-6.G.2**, in regards to Planning Standard G, Public Education and Information of NUREG-0654/FEMA-REP-1 and Applicable Regulation. The staff concludes that with the information provided in the CPNPP, Units 3 and 4, Emergency Plan and the responses to **RAIs 3327, Questions 13.03-6.G-1 and 13.03-6.G.2**, which are being tracked as **Confirmatory Item 13.03-30**, regarding public education and information is acceptable and meets the requirements of 10 CFR 50.47(b)(7) because it complies with the guidance in Planning Standard G of NUREG-0654/FEMA-REP-1, and the applicable portions of Appendix E to 10 CFR Part 50 as described above.

13.3C.8 Emergency Facilities and Equipment

13.3C.8.1 Regulatory Basis

In determining whether the proposed emergency plan met the applicable regulatory requirements in 10 CFR 50.47(b)(8), the staff evaluated it against the detailed evaluation criteria in NUREG-0654/FEMA-REP-1, Revision 1. The staff also evaluated the proposed emergency plan against applicable regulatory requirements related to the area of “Emergency Facilities and Equipment,” in Appendix E to 10 CFR Part 50, 10 CFR 50.34, and 10 CFR 50.72. In addition, the staff evaluated the proposed emergency plan against the guidance in Supplement 1 to NUREG-0737, “Clarification of TMI Action Plan Requirements.”

Technical Support Center

13.3C.8.2 Technical Support Center Functions

Technical Information in the Emergency Plan: [H.1] {Appendix E, Section IV.E.8} (8.2.1.a) Section H.1, “Onsite emergency Response Facilities,” provides descriptions and functions for a TSC and an OSC. There is one TSC for each unit. TSC functions include management and technical support to operations personnel during emergency conditions, relieving reactor operators of peripheral duties and communications, preventing congestion in the control room, performing EOF actions until the EOF is activated, providing primary communications during emergency conditions and providing technical support following an emergency. The applicant has proposed emergency planning ITAAC 5.1.1 to address floor area, location and habitability of the TSC.

Technical Evaluation: [H.1] {Appendix E, Section IV.E.8} (8.2.1.a) The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately describes the TSC functions. This is acceptable because it meets the guidance criteria identified in H.1 of NUREG-0654/FEMA-REP-1, Revision 1, and Criterion 8.2.1.a of Supplement 1 to NUREG-0737, and meets the regulatory requirements identified in Appendix E to 10 CFR Part 50, Section IV.E.8. The evaluation of emergency planning ITAAC is in Section 13.3C.19 of this FSER.

13.3C.8.3 TSC Location

Technical Information in the Emergency Plan: (8.2.1.b) (50.34(f)(2)(xxv)) Section H.1, of the CPNPP, Units 3 and 4, Emergency Plan “Onsite Emergency Response Facilities,” states that the TSC is located in the access building, near the main control room (MCR) in the reactor building. The TSC has technical data displays and plant records available to assist in the detailed analysis and diagnosis of abnormal plant conditions and any significant release of radioactivity to the environment. Specifically, the applicant described the following TSC functions:

- The TSC provides telephones and facsimiles, which are utilized by multiple methods of telecommunication, including private and public lines, satellite communications, and ample working areas for all personnel.
- The TSC performs EOF functions for alert emergency class, for site area emergency class, and for general emergency class until the EOF is functional.
- The TSC has facilities to support the plant management and technical personnel who are assigned there during an emergency.
- The TSC facility includes a plant data display system consisting of visual display units and a large display panel. This equipment and its power supplies are redundant. The TSC displays include:
 - Plant system variables
 - In-plant radiological information
 - Meteorological information
 - Offsite radiological information
- The TSC is located close to the main control room, which is located in the A/B. The walking time from the TSC to the MCR does not exceed two minutes. DCD Tier 2 Figure 1.2-6, “Power Block at Elevation 25’-3” - Plan View,” shows the location of the TSC.

Technical Evaluation: (8.2.1.b) (50.34(f)(2)(xxv)) The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately describes the TSC location. This is acceptable because it meets the applicable regulatory guidance in Section 8.2.1.b of Supplement 1 to NUREG-0737, and 10 CFR 50.34(f)(2)(xxv).

13.3C.8.4 TSC Staffing, Size, and Equipment

Technical Information in the Emergency Plan: (8.2.1.c and j) Section H.1, “Onsite Emergency Response Facilities,” and H.2, “Offsite Emergency Response Facilities,” of the CPNPP, Units 3 and 4, Emergency Plan provide descriptions of activation and staffing of emergency response facilities. Table II-2, “Plant Staffing Requirements for Emergencies,” lists TSC and EOF staff, including managers, technicians, and engineering team members.

Section H.1 of the CPNPP, Units 3 and 4, Emergency Plan states that the TSC is sized for a minimum of 25 persons, with about 75 square feet per person and has supporting equipment

necessary to communicate and assess emergency conditions. Additionally, the CPNPP, Units 3 and 4, Emergency Plan explains that the size and layout of the TSC gives the necessary space to maintain and repair the TSC equipment, and is sufficient for storage of plant records and historical data.

Technical Evaluation: (8.2.1.c and j) The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately describes TSC staffing, size, and equipment. This is acceptable because it meets the regulatory guidance contained in Sections 8.2.1.c. and j of Supplement 1 to NUREG-0737.

13.3C.8.5 TSC Structure

Technical Information in the Emergency Plan: (8.2.1.d) Section H.1 of the CPNPP, Units 3 and 4, Emergency Plan describes the TSC as a facility, which is designed to provide a location for plant management and technical support staff to assemble and provide support to the CR. The TSC is located in the access building, near the CR in the RB. Section 1.2.1.7.1, "General Plant Arrangement," of the DCD states that other structures, which would include the access building, are designed to ANSI, American Society of Civil Engineers, and other applicable codes, and meet non-seismic category requirements.

Technical Evaluation: (8.2.1.d) The staff finds that the CPNPP, Units 3 and 4, application adequately describes the TSC structure. This is acceptable because it meets the applicable regulatory guidance in Section 8.2.1.d of Supplement 1 to NUREG-0737.

13.3C.8.6 TSC Environmental Controls

Technical Information in the Emergency Plan: (8.2.1.e) Section H of the CPNPP, Units 3 and 4, Emergency Plan states that the TSC is provided with reliable power and backup power supplies. Power for vital information systems is provided by reliable power supplies including a battery backed uninterruptible power supply system. The heating, ventilation, air conditioning (HVAC) system for the TSC with site-specific information can be found in the FSAR Section 9.4.1, "Control Room Area Ventilation System." Emergency planning ITAAC 5.1.1 has been proposed to test the following Acceptance Criteria: Table 2.5.4-2 DC#1, Table 2.7.6.10-1 DC #4, Table 2.9-1 DC #7k, and Table 2.10-1 DCs #1, 2, 3. Site specific information related to this section for CR area ventilation is evaluated in SE Section 9.4.1.

Technical Evaluation: (8.2.1.e) The staff finds that the CPNPP, Unit 3 and 4, application adequately describes the TSC environmental controls. The reliable power supplies ensure that the TSC will be environmentally controlled to provide room air temperature, humidity and cleanliness appropriate for personnel and equipment. The information contained in the CPNPP, Units 3 and 4, COLA is acceptable because it meets the applicable regulatory guidance in Section 8.2.1.e of Supplement 1 to NUREG-0737. The staff's technical evaluation of the Emergency Planning ITAAC is addressed in Section 13.3C.19, "Emergency Planning ITAAC."

13.3C.8.7 TSC Radiological Protection

Technical Information in the Emergency Plan: (8.2.1.f) Section H.5, "On-site Monitoring Systems," states that in addition to habitability provisions for the TSC, OSC, and EOF, there is airborne radioactivity and external gamma radiation monitoring, including for radioiodine and noble gas, as well as portable equipment. Section H.5 also states that the Radiation Protection Department maintains a health physics laboratory and portable radiation monitoring and

sampling equipment, including emergency response equipment, which is addressed in Appendix 6, "Emergency Equipment and Supplies." The applicant also describes radiological monitoring for selected process streams in the plant, effluent streams released to the environment, alarm activation, data to keep worker doses as low as reasonably achievable (ALARA), and process data for plant operations.

Table 7.5-3 "Post Accident Monitoring (PAM) Variables," of the US-APWR DCD lists "TSC Area Radiation" as an area radiation variable. Section 9.4.3.1.2.4, "Technical Support Center (TSC) HVAC System," of the US-APWR DCD states that the TSC HVAC is designed to exclude entry of airborne radioactivity into the TSC and to remove radioactive material from the TSC envelope so that personnel doses are within the requirements of General Design Criteria 19 (10 CFR 50, Appendix A), which specifies that radiation exposures shall not exceed five rem total effective dose equivalent (TEDE) for the duration of the accident.

Technical Evaluation: (8.2.1.f) {Appendix E, Section IV.E.1} The staff finds that the CPNPP, Units 3 and 4, application adequately describes the TSC radiological protection. The information contained in the CPNPP3&4 COL application is acceptable because it meets the regulatory guidance in Section 8.2.1.f of Supplement 1 to NUREG-0737 and meets the requirements of Appendix E to 10 CFR Part 50, Section IV.E.1.

13.3C.8.8 TSC Communications

Technical Information in the Emergency Plan: (8.2.1.g) FSAR Section 9.5.2, "Communication Systems," lists and describes the physically independent communication systems, including public address system, both onsite and offsite telephone system, SPTS, plant radio, offsite communication systems, and plant security communication systems, which are provided from the CR, TSC and EOF to NRC headquarters and regional office EOCs, including the ERDS. Emergency telephones are dedicated for the emergency notification system, local and state notification, health physics network, plant security and offsite support center.

Section F.1, "Description of Communication Links," of the CPNPP, Units 3 and 4, Emergency Plan states that reliable communications links are maintained within the site and include both voice and facsimile communications using the PABX phone system between the CR, TSC, EOF, OSC, Luminant Corporate Office, NRC, State agencies, county Sheriff's offices and other locations. Site specific information related to this section is evaluated in SER Section 9.5.2.

Technical Evaluation: (8.2.1.g) The staff finds that the information contained in the CPNPP, Units 3 and 4, Emergency Plan acceptable. The CPNPP, Units 3 and 4, Emergency Plan incorporates by reference the US-APWR DCD information related to the communication capabilities of the TSC. The staff has concluded that the TSC communications information contained within the US-APWR DCD meets the applicable regulatory guidance in Section 8.2.1.g of Supplement 1 to NUREG-0737. The staff's complete evaluation of the CPNPP, Units 3 and 4, TSC communication capabilities is contained in SER Section 9.5.2.

13.3C.8.9 TSC Data Collection, Storage, and Analysis

Technical Information in the Emergency Plan: (8.2.1.h) Section H.1, "Onsite Emergency Response Facilities," "Technical Supports Centers," states that display capabilities in the TSC includes a workstation that is capable of displaying parameters required for a Safety Parameter Display System (SPDS) and references US-APWR Design Control DCD Subsection 7.5.1.4,

“Safety Parameter Display System.” Section 7.5.1.4, “Safety Parameter Displays System,” of the US-APWR DCD states that the SPDS design is based on NUREG 0737 Supplement 1, “Clarification of TMI Action Plan Requirements - Requirements for Emergency Response Capability,” with respect to SPDS. NUREG-0737 Supplement 1, Section 6.1, “Requirements,” references the Type A, B, C, D, E variables in RG 1.97 (Revision 2). Section 7.5.1.4, of the US-APWR DCD provides a listing of SPDS parameters for critical areas, states that the computer processing SPDS functions is redundant and is discussed in Topical Report MUAP-07004, “Safety I&C System Description and Design Process,” Section 4.2.5.b. DCD Subsection 7.5.1.1, “Post-Accident Monitoring,” states that parameters are based on the RG 1.97, Revision 4 guidelines. Section 7.5.1.6, “Facilities,” of the US-APWR DCD, states that SPDS information is displayed at all operations support facilities, including the CR, remote shutdown room, TSC, and EOF.

In **RAI 3327, Question 13.03-7.H-3**, the staff requested a discussion regarding how the TSC data will provide at least 2 hours of pre-event and 12 hours of post-event data, consistent with NUREG-0696. In its response, the applicant stated that the US-APWR Standard TSC design was incorporated with no departures and, as such, is committed to the guidance provided in NUREG-0696 including the ability to at least provide 2 hours pre-event and 12 hours of post-event data through the SPDS.

In **RAI 3327, Question 13.03-7.H-6**, the staff requested additional information regarding the reliability of data indicators and associated circuitry in the TSC and EOF. In its response, the applicant stated that the function of the SPDS is described in the DCD, Section 7.5.1.4. The DCD indicated that redundant interface components ensure operations are not adversely affected by credible malfunctions. The applicant also stated that the data interface for the protection safety and monitoring system is physically and functionally isolated so the safety system is not affected in the event of a SPDS component failure.

Section H.6, “Access to Data from Monitoring Systems,” describes capabilities for obtaining meteorological, seismic, flooding, and radiological data. Section 11.5, “Process Effluent Radiation Monitoring and Sampling Systems,” of the US-APWR DCD describes radiological monitoring for selected process streams in the plant, effluent streams released to the environment, alarm activation, data to keep worker doses ALARA, and process data for plant operations.

Section 9.3.2, “Process and Post-Accident Sampling Systems,” of the US-APWR DCD, incorporated by reference, states that the post-accident sampling system (PASS) is designed to obtain post-accident liquid samples from reactor coolant and refueling water storage pit water for analysis of boron, dissolved gas concentration, pH, fission product and chloride concentration and to collect representative post-accident gaseous samples from the containment atmosphere for analysis of fission product gas and hydrogen concentration, within predetermined times to augment plant monitoring capability in the long term. There are two sampling lines, one for liquid and the second for containment atmosphere. Both lines are designed to obtain samples into dedicated sample vessel with lead shielding to minimize radiation exposure and protect the operator from radiation exposure.

Technical Evaluation: (8.2.1.h) As described above, the CPNPP, Units 3 and 4, Emergency Plan describes the TSC as a facility that will be capable of reliable data collection, storage, analysis, display and communication sufficient to determine site and regional status, determine changes in status and take appropriate actions. This is acceptable because it meets the criteria identified in Section 8.2.1.h of NUREG-0737. The staff finds the additional information provided

by the applicant in response to **RAIs 3327, Questions 13.03-7.H-3 and 13.03-7.H-6**, to be acceptable.

13.3C.8.10 TSC Human Factors Engineering

Technical Information in the Emergency Plan: (8.2.1.h and k) The CPNPP, Units 3 and 4, COLA states, in part, that MCR boards are designed to allow easy operation and reduce the likelihood of misoperation and misjudgment and that this same human-system interface (HSI) includes the TSC and EOF. Section 18.1.1.2, "Applicable Plant Facilities," of the US-APWR DCD, states that the Human Factors Engineering (HFE) program addresses the TSC. The goals, scope, assumptions, and constraints of the human factors engineering design is described and evaluated by the staff in Section 18 of this SE.

Technical Evaluation: (8.2.1.h and k) As evaluated in Section 18 of this SE, the staff finds that the CPNPP, Units 3 and 4, application adequately describes the TSC functions of Data Collection, Storage, and Analysis. This is acceptable because it meets the applicable regulatory guidance in Section 8.2.1.h and k of Supplement 1 to NUREG-0737.

13.3C.8.11 TSC Plant Records

Technical Information in the Emergency Plan: (8.2.1.i) Section A.1.iv.1, "Technical Support Center," states that the TSC is equipped with plant drawings and procedures.

Technical Evaluation: (8.2.1.i) The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately describes the TSC Plant Records function. This is acceptable because it meets the applicable regulatory guidance in Section 8.2.1.i of Supplement 1 to NUREG-0737.

13.3C.8.12 TSC Activation

Technical Information in the Emergency Plan: [H.4] Section H.1 states that personnel that are assigned to the TSC are notified at the Alert level and higher and should activate the TSC as soon as possible with a goal of sixty minutes. Table II-2, "Plant Staffing Requirements for Emergencies," lists TSC and EOF staff, including managers, technicians, and engineering team members among others, with some at 40 minutes, but most at 70 minutes. NUREG-0696, Section 2.3, "Staffing and Training," states that the TSC shall achieve full functional operation within 30 minutes. In **RAI 3327, Question 13.03-7.H-8**, the staff requested information regarding how the goal of 60 minutes to activate the TSC meets the guidance in NUREG-0696. In its response, the applicant stated that EPP-204, "Activation and Operation of the Technical Support Center (TSC)," indicates that a goal of activating the TSC in 60 minutes has been used by CPNPP, Units 1 and 2, in numerous drills and exercises with the NRC and has been found acceptable. In its response, the applicant described EPP-204, "Activation and Operation of the Technical Support Center (TSC)," which identifies a goal of 60 minutes. Appendix 5 of the Emergency Plan indicates that a procedure for Activation and Operation of the TSC will be developed. Designated plant personnel, whose positions are described in Section II.B, "Onsite Emergency Organization," assemble in the OSC in order to provide support to the control room and the TSC.

Technical Evaluation: [H.4] As described above, the staff finds that the CPNPP, Units 3 and 4, Emergency plan provides for timely activation and staffing of the facilities and centers as described in evaluation criterion H.4 of NUREG-0654/FEMA-REP-1. The staff finds the

additional information provided by the applicant in response to **RAI 3327, Question 13.03-7.H-8** to be acceptable.

Operations Support Center (OSC)

13.3C.8.13 OSC Functions

Technical Information in the Emergency Plan: [H.1] (8.3.1.a) Section H.1, "Onsite emergency Response Facilities," provides a description and the functions for an OSC. Section H.1 states that, the single, common OSC provides necessary supporting resources for assembling designated support personnel in a centralized area during emergency conditions, which permits personnel at the OSC to be assigned duties that support emergency operations.

Technical Evaluation: [H.1] (8.3.1.a) The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately describes the OSC functions. This is acceptable because it meets the applicable regulatory guidance in Section 8.3.1.a of Supplement 1 to NUREG-0737 and conforms to the guidance described Section H.1 of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.8.14 OSC Location

Technical Information in the Emergency Plan: (8.3.1.b) (50.34(f)(2)(xxv)) Section H.1, "Onsite Emergency Response Facilities, Operations Support Center," states that an OSC is common to CPNPP, Units 3 and 4, and is located in the Maintenance Building, which is not in the RB where the CR is located. The Maintenance Building is located on site between the two units, as shown in FSAR Figure 1.2-1R, "Comanche Peak Units 3 & 4 Site Plan (Sheet 2 of 2)." Designated plant personnel, whose positions are described in Section II.B, "Onsite Emergency Organization," assemble in the OSC in order to provide assessment, corrective action and rescue support to the CR and the TSC. Section H.1 also states that the OSC is not designed to be habitable in all emergencies, but EPPs provide for relocating the OSC if needed, with the Emergency Coordinator directing relocation. The applicant has proposed emergency planning ITAAC 5.1.2 to inspect the as-built OSC.

Technical Evaluation: (8.3.1.b) (50.34(f)(2)(xxv)) The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately describes the OSC location. This is acceptable because it conforms to the guidance described in Section 8.3.1.b of Supplement 1 to NUREG-0737 and 10 CFR 50.34(f)(2)(xxv). The evaluation of emergency planning ITAAC is in Section 13.3C.19 of this FSER.

13.3C.8.15 OSC Coordination Activities

Technical Information in the Emergency Plan: (8.3.1.a) Section A.1.iv.3, "Operations Support Center," states that the OSC Manager is responsible for dispatching repair and damage control teams as directed by the Emergency Coordinator when the EOF is not operational. However, when the EOF is operational, the EOF Manager assumes command and control from the Emergency Coordinator. Designated plant personnel, whose positions are described in Section II.B, "Onsite Emergency Organization," assemble in the OSC in order to provide support to the CR and the TSC.

Technical Evaluation: (8.3.1.a) The NRC finds that the CPNPP, Units 3 and 4, Emergency Plan adequately describes the OSC Coordination Activities functions. This is acceptable

because it conforms to the regulatory guidance in Section 8.3.1.a of Supplement 1 to NUREG-0737.

13.3C.8.16 OSC Communications

Technical Information in the Emergency Plan: (8.3.1.c) Section F.1, "Description of Communication Links," states that reliable communications links are maintained within the site and includes both voice and facsimile communications using the PABX phone system between the CR, TSC, EOF, OSC, and other locations.

Section 9.5.2.2, "System Description," of Section 9.5.2, "Communication Systems," of the US-APWR DCD lists and describes the physically independent communication systems, including the public address system, both onsite and offsite telephone system, SPTS, plant radio, offsite communication systems, and plant security communication systems, which are provided from the CR, TSC and EOF to NRC headquarters and regional office EOCs, including the ERDS. In **RAI 3327, Question 13.03-7.H-2**, the staff requested information regarding whether the "Offsite support center" listed in DCD Section 9.5.2.2.2 is the OSC, which is onsite. In its response, the applicant stated that the OSC discussed in Section 9.5.2.2 of the DCD is not the OSC. Section II.F.1 of the Emergency Plan specifies that voice and facsimile communications capability to the OSC is provided via the PABX telephone system. Additional information related to the CPNPP, Units 3 and 4, communication systems can be found in Section 9.5.2 of this SE.

Technical Evaluation: (8.3.1.c) As described above, the staff finds that the CPNPP, Units 3 and 4, Emergency Plan describes OSC communications. The staff finds the additional clarifying information provided by the applicant in response to **RAI 3327, Question 13.03-7.H-2**, to be acceptable because it meets the criteria identified in Section 8.3.1.c of Supplement 1 to NUREG-0737.

13.3C.8.17 OSC Activation and Staffing

Technical Information in the Emergency Plan: [H.4] Section H.1, "Onsite Emergency Response Facilities," and H.2, "Offsite Emergency Response Facilities," provide descriptions of activation and staffing of emergency response facilities. Section H.4, "Activation and Staffing of Emergency Response Facilities," states that the State of Texas and Hood and Somervell County emergency response personnel staff their facilities consistent with their plans. Designated plant personnel, whose positions are described in Section II.B, "Onsite Emergency Organization," assemble in the OSC in order to provide assessment, corrective action and rescue support to the control room and the TSC. The Operations Support Center Manager is responsible for dispatching and coordinating personnel. OSC staff primarily dispatch personnel as directed by the TSC and CR.

Technical Evaluation: [H.4] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately provides for the activation and staffing of the emergency facilities and centers. This is acceptable because it conforms to the guidance described in evaluation criterion H.4 of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.8.18 OSC Capacity and Supplies

Technical Information in the Emergency Plan: [H.9] Section H.1, “Onsite Emergency Response Facilities,” states that the OSC is sized to accommodate 50 emergency response support personnel.

Section H.10, “Emergency Equipment and Supplies,” states that Appendix 6, “Emergency Equipment and Supplies,” provides a general listing by category of emergency equipment and supplies including respiratory protection, protective clothing, portable lighting, portable radiation monitoring equipment, dosimetry, contamination control, cameras and communications equipment for personnel present in the OSC. Appendix 6 states that one of the places that this equipment is stored onsite is the OSC.

Technical Evaluation: [H.9] The staff finds the CPNPP, Units 3 and 4, Emergency Plan adequately describes the OSC capacity and supplies. This is acceptable because it conforms to the guidance in evaluation criterion H.9 of NUREG-0654/FEMA-REP-1, Revision 1.

Emergency Operations Facility (EOF)

13.3C.8.19 EOF Functions

Technical Information in the Emergency Plan: [H.2] {Appendix E, Section IV.E.8} Section H.2, “Offsite Emergency Response Facilities,” describes the functions of the EOF to include management of overall response in an emergency, coordination of radiological and environmental assessment, determination of public protective action recommendations and coordination of emergency response activities with Federal, state, and local agencies.

Technical Evaluation: [H.2] {Appendix E, Section IV.E.8} (8.4.1.a) The staff finds the CPNPP, Units 3 and 4, Emergency Plan adequately describes the EOF functions. This is acceptable because it conforms to the guidance in evaluation criterion H.2 of NUREG-0654/FEMA-REP-1, Revision 1, Section 8.4.1.a of Supplement 1 to NUREG-0737, and the requirements of Appendix E to 10 CFR Part 50, Section IV.E.8.

13.3C.8.20 EOF Location

Technical Information in the Emergency Plan: (8.4.1.b) (50.34(f)(2)(xxv)) Section H.2, “Offsite Emergency Response Facilities,” states that the EOF is located about 0.1 miles from the exclusion area boundary on the Plant Road in the Nuclear Operations Support Facility (NOSF). Section H.2, “Offsite Emergency Response Facilities,” states that the EOF in the Hood County Law Enforcement Center may be used as an alternate in the event the EOF is evacuated and that radiological assessment may be relocated to the state’s mobile radiological lab. The applicant has proposed emergency planning ITAAC 5.2 to inspect the constructed EOF.

Technical Evaluation: (8.4.1.b) (50.34(f)(2)(xxv)) The staff finds the CPNPP, Units 3 and 4, Emergency Plan adequately describes the EOF location. This is acceptable because it conforms to the guidance in Section 8.4.1.b of Supplement 1 to NUREG-0737 and regulations in 10 CFR 50.34(f)(2)(xxv). The evaluation of emergency planning ITAAC is in Section 13.3C.19 of this FSER.

13.3C.8.21 EOF Size

Technical Information in the Emergency Plan: (8.4.1.c) Section H.2, “Offsite Emergency Response Facilities,” states that the EOF is sized for 35 persons, including Federal, state, and

local emergency personnel, with a floor space of about 2,625 square feet, which is consistent with NUREG-0696. The section also states that the EOF is sized to provide work space for EOF assigned personnel, Data Display Equipment, communication equipment and access to it, storage and access to plant records and historical data, and private space for NRC consultations.

Technical Evaluation: (8.4.1.c) The staff finds the CPNPP, Units 3 and 4, Emergency Plan adequately describes the EOF size requirements. This is acceptable because it conforms to the guidance in Section 8.4.1.c of Supplement 1 to NUREG-0737.

13.3C.8.22 EOF Structural Capabilities

Technical Information in the Emergency Plan: (8.4.1.d) Section H.2, "Offsite Emergency Response Facilities," states that the EOF is designed consistent with guidance in NUREG-0696 and NUREG-0737 Supplement 1. The floor space is approximately 2,625 square feet, and the EOF is designed and equipped for continuous operations over an extended time period.

Technical Evaluation: (8.4.1.d) The staff finds the CPNPP, Units 3 and 4, Emergency Plan adequately describes the EOF structural capabilities. This is acceptable because it conforms to the guidance in Section 8.4.1.d of Supplement 1 to NUREG-0737.

13.3C.8.23 EOF Environmental Requirements

Technical Information in the Emergency Plan: (8.4.1.e) Section H.2, "Offsite Emergency Response Facilities," states that the EOF is designed and equipped for continuous operations over an extended time period. In **RAI 3327, Question 13.03-7.H-9**, the staff requested information regarding the environmental or HVAC system that provides temperature, humidity and cleanliness suitable for personnel and equipment in the EOF. In its response, the applicant stated that the EOF is the same facility used for CPNPP, Units 1 and 2, and the applicant described the special shielding and ventilation provisions provided for habitability. Section H.5, "Onsite Monitoring Systems," states that in addition to habitability provisions for the EOF, there is airborne radioactivity and external gamma radiation monitoring, including for radioiodines and noble gas, as well as portable equipment.

Technical Evaluation: (8.4.1.e) As described above, the staff finds that the CPNPP, Units 3 and 4, Emergency Plan describes the EOF environmental requirements consistent with Section 8.4.1.e of Supplement 1 to NUREG-0737. The staff finds the additional information provided by the applicant in response to **RAI 3327, Question 13.03-7.H-9**, to be acceptable because it describes use of the same facility that is currently successfully used for CPNPP, Units 1 and 2, as well as the use of special provisions provided for habitability and radiation protection and monitoring. This facility, as described, conforms to the guidance in Section 8.4.1.e of Supplement 1 to NUREG-0737.

13.3C.8.24 EOF Voice and Data Communications and Information Collection

Technical Information in the Emergency Plan: (8.4.1.f) Section F.1, "Description of Communication Links," states that reliable communications links are maintained within the site and includes both voice and facsimile communications using the PABX phone system between the CR, TSC, EOF, OSC, Luminant Corporate Office, NRC, State agencies, county Sheriff's offices and other locations.

Section H.2, "Offsite Emergency Response Facilities," states that the EOF has redundant communications with the TSC and appropriate support agencies that are offsite, as well as technical EOF Data Display Equipment and is sized to provide work space for EOF assigned personnel, communication equipment and access to it, access to plant records and historical data, and private space for NRC consultations. Section H.2, states that the EOF has technical data displays to help EOF personnel diagnose plant conditions and evaluate potential or actual releases of radioactive materials to the environment. In **RAI 3327, Question 13.03-7.H-6**, the staff requested additional information regarding the reliability of data indicators and associated circuitry in the TSC and EOF. In its response, the applicant stated that the function of the SPDS is described in the DCD, Section 7.5.1.4. The DCD indicates that redundant interface components ensure operations are not adversely affected by credible malfunctions. The applicant also stated that the data interface for the protection safety and monitoring system is physically and functionally isolated so the safety system is not affected in the event of a SPDS component failure.

Technical Evaluation: (8.4.1.f) As described above, the staff finds that the CPNPP, Units 3 and 4, Emergency Plan describes the EOF voice and data communications and information collection requirements consistent with Section 8.4.1.f of Supplement 1 to NUREG-0737. The staff finds the additional information provided by the applicant in response to **RAI 3327, Question 13.03-7.H-6**, to be acceptable because it describes redundant interface components and the physical and functional separation of the data interface for the protection safety and monitoring system, to ensure that the system is not affected in the event of the failure of other components. This system, as described, conforms to the guidance in Section 8.4.1.f of Supplement 1 to NUREG-0737.

13.3C.8.25 EOF Information Storage and Analysis

Technical Information in the Emergency Plan: (8.4.1.g) Section H.2, "Offsite Emergency Response Facilities," states that the EOF has technical data displays to help personnel in the diagnosis of plant conditions and evaluation of potential or actual radioactive materials releases to the environment. Radiological Assessment personnel located at the NOSF, which is where the EOF is also located, are the central point for offsite monitoring data results and provide the resources for evaluation and recommendations.

Section H.2, "Offsite Emergency Response Facilities," states that the EOF is sized to provide work space for EOF assigned personnel, Data Display Equipment, communication equipment and access to it, storage and access to plant records and historical data, and private space for NRC consultations. In **RAI 3327, Question 13.03-7.H-4.A**, the staff requested additional information discussing that circuit transients or power supply failures and fluctuations will not result in a loss of stored data vital to the EOF functions. In its response, the applicant stated that DCD Subsection 7.1.1.9 discusses the data communication system which contains data links for point-to-point communication and an input/output bus for each controller. The station bus provides information to plant personnel and to the EOF. Thus fluctuations which could potentially affect the EOF will not result in a loss of stored data vital to EOF functions. In **RAI 3327, Question 13.03-7.H-4.B**, the staff requested additional information discussing whether the data storage for the EOF data is sufficient to store at least 2 hours of pre-event data and 12 hours of post-event data. In its response, the applicant stated that EOF data storage of at least 2 hours pre-event and 12 hours post event is available via the SPDS function and is identical to the TSC data storage.

In **RAI 3327, Question 13.03-7.H-4.C**, the staff requested additional information regarding the availability of the EOF data system during plant conditions above cold shutdown. In its response, the applicant stated that the EOF incorporates the US-APWR standard design with no departures and references Section 7 of the US-APWR DCD, which describes the data systems.

Technical Evaluation: (8.4.1.g) As described above, the staff finds that the CPNPP, Units 3 and 4, Emergency Plan describes the EOF information storage and analysis of technical information. The staff finds the additional information provided by the applicant in response to **RAIs 13.03-7.H-4.A, B, and C** to be acceptable because those responses ensure adequate EOF data storage via the SPDS function in a manner identical to the TSC data storage, and provide for the availability of the EOF data system during plant conditions above cold shutdown by incorporating Section 7 of the US-APWR DCD, which describes the data systems, with no departures and references. These responses are consistent with the guidance in Section 8.4.1.g of Supplement 1 to NUREG-0737 and are therefore acceptable.

13.3C.8.26 EOF Plant Records

Technical Information in the Emergency Plan: (8.4.1.h) Section H.2, “Offsite Emergency Response Facilities, Emergency Operations Facility,” states that the EOF has space for storage and access to plant records, historical data, procedures, emergency plans and references, including CPNPP, Units 3 and 4 FSAR, TS, normal and emergency Operating Instructions, Offsite Population Distribution Data, and Evacuation Plans. In **RAI 3327, Question 13.03-7.H-7**, the staff requested additional information regarding whether the US-APWR DCD is available as a reference. In its response, the applicant stated that the DCD will be provided at the EOF.

Technical Evaluation: (8.4.1.h) As described above, the staff finds that the CPNPP, Units 3 and 4, Emergency Plan and the applicant’s response to **RAI 3327, Question 13.03-7.H**, describes the access to, storage of EOF plant records and emergency response procedures. In its response to **RAI 3327, Question 13.03-7.H-7**, the applicant will revise Section II.H.2 of the Emergency Plan to include the DCD and indicate that documents provided at the EOF are maintained current. This is acceptable because including a copy of the US-APWR DCD in the plant records conforms to the guidance in Section 8.4.1.h of Supplement 1 to NUREG-0737. **Confirmatory Item 13.03-31** has been created to track this revision.

13.3C.8.27 EOF Industrial Security

Technical Information in the Emergency Plan: (8.4.1.j) Section H.2, “Offsite Emergency Response Facilities, Emergency Operations Facility,” states that when it is activated, security protection is upgraded to restrict access to the EOF to personnel assigned to the EOF. In **RAI 3327, Question 13.03-7.H-5**, the staff requested information regarding whether the EOF has industrial security during non-activated times, to ensure its readiness for use. In its response, the applicant stated that the EOF remains locked when it is not being used for emergency response or emergency preparedness activities. Only personnel who are authorized by the applicant have access to the facility.

Technical Evaluation: (8.4.1.j) As described above, the staff finds that the CPNPP, Units 3 and 4, Emergency Plan describes the EOF industrial security for an EOF. The staff finds the additional information provided by the applicant in response to **RAI 3327, Question 13.03-7.H-5** to be acceptable because it conforms to Section 8.4.1.j of Supplement 1 to NUREG-0737.

13.3C.8.28 EOF Human Factors

Technical Information in the Emergency Plan: (8.4.1.k) Section 1.2.1.5.7, “Main Control Room and Other Human-System Interface,” of the US-APWR DCD states that MCR boards are designed to allow easy operation and reduce the likelihood of misoperation and misjudgment and that this same HSI includes the TSC and EOF. Section 18.1.1.2, “Applicable Plant Facilities,” of the US-APWR DCD, states that the HFE program addresses the communications and information requirements of the EOFs. The site specific HFE team, using the HFE program, is to design the EOF and specify the communication system requirements, while the US-APWR HFE team specifies the EOF information in accordance with requirements and guidance, including SPDS, meteorological, off-site radiation and PAM.

Technical Evaluation: (8.4.1.k) The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately describes the EOF Human Factors Engineering functions. This is acceptable because it meets the applicable regulatory guidance in Section 8.4.1.k of Supplement 1 to NUREG-0737. SER Section 18 provides information on and the staff’s evaluation of the HFE Program as it relates to Emergency Planning.

13.3C.8.29 EOF Activation and Staffing

Technical Information in the Emergency Plan: [H.4] (8.4.1.i) Section A.1.iv.2, “Emergency Operations Facility,” states that the EOF is staffed by applicant personnel and the EOF Manager directs the facility activities. Section H.4, “Activation and Staffing of Emergency Response Facilities,” states that State of Texas and Hood and Somervell County emergency response personnel staff their facilities consistent with their plans. Additional information pertaining to staff augmentation can be found in Section 13.3C.2.7, “On-shift and Augmentation Emergency Response,” of this SE.

Technical Evaluation: [H.4] (8.4.1.i) The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately addresses the EOF activation and staffing. This is acceptable because it conforms to the guidance in evaluation criterion H.4 of NUREG-0654/FEMA-REP-1, Revision 1, and Section 8.4.1.i of Supplement 1 to NUREG-0737.

Other Emergency Facilities and Equipment

13.3C.8.30 Onsite Monitoring System

Technical Information in the Emergency Plan: [H.5] Section H.5, “Onsite Monitoring Systems,” states that onsite monitoring systems to provide data for initiating emergency measures and performing accident assessment is provided and includes geophysical phenomena, radiological conditions, plant processes and fire hazards. Section H.8, “Meteorological Instrumentation and Procedures,” lists the onsite monitored parameters, from a primary and backup tower, as wind speed and direction, temperature and precipitation and states that meteorological data can be obtained from the National Weather Service Fort Worth office. Section 2.3.3, “Onsite Meteorological Measurements Program,” of the FSAR, provides details of the instrumentation and accuracy, meeting the criteria established in ANSI/ANS-2.5-1984, which is endorsed by RG 1.23. Section 3.7.4, “Seismic Instrumentation,” of the DCD provides detailed information concerning the seismic monitoring system. In addition, Section 3.7.4.1, “Comparison with Regulatory Guide 1.12,” of the FSAR and the following 3.7.4 sections also provide descriptive information concerning the seismic monitoring system. Section 9.5.1,

“Fire Protection Program,” of the US-APWR DCD describes the fire protection program, including fire detection, alarm and suppressions systems.

Technical Evaluation: [H.5] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately describes onsite monitoring systems that provide data on geophysical phenomena, radiological conditions, plant processes, fire hazards, meteorological conditions, seismic activity, and provides details of the instrumentation used and its accuracy. This is acceptable because it conforms to the guidance provided in evaluation criterion H.5 of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.8.31 Provisions to Acquire Data from Offsite Sources

Technical Information in the Emergency Plan: [H.6] Section H.6, “Access to Data from Monitoring Systems,” provides the references to back-up or offsite data capabilities and states that back-up seismic data is available from the U.S. Geological Survey and flooding data is available from National Oceanic and Atmospheric Administration Hydro-Meteorological Reports. Section H.6 states that in addition to the onsite chemical and radiochemical laboratories, resources are available from the TDSHS mobile laboratory, chemical and radiochemical laboratories at other nuclear utilities coordinated by the INPO and the South Texas Project, with TDSHS being the staging area for field sample receipt. Section H.8, “Meteorological Instrumentation and Procedures,” states that meteorological data can also be obtained from the National Weather Service in Fort Worth, Texas.

Technical Evaluation: [H.6] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately describes provisions to acquire data from, or for emergency access to, offsite monitoring and analysis equipment. This is acceptable because it conforms to the guidance provided in evaluation criterion H.6 of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.8.32 Offsite Radiological Monitoring Equipment

Technical Information in the Emergency Plan: [H.7] Section H.7, “Offsite Radiological Monitoring Equipment,” states that suitable radiological monitoring equipment is provided for assessment of offsite consequences for use by offsite monitoring field teams. Appendix 6 provides a description of the types of equipment available for field team use. Each of the Emergency Response Facilities, local hospitals and the NOSF have emergency equipment and supplies, with a general listing by category provided in Appendix 6, “Emergency Equipment and Supplies.”

Technical Evaluation: [H.7] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately describes the offsite radiological monitoring equipment in the vicinity of the nuclear facility. This is acceptable because it conforms to the guidance provided in evaluation criterion H.7 of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.8.33 Meteorological Instrumentation

Technical Information in the Emergency Plan: [H.8] Section H.8, “Meteorological Instrumentation and Procedures,” describes the 10 meter and 60 meter onsite meteorological towers and lists the onsite monitored parameters from a primary and backup tower as wind speed and direction, temperature, and precipitation. Section H.8 states that meteorological data can also be obtained from the National Weather Service Fort Worth office. Section 2.3.3, “Onsite Meteorological Measurements Program,” of the FSAR, provides details of the

instrumentation and accuracy, meeting the criteria established in ANSI/ANS-2.5-1984, which is endorsed by RG 1.23.

Technical Evaluation: [H.8] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately describes the meteorological instrumentation and procedures and provisions to obtain representative current meteorological information from other sources. This is acceptable because it conforms to the guidance provided in evaluation criterion H.8 of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.8.34 Inspection/Inventory of Emergency Equipment

Technical Information in the Emergency Plan: [H.10] Section H.10, "Emergency Equipment and Supplies," states that inspections, inventories, and operational tests are performed at least once each calendar quarter and after each use and that there are sufficient reserves to allow for replacement of items removed for calibration or repair. The specific scope for tests is provided in administrative procedures. Section H.10 states that EPPs address specific inventories and establish requirements for performing inventories and operational tests.

Appendix 6, "Emergency Equipment and Supplies," provides a listing of typical emergency equipment supplies, including personal protection and dosimetry, radiological monitoring, contamination control, communications, and miscellaneous supplies, such as lights, batteries, computer equipment, check source, plans, procedures, drawings, maps, posting, first-aid and clerical supplies.

Technical Evaluation: [H.10] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately describes the provisions to inspect, inventory and operationally check emergency equipment/instruments at least once each calendar quarter and after each use. This is acceptable because it conforms to the guidance provided in evaluation criterion H.10 of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.8.35 Emergency Kits

Technical Information in the Emergency Plan: [H.11] Appendix 6, "Emergency Equipment and Supplies," provides a listing of typical emergency equipment supplies including personal protection and dosimetry, radiological monitoring, contamination control, communications, and miscellaneous supplies, such as lights, batteries, computer equipment, check source, plans, procedures, drawings, maps, posting, first-aid and clerical supplies. Appendix 6 also states that emergency equipment and supplies are stored at the CR, TSC, OSC, EOF, NOSF, EOCs and hospitals.

Technical Evaluation: [H.11] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately describes the emergency kits. This is acceptable because it conforms to the guidance provided in evaluation criterion H.11 of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.8.36 Location to Coordinate Field Monitoring Data

Technical Information in the Emergency Plan: [H.12] Section H.12, "Receipt of Field Monitoring Data," states that the central point for receipt of offsite monitoring data results and sample media from applicant personnel is the NOSF. The NOSF is located about 0.1 miles west of the exclusion area boundary on the Plant Road.

Technical Evaluation: [H.12] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately establishes a central point, the NOSF, for the receipt and analysis of all field monitoring data and coordination of sample media. This is acceptable because it conforms to the guidance provided in evaluation criterion H.12 of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.8.37 Facilities and Supplies for Emergency Medical Treatment

Technical Information in the Emergency Plan: {Appendix E, Section IV.E.4} Section L.2, "Onsite First Aid Capability," states that the site maintains a first aid station that contains supplies and equipment to treat those requiring first aid. A first aid team is also maintained at the site 24 hours a day and first aid kits with basic supplies are located throughout CPNPP, Units 3 and 4. Additional equipment for use by responders is available in the Access Building and Fire Brigade assembly areas. Selected personnel are trained to provide basic first aid and patient preparation.

Technical Evaluation: {Appendix E, Section IV.E.4} The staff finds the CPNPP, Units 3 and 4, Emergency Plan adequately describes the facilities and medical supplies at the site for appropriate emergency first aid treatment. This is acceptable because it meets the requirements provided in Appendix E to 10 CFR Part 50, Section IV.E.4.

13.3C.8.38 Maintenance of Emergency Equipment and Supplies

Technical Information in the Emergency Plan: {Appendix E, Section IV.G} Section H. 10, "Emergency Equipment and Supplies," states that inspections, inventories, and operational tests are performed at least once each calendar quarter and after each use and that there are sufficient reserves to allow for replacement of items removed for calibration or repair. The specific scope for tests is provided in administrative procedures. Section H.10 also states that EPPs address specific inventories and establish requirements for performing inventories and operational tests. Section P.4, "Plan Reviews and Updates," states that the Emergency Plan is reviewed and updated as needed and certified by the Plant Manager to be current annually. Review of the EPPs is at least biennially.

Technical Evaluation: {Appendix E, Section IV.G} The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately describes the provisions to ensure that the emergency plan, and its implementing procedures, and emergency equipment and supplies are maintained up-to-date. This is acceptable because it meets the requirements in Appendix E to 10 CFR Part 50, Section IV.G.

13.3C.8.39 ERDS Description, Testing, and Activation

Technical Information in the Emergency Plan: {Appendix E, Section VI} Pursuant to 10 CFR 50.72(a)(4), Section F.1, "Description of Communication Links" of the CPNPP, Units 3 and 4, Emergency Plan states that the ERDS will be activated within one hour after the declaration of an Alert or higher emergency classification. Section N.2.a, "Communications Drills," states that communications between CPNPP, Units 3 and 4, and Federal agencies and the State of Texas are tested quarterly.

The "Emergency Response Data System," section of Section 13.3, "Emergency Planning," of the US-APWR DCD describes the ERDS data transmission system and states that it fulfills the function of the emergency response data system of Appendix E to Title 10 CFR Part 50. Section 9.5.2.2, "System Description," of the US-APWR DCD describes the physically

independent communication systems, including the ERDS. Section N.2.a, "Communications Drills," states that communications systems between CPNPP, Units 3 and 4 and Federal agencies and the State of Texas are tested quarterly. In **RAI 3327, Question 13.03-7.H-1**, the staff requested clarification regarding whether ERDS will be tested quarterly. In its response, the applicant stated that Subsection II.N.2.a of the Emergency Plan will be revised to indicate that the ERDS is tested quarterly and is discussed in the EPP that addresses "Maintaining Emergency Preparedness."

ITAAC 5.2 was proposed by the applicant to demonstrate the capability to transmit data from the plant to the NRC Operations Center, pursuant to 10 CFR Part 50 Appendix E.

Technical Evaluation: {Appendix E, Section VI} (10 CFR 50.72(a)(4)) As described above, the staff finds that the CPNPP, Units 3 and 4, Emergency Plan describes the timely activation of ERDs. The staff confirmed that the CPNPP, Units 3 and 4, Emergency Plan adequately describes the ERDS, as a direct near real-time electronic data link between the licensee's onsite computer system and the NRC Operations Center that provides for the automated transmission of plant parameters. This is acceptable because it conforms to the regulations described in 10 CFR Part 50 Appendix E, Section VI and 10 CFR 50.72(a)(4). The staff finds that the additional information and textual revision provided in response to **RAI 3327, Question 13.03-7.H-1** to be acceptable because it conforms to the requirements of Appendix E to 10 CFR Part 50, Section VI. In its response to RAI 3327, Question 13.03-7.H-1, the applicant stated that Section II.N.2.a of the Emergency Plan will be revised to indicate that the ERDS is tested quarterly. This is acceptable because it conforms to the requirements identified in Appendix E, Section VI to 10 CFR Part 50 and 10 CFR 50.72(a)(4). **Confirmatory Item 13.03-32** was created to track these revisions.

13.3C.8.40 Conclusion

The staff has reviewed the CPNPP, Units 3 and 4, Emergency Plan and response to **RAIs 3327, Questions 13.03-7.H-1 through 13.03-7.H-9** in regards to Planning Standard H, Emergency Facilities and Equipment of NUREG-0654/FEMA-REP-1 and Applicable Regulation. The staff concludes that the information provided in the CPNPP, Units 3 and 4, Emergency Plan and additional information provided by the applicant in response to the above described RAIs regarding emergency facilities and equipment, which are being tracked as **Confirmatory Items 13.03-31** and **13.03-32**, is acceptable and meets the requirements of 10 CFR 50.47(b)(8) because it complies with the guidance in Planning Standard H of NUREG-0654/FEMA-REP-1, the applicable portions of Appendix E to 10 CFR Part 50, and Supplement 1 to NUREG-0737.

13.3C.9 Accident Assessment

13.3C.9.1 Regulatory Basis

In determining whether the proposed emergency plan meets the applicable regulatory requirements in 10 CFR 50.47(b)(9), the staff evaluated it against the detailed evaluation criteria in NUREG-0654/FEMA-REP-1, Revision 1. The staff also evaluated the proposed emergency plan against applicable regulatory requirements related to the area of "Accident Assessment" in Appendix E to 10 CFR Part 50 and 10 CFR 50.34.

13.3C.9.2 Initiating Conditions for Emergency Classes

Technical Information in the Emergency Plan: [I.1] Section I.1, "Parameters Indicative of Emergency Conditions," states Appendix 1, "Emergency Action Levels," includes the various indications that correspond to the emergency plant system and effluent parameter values that are indicative of off-normal conditions based on the methodology provided in NEI 99-01, Revision 5. Section I states that Appendix 1 also specifies the instruments, and the capabilities of the instruments, used to monitor effluent parameter values.

Section H.1, "Onsite Emergency Response Facilities," "Technical Supports Centers," states that display capabilities in the TSC includes a workstation that is capable of displaying parameters required for a SPDS and references US-APWR Design DCD Subsection 7.5.1.4, "Safety Parameter Display System." DCD Subsection 7.5.1.4 states that the computer processing SPDS functions is redundant and is discussed in Topical Report MUAP-07004 Section 4.2.5.b. DCD Subsection 7.5.1.1, "Post-Accident Monitoring," states that parameters are based on the RG 1.97, Revision 4 guidelines. Section 7.5.2.4, "Safety Parameter Displays System," of the US-APWR DCD states that the SPDS design is based on NUREG 0737 Supplement 1, "Clarification of TMI Action Plan Requirements - Requirements for Emergency Response Capability," with respect to SPDS. NUREG 0737 Supplement 1, Section 6.1, Requirements," references the Type A, B, C, D, E variables in RG 1.97 (Revision 2). Section 7.5.1.4, "Safety Parameter Display System," of the US-APWR DCD provides a listing of SPDS parameters for critical areas.

Technical Evaluation: [I.1] The staff finds that the CPNPP, Units 3 and 4, application adequately identifies plant system and effluent parameter values characteristic of a spectrum of off-normal conditions and accidents, and identifies the plant parameter values or other information which correspond to the initiation conditions for each emergency class. This is acceptable because it conforms to the guidance in evaluation criterion I.1 of NUREG-0654/FEMA-REP-1.

13.3C.9.3 Capability to Continuously Assess an Accident

Technical Information in the Emergency Plan: [I.2] (10 CFR 50.34(f)(2)(xvii)) Section I-2, "Initial and Continuing Accident Assessment," states initially, during an emergency, the Emergency Coordinator directs the on-shift Radiation Protection and Chemistry Technicians to perform onsite and in-plant radiological assessment, and sampling activities. Section I-2 references Subsection 9.3.2 of the US-APWR DCD regarding a description of provisions for obtaining samples under accident conditions. The US-APWR process and PASS includes the following sampling sub-systems: the primary liquid sampling system, the primary gaseous sampling system, the secondary sampling system, the steam generator blowdown sampling system, manual local grab sample provisions. Additional information related to Emergency Facilities and Equipment and the applicant's capability to continuously assess an accident can be found in Section 13.3C.8.7, "TSC Radiological Protection" and Section 13.3C.8.9 "TSC Data Collection, Storage, and Analysis," of this SE.

Technical Evaluation: [I.2] (10 CFR 50.34(f)(2)(xvii)) The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately describes the methods of making initial and continuing assessment of plant conditions through the course of an accident. This is acceptable because it conforms to the guidance in evaluation Criterion I.2 of NUREG-0654/FEMA-REP-1, Revision 1 and the requirements identified in 10 CFR 50.34(f)(2)(xvii). The evaluation of emergency planning ITAAC is in Section 13.3C.19 of this FSER.

13.3C.9.4 Capability to Determine Source Term

Technical Information in the Emergency Plan: [I.3a] {Appendix E, Section IV.E.2} Section I-3, "Determination of Source Term and Radiological Conditions," states Appendix 2, "Radiological Assessment Monitoring," describes the process for relating various measured parameters, including containment radiation monitor readings, to the source term available for release within plant systems and describes the process for relating various measured parameters, including effluent monitor readings, to the magnitude of the release of radioactive materials.

Appendix 2 describes the Comanche Peak Assessment Model Projecting Estimated Dose Evaluation (CPAMPEDE) computer program used to perform dose assessment calculations under emergency conditions. CPAMPEDE has the capability to provide near real time estimates of potential doses to individuals from releases of radioactive materials via the atmospheric pathway and to back-calculate release rates from field measurements. CPAMPEDE can use system parameters and radiation monitor readings from plant monitoring systems, or the results of in-plant sampling, to estimate the source term and release rate. It then uses these values with meteorological data to estimate plume location and to calculate projected doses. CPAMPEDE can also use default data in the absence of plant-specific data. The program uses terminology and concepts consistent with 10 CFR Part 20 and related guidance. The applicant has proposed emergency planning ITAAC 6.2 to demonstrate that the means exist to determine the source term of releases of radioactive material within plant systems.

Technical Evaluation: [I.3.a] {Appendix E, Section IV.E.2} The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately establishes methods and techniques to be used for determining the source term of releases of radioactive material within plant systems based on plant system parameters and effluent monitors. This is acceptable because it conforms to the guidance in evaluation criterion I.3.a of NUREG-0654/FEMA-REP-1, Revision 1, and meets the requirements of Appendix E to 10 CFR Part 50, Section IV.E.2. The evaluation of emergency planning ITAAC is in Section 13.3C.19 of this FSER.

13.3C.9.5 Capability to Determine the Magnitude of a Radiological Release

Technical Information in the Emergency Plan: [I.3b] {Appendix E, Section IV.B} Section I-4, "Relationship Between Effluent Monitor Reading and Exposure and Contamination Levels," describes a computer-based dose projection program, CRAMPEDE, used to estimate the offsite consequences of a radiological release to the surrounding public. This program can use system parameters from the Plant Computer System (PCS), radiation monitor instrument readings from the Radiation Monitoring System (RMS), or the results from in-plant sampling to estimate the source term and release rate.

Technical Evaluation: [I.3.b] {Appendix E, Section IV.B} The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately establishes methods and techniques to be used for determining the magnitude of releases of radioactive material within plant systems based on plant system parameters and effluent monitors. This is acceptable because the program, methods and techniques used to determine the magnitude of a radiological release, conforms to the guidance in evaluation criterion I.3.b of NUREG-0654/FEMA-REP-1, Revision 1, and meets the requirements of Appendix E to 10 CFR Part 50, Section IV.B.

13.3C.9.6 Relationship Between Effluent Monitors and Exposure

Technical Information in the Emergency Plan: [I.4] {Appendix E, Section IV.A.4} {Appendix E, Section IV.B} Section I-4, "Relationship Between Effluent Monitor Reading and Exposure and Contamination Levels," describes the dose projection program, CRAMPEDE, used to estimate the offsite consequences of a radiological release to the surrounding public. This program can use system parameters from the PCS, radiation monitor instrument readings from the RMS, or the results from in-plant sampling to estimate the source term and release rate. Dose projections are used by Radiation Protection personnel for development of PARs, to predict plume location for dispatching and control of off-site radiological monitoring teams, and estimating the dose received by persons exposed to the plume. Once field data becomes available from the monitoring teams, projected dose information is reevaluated and PARs provided to offsite officials are updated as needed.

Section H.2, "Offsite Emergency Response Facilities," states that the EOF has technical data displays to help personnel in the diagnosis of plant conditions and evaluation of potential or actual radioactive materials releases to the environment. Radiological Assessment personnel located at the NOSF, which is where the EOF is also located, are the central point for offsite monitoring data results and provide the resources for evaluation and recommendations. Section I-5, "Meteorological Information" states Section 2.3 of the FSAR provides a description of the meteorological system used to provide initial values and continuing assessment of meteorological conditions under emergency conditions. This data is used by dose assessment personnel to calculate offsite doses, which are provided to the Emergency Coordinator to help formulate offsite PARs. This data is available in the CR, TSC, and EOF. The applicant has proposed emergency planning ITAAC 6.3 to demonstrate that the impact of a radiological release to the environment is able to be assessed by utilizing the relationship between effluent monitor readings, and onsite and offsite exposures and contamination for various meteorological conditions.

Technical Evaluation: [I.4] {Appendix E, Section IV.A.4} {Appendix E, Section IV.B} The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately establishes the relationship between effluent monitor readings and onsite and offsite exposures and contamination for various meteorological conditions. This is acceptable because it conforms to the guidance in evaluation Criterion I.4 of NUREG-0654/FEMA-REP-1, Revision 1, and the requirements in Appendix E to 10 CFR Part 50, Section IV.B. The evaluation of emergency planning ITAAC is in Section 13.3C.19 of this FSER.

13.3C.9.7 Meteorological Information

Technical Information in the Emergency Plan: [I.5] Section I-5, "Meteorological Information," states Section 2.3 of the FSAR provides a description of the meteorological system used to provide initial values and continuing assessment of meteorological conditions under emergency conditions. This data is used by dose assessment personnel to calculate offsite doses, which are provided to the Emergency Coordinator to help formulate offsite PARs. This data is available in the CR, TSC, and EOF. Section H.8, "Meteorological Instrumentation and Procedures," lists the monitored parameters as wind speed and direction, temperature and precipitation. This data is used by dose assessment personnel to calculate offsite doses, which are provided to the Emergency Coordinator to help formulate offsite PARs. The meteorological monitoring program for CPNPP, Units 3 and 4, is a continuation of the onsite meteorological monitoring program in place at CPNPP, Units 1 and 2. The onsite program follows the program requirements defined in the CPNPP Offsite Dose Calculation Manual (ODCM). Section H.8, "Meteorological Instrumentation and Procedures," lists the onsite monitored parameters, from a primary and backup tower, as wind speed and direction, temperature and precipitation and

states that meteorological data can be obtained from the NWS Fort Worth office. Section 2.3.3, "Onsite Meteorological Measurements Program," of the FSAR, provides details of the instrumentation and accuracy. ANSI/ANS-2.5-1984, which is endorsed by RG 1.23, is listed as the system accuracy. Table 7.5-3 provides a list of PAM variables, their ranges, monitored functions or systems, quality and variable type. The applicant has proposed emergency planning ITAAC 6.4 to test the capability of the CR, TSC, and EOF to acquire and evaluate wind speed, wind direction, and air temperature at 10 meters and 60 meters.

Technical Evaluation: [I.5] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately describes the capability of acquiring and evaluating meteorological information. This is acceptable because it conforms to the guidance in evaluation Criterion I.5 of NUREG-0654/FEMA-REP-1, Revision 1. The evaluation of emergency planning ITAAC is in Section 13.3C.19 of this FSER.

13.3C.9.8 Projecting Dose When Instrumentation is Inoperable

Technical Information in the Emergency Plan: [I.6] Section I-6, "Determination of Release Rates and Projected Doses When Installed Instruments are Inoperable or Off-Scale," states Appendix 2 of this Plan provides a description of plant procedures that establish processes for estimating release rates and projected doses if the associated instrumentation is inoperable or off-scale. These procedures include consideration of estimated releases based on field monitoring data and surrogate instrumentation and methods to estimate extent of fuel damage. Default information or estimated information can be used to generate dose projections if system or monitor parameters are unavailable. When information becomes available from the offsite survey teams, this information may be used to update projected doses and plume location based on field observations. The applicant has proposed emergency planning ITAAC 6.5 to ensure 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

Technical Evaluation: [I.6] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately establishes the methodology for determining the release rate/projected doses if the instrumentation used for assessment are off-scale or inoperable. This is acceptable because it conforms to the guidance in Evaluation Criterion I.6 of NUREG-0654/FEMA-REP-1, Revision 1. The evaluation of emergency planning ITAAC is in Section 13.3C.19 of this FSER.

13.3C.9.9 Field Monitoring Capability

Technical Information in the Emergency Plan: [I.7] Section I-7, "Field Monitoring Capability," states in the event that dose projection or onsite monitoring results indicate the potential for radioactivity release with offsite dose consequences, an offsite radiological monitoring team may be dispatched. External dose measurements and air samples are obtained at preselected monitoring points. Under the direction of the EOF RPC, the team determines contamination levels and obtains vegetation and liquid samples. The team can determine the plume boundary, centerline of the plume, and other factors necessary to determine impact of the release on the public and environment. The field monitoring continues during the emergency to support immediate assessment of protective measures. Appendix 6 provides a listing of the types of instrumentation and supporting equipment and supplies that are provided for field monitoring and onsite surveying activities.

Technical Evaluation: [I.7] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately describes the capability and resources for field monitoring within the plume exposure emergency planning zone. This is acceptable because it conforms to the guidance in Evaluation Criterion I.7 of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.9.10 Capability to Rapidly Assess Radiological Hazards

Technical Information in the Emergency Plan: [I.8] Section I-8, "Assessing Hazards Through Liquid or Gaseous Release Pathways," states the licensee trains, designates, equips, dispatches, and coordinates field teams consistent with Section II.I.7 of this Plan. The field teams perform sampling of offsite media as needed to assess the actual or potential magnitude and locations of radiological hazards. Under the direction of the EOF RPC, the teams determine contamination levels and obtain vegetation and liquid samples. Teams can determine the plume boundary, centerline of the plume, and other factors necessary to determine impact of the release on the public and environment. The field monitoring continues during the emergency to support immediate assessment of protective measures. Appendix 6 provides a listing of the types of instrumentation and supporting equipment and supplies that are provided for field monitoring and onsite surveying activities. Transportation for survey teams is provided in accordance with EPPs, and teams should be deployed within 15 to 30 minutes after arrival onsite.

Technical Evaluation: [I.8] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately describes methods, equipment and expertise to conduct offsite assessment of radiological hazards. This is acceptable because they conform to the guidance in Evaluation Criterion I.8 of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.9.11 Capability to Measure Radioiodine Concentrations in Air

Technical Information in the Emergency Plan: [I.9] Section I.9, "Measuring Radioiodine Concentrations," states field teams are equipped with portable air samplers, appropriate sampling media, and analytical equipment capable of detecting radioiodine concentrations at or below 10^{-7} $\mu\text{Ci/cc}$ under field conditions, taking into consideration potential interference from noble gas activity and background radiation. The applicant has proposed emergency planning ITAAC 6.6 to ensure 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} $\mu\text{Ci/cc}$ under field conditions.

Technical Evaluation: [I.9] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately describes a capability to detect and measure radioiodine concentrations in air in the plume exposure EPZ as low as 10^{-7} $\mu\text{Ci/cc}$ under field conditions. This is acceptable because it conforms to the guidance in Evaluation Criterion I.9 of NUREG-0654/FEMA-REP-1, Revision 1. The evaluation of emergency planning ITAAC is in Section 13.3C.19 of this FSER.

13.3C.9.12 Means to Relate Various Parameters to Dose Rates

Technical Information in the Emergency Plan: [I.10] Section I-10, "Relating Measured Parameters to Dose Rates," states Appendix 2 describes the process established to relate measured parameters, such as surface, airborne or waterborne activity levels, to dose rates for those key isotopes listed in Table 3 of NUREG-0654. Appendix 2 describes the CRAMPEDE computer program which has the capability to provide near real time estimates of potential doses to individuals from releases of radioactive materials via the atmospheric pathway and to

back-calculate release rates from field measurements. CRAMPEDE can use system parameters and radiation monitor readings from plant monitoring systems, or the results of in-plant sampling, to estimate the source term and release rate. It then uses these values with meteorological data, which may be provided automatically or input manually, to estimate plume location and to calculate projected doses. Appendix 2 of this Plan also describes provisions for estimating the dose based on projected and actual dose rates. The applicant has proposed emergency planning ITAAC 6.7 to ensure that Emergency Plan Implementing Procedures propose a means for relating airborne radioactivity levels to dose rates and gross radioactivity measurements for a list of isotopes.

Technical Evaluation: [I.10] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately establishes means for relating the various measured parameters (e.g., contamination levels, water and air activity levels) to dose rates for key isotopes and gross radioactivity measurements. The CPNPP, Units 3 and 4, Emergency Plan also adequately describes provisions for estimating integrated dose from the projected and actual dose rates and for comparing these estimates with the protective action guides. The detailed provisions are described in separate procedures. This is acceptable because it conforms to the guidance in Evaluation Criterion I.10 of NUREG-0654/FEMA-REP-1, Revision 1. The evaluation of emergency planning ITAAC is in Section 13.3C.19 of this FSER.

13.3C.9.13 Conclusion

The staff finds that the information in the CPNPP, Units 3 and 4, Emergency Plan regarding accident assessment is acceptable and meets the requirements of 10 CFR 50.47(b)(9) because it complies with the guidance in Planning Standard I of NUREG-0654/FEMA-REP-1, the applicable portions of Appendix E to 10 CFR Part 50, and 10 CFR 50.34 as described above.

13.3C.10 Protective Response

13.3C.10.1 Regulatory Basis

In determining whether the proposed emergency plan met the applicable regulatory requirements in 10 CFR 50.47(b)(10), the staff evaluated the proposed emergency plan against the detailed evaluation criteria in NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.10.2 Warning Onsite Personnel

Technical Information in the Emergency Plan: [J.1.a-d] Section J.1, "Onsite Notification," of the CPNPP, Units 3 and 4, Emergency Plan states individuals located outside of the Protected Area (PA) are informed via audible warnings provided by warning systems and the activities of the Security Organization and, if needed, local law enforcement personnel. Personnel in high noise areas are notified via "other measures." In **RAI 3327, Question 13.03-9.J-1**, the staff requested additional information regarding a description of ways personnel in high noise areas will be notified. In its response, the applicant stated that personnel in high noise areas will be alerted to evacuate via blue rotating beacons. Information is provided regarding the meaning of the various warning systems, and the appropriate response actions, via plant training programs, visitor orientation, escort instructions, posted instructions, or within the content of audible messages. The applicant will revise Section II.J.1 of the CPNPP, Units 3 and 4, emergency plan to reflect the notification of personnel in high noise areas.

Technical Evaluation: [J.1.a-d] As described above, the staff finds that the CPNPP, Units 3 and 4, Emergency Plan establishes the means and time required to warn or advise onsite individuals and individuals who may be in areas controlled by the operator, including employees not having emergency assignments, visitors, contractor and construction personnel, and other persons who may be in the public access areas on or passing through the site or within the owner controlled area. This is acceptable because it meets the guidance in Evaluation Criterion J.1 a-d of NUREG-0654/FEMA-REP-1. In its response to **RAI 3327, Question 13.03-9.J-1**, the applicant stated that Section II.J.1 of the CPNPP, Units 3 and 4, Emergency Plan will be revised to reflect the notification of personnel in high noise areas. This is acceptable because it meets the guidance criteria identified in J.1 a-d of NUREG-0654/FEMA-REP-1. **Confirmatory Item 13.03-34** has been created to track this revision

13.3C.10.3 Evacuation Routes for Onsite Personnel

Technical Information in the Emergency Plan: [J.2] Section J.1, "Onsite Notification," states the Emergency Coordinator or designee uses EPPs, information available from meteorological tower instruments and current radiological data for determining the appropriate evacuation route. Appendix 4, "Evacuation Time Estimate," states that the ETE study includes development of a comprehensive traffic management plan. The plan was reviewed with State and local law enforcement personnel.

Affected individuals evacuate the site via personal vehicles, and the Security Organization will make arrangements for transportation for individuals without a personal vehicle. Evacuees are directed to the designated relocation site. In **RAI 3327, Question 13.03-9.J-2**, the staff requested additional information regarding the designated relocation site. In its response, the applicant stated that plans and procedures have been established for the operation of reception centers in Stephenville, Cleburne, and Benbrook in the case of an emergency at CPNPP, Units 1 and 2. These same reception centers will be used for CPNPP, Units 3 and 4. Appendix 7 of CPNPP, Units 3 and 4, Emergency Plan includes LOA with the Cities of Stephenville and Cleburne committing to extend their existing agreement to CPNPP, Units 3 and 4. The applicant will revise Appendix 7 of the Emergency Plan to include a LOA with Benbrook. Individuals are informed of the evacuation routes and appropriate instructions via plant training programs, visitor orientation, escort instructions, posted instructions, or within the content of audible messages. Should evacuation via designated evacuation routes be determined to be inadvisable due to adverse conditions such as weather-related, radiological, or traffic density, affected individuals will be directed to a safe onsite area for accountability and, if necessary, contamination monitoring and decontamination.

Technical Evaluation: [J.2] As described above, the staff finds that the CPNPP, Units 3 and 4, Emergency Plan contains provisions for evacuation routes and transportation for onsite individuals to some suitable offsite location, including alternatives for inclement weather, high traffic density and specific radiological conditions consistent with the guidance described in Evaluation Criterion J.2 of NUREG-0654/FEMA-REP-1. In its response to **RAI 3327, Question 13.03-9.J-2**, the applicant will revise Appendix 7 of the Emergency Plan to include a LOA with Benbrook. This is acceptable because it conforms to Evaluation Criteria J.2 of NUREG-0654/FEMA-REP-1. **Confirmatory Item 13.03-35** has been created to track this revision.

13.3C.10.4 Radiological Monitoring of Onsite Personnel

Technical Information in the Emergency Plan: [J.3] Section J.3, "Personnel Monitoring and Decontamination," of the CPNPP, Units 3 and 4, Emergency Plan states a relocation site has

been established to provide a location for personnel monitoring and decontamination, if necessary. The Emergency Coordinator directs contamination monitoring of personnel, vehicles, and personal property arriving at the relocation site when there is likelihood that individuals and their property may have become contaminated before or during the evacuation. Evacuees at this location are logged in/out, monitored for contamination, and decontaminated if required.

Technical Evaluation: [J.3] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately provides for radiological monitoring of people evacuated from the site. This is acceptable because it conforms to the guidance in Evaluation Criterion J.3 of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.10.5 Evacuation of Non-essential Onsite Personnel

Technical Information in the Emergency Plan: [J.4] Section J.4, "Non-Essential Personnel Evacuation and Decontamination," of the CPNPP, Units 3 and 4, Emergency Plan states at a SAE classification or higher, the Emergency Coordinator shall order a site evacuation which includes the Exclusion Area, Squaw Creek Park, and Squaw Creek Reservoir (SCR). When evacuating, nonessential personnel depart the site, preferably using normal site egress routes, as directed by the Emergency Coordinator. Personnel and visitors offsite, but within the owner-controlled area, are warned of an emergency by the Security Organization or by Squaw Creek Park personnel. Members of the general public who are onsite must be evacuated if there is a possibility that pre-established dose limits, identified in Section J.4, may be exceeded. The designated relocation site will have decontamination and contamination control capability and equipment in the event it is needed.

Technical Evaluation: [J.4] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately provides for the evacuation of onsite non-essential personnel in the event of a "site area emergency" or "general emergency" and provides a decontamination capability. This is acceptable because it conforms to the guidance in Evaluation Criterion J.4 of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.10.6 Onsite Personnel Accountability

Technical Information in the Emergency Plan: [J.5] Section J.5, "Personnel Accountability," of the CPNPP, Units 3 and 4, Emergency Plan states a capability exists to account for individuals within the Protected Area and to identify any missing individuals within 30 minutes following initiation of accountability measures. Following this initial determination of individuals onsite, the capability exists to continuously account for individuals within the PA. These capabilities are maintained consistent with the requirements of the Security Plan. An EPP is identified in Appendix 5, "Emergency Plan Procedures," for Evacuation and Accountability.

Technical Evaluation: [J.5] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately provides for a capability to account for all individuals onsite at the time of the emergency and ascertain the names of missing individuals within 30 minutes of the start of an emergency and account for all onsite individuals continuously thereafter. This is acceptable because it conforms to the guidance in Evaluation Criterion J.5 of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.10.7 Protection for Personnel Remaining or Arriving Onsite

Technical Information in the Emergency Plan: [J.6.a-c] Section 6, "Protective Measures," of the CPNPP, Units 3 and 4, Emergency Plan states protective equipment and supplies are distributed to onsite emergency response personnel, as necessary, to control radiological exposures or contamination. Protective measures include respiratory protection and engineering controls, protective clothing, and thyroid protection. A description of the equipment and supplies is provided in Appendix 6, "Emergency Equipment and Supplies."

Technical Evaluation: [J.6.a-c] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately provides for individual respiratory protection, use of protective clothing, and use of radio-protective drugs (e.g., individual thyroid protection). This is acceptable because it conforms to the guidance in Evaluation Criterion J.6.a-c of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.10.8 Recommending of Protective Actions

Technical Information in the Emergency Plan: [J.7] Section J.7, "Protective Action Recommendations and Bases," of the CPNPP, Units 3 and 4, Emergency Plan states PARs are developed based on plant conditions, radiological dose estimates and meteorological conditions. These PARs are provided to the State of Texas and Somervell and Hood Counties, who, in turn determine protective actions and communicate these to the public. PARs are based on NUREG-0654, Supplement 3, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," and EPA 400-R-92-001, "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents."

The initial PAR for any event classified as a General Emergency (GE) is to evacuate in all directions out to two miles and evacuate the downwind sector and one sector on either side of the downwind sector out to five miles. This PAR may vary depending upon meteorological conditions. Sheltering may be appropriate when a release is short term and controlled or when known conditions make evacuation dangerous, such as, severe weather or overriding threat to public safety. PARs may change as plant conditions, radiological dose estimates, or meteorological conditions change and may consist of sheltering, evacuation, potassium iodide (KI), or no action, and details regarding appropriate PARs are contained in EPPs.

The EOF RPC is responsible for making dose projections on a periodic basis. These calculations use plant procedures to calculate projected dose to the population-at-risk for either potential or actual release conditions. For conditions in which a release has not occurred, but fuel damage has taken place and radiation levels in the containment atmosphere are significant, a scoping analysis is performed to determine what recommendations would be made if containment integrity were lost at that time. A Total Effective Dose Equivalent and thyroid Committed Dose Equivalent (CDE) are calculated at various distances from the site boundary including 2 miles, 5 miles, 10 miles and beyond, if needed. These dose projections are compared to Protective Action Guides (PAGs) in Table II-3, "Protective Action Guides," which are derived from EPA PAGs. Based on these comparisons, PARs are developed by the EOF RPC. If these recommendations involve sheltering or evacuation of the public around the plant, the EOF RCP informs the EOF Manager of the situation and recommendations for protective actions. If dose projections show that PAGs are exceeded at 10 miles, the dose assessment code and in-field measurements, when available, are used to calculate doses at various distances downwind to determine the distance PAG levels are exceeded. The RPC forwards the results to the EOF Manager, who communicates this information to the offsite authorities.

For conditions in which a release has not occurred, but fuel damage has taken place and radiation levels in the containment atmosphere are significant, a scoping analysis is performed to determine what recommendations would be made if containment integrity were lost at that time. A TEDE and thyroid CDE is calculated at various distances from the plant. These dose projections are compared to PAGs shown in Table II-3, "Protective Action Guides," which are derived from EPA PAGs. Based on these comparisons, PARs are developed by the EOF RPC. The EOF RPC informs the EOF Manager of the situation and recommendations for sheltering or evacuation of the public around the plant.

Technical Evaluation: [J.7] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately establishes a mechanism for recommending protective actions to the appropriate State and local authorities. This is acceptable because it conforms to the guidance in Evaluation Criterion J.7 of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.10.9 Evacuation Time Estimates

Technical Information in the Emergency Plan: [J.8] ETE values are provided in Table A4.1, "Time to Evacuate the Area of 100% of the Affected Population," in Appendix 4, "Evacuation Time Estimate." Appendix 4 of the EP includes a discussion of the approach to development of the ETEs which is in accordance with Appendix 4 of NUREG-0654/FEMA-REP-1.

Technical Evaluation: [J.8] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan contains time estimates for evacuation within the plume exposure EPZ as described in Evaluation Criterion J.8 of NUREG-0654/FEMA-REP-1. The ETE analysis is addressed in Section 13.3C.18 of this SE.

13.3C.10.10 Plans to Implement Protective Measures

Technical Information in the Emergency Plan: [J.10.a] Section J.9, "State and Local Government Implementation of Protective Measures," of the CPNPP, Units 3 and 4, Emergency Plan states that the State of Texas and Somervell and Hood Counties' Plans establish a capability for implementing protective measures based upon PAGs and other criteria consistent with the recommendations of U.S. EPA regarding exposure resulting from radioactive plumes and with the FDA guidance regarding radioactive contamination of human food and animal feeds. Appendix 4, "Evacuation Time Estimate," of the CPNPP, Units 3 and 4, Emergency Plan provides a map of the Plume Exposure Pathway EPZ and evacuation areas in Figure A4-1, "Plume Exposure Pathway EPZ and Permanent Resident Population by Emergency Response Planning Areas." Figure A4-4, "Plume Exposure Pathway EPZ Evacuation Routes - Somerville County," and Figure A4-5, "Plume Exposure Pathway EPZ Evacuation Routes - Hood County," illustrate evacuation routes for the EPZ. Figure A4-3, "Locations of Reception Centers," identifies the reception centers. Section J.10, "Protective Measures Implementation," states that EPPs provide locations of pre-selected radiological sampling and monitoring points. An EPP is identified in Appendix 5, "Emergency Plan Procedures," for Protective Action Recommendations. In **RAI 3327, Question 13.03-9.J-3**, the staff requested additional information regarding pre-selected radiological sampling and monitoring points. In its response, the applicant stated that radiological sampling and monitoring points are located at existing siren locations and provided a map which identified these points.

Technical Evaluation: [J.10.a] As discussed above, the staff finds that the CPNPP, Units 3 and 4, Emergency Plan and the additional information provided by the applicant in response to the above described RAIs adequately addresses evacuation routes, evacuation areas,

preselected radiological sampling and monitoring points, relocation centers in host areas, and shelter areas. This is acceptable because it conforms to the guidance in Evaluation Criterion J.10.a of NUREG-0654/FEMA-REP-1. In its response to **RAI 3327, Question 13.03-9.J-3**, Appendix 4 of the Emergency Plan will be revised to include a map of monitoring and radiological sampling points. This is acceptable because it conforms to the guidance in Evaluation Criterion J.10.a of NUREG-0654/FEMA-REP-1. **Confirmatory Item 13.03-36** has been created to track this revision.

Technical Information in the Emergency Plan: [J.10.b] Figure A4-1, "Plume Exposure Pathway EPZ and Permanent Resident Population by Emergency Response Planning," of the CPNPP, Units 3 and 4, Emergency Plan shows population distribution around the nuclear facility by evacuation area. Figure A4-2, "Plume Exposure Pathway EPZ Permanent Resident Population by Sector," provides the population distribution around the nuclear facility in a sector format.

Technical Evaluation: [J.10.b] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan contains figures that adequately show population distribution around the nuclear facility. This is acceptable because it conforms to the guidance in Evaluation Criterion J.10.b of NUREG-0654/FEMA-REP-1, Revision 1.

Technical Information in the Emergency Plan: [J.10.c] Personnel and visitors offsite, but within the owner-controlled area, are warned of an emergency by the Security Organization or by Squaw Creek Park personnel.

Technical Evaluation: [J.10.c] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately describes the means for notifying all segments of the transient and resident population. This is acceptable because it conforms to the guidance in Evaluation Criterion J.10.c of NUREG-0654/FEMA-REP-1, Revision 1.

Technical Information in the Emergency Plan: [J.10.m] Section J.10.m states that the choices of recommended protective actions are based on guidance provided in NUREG-0654, Supplement 3. Table II-3, "Protective Action Guides," identifies evacuation as the PAR when the projected dose is exceeded. In **RAI 3327, Question 13.03-9.J-4**, the staff requested additional information regarding how the ETE is used in the decision to implement an evacuation PAR. In its response, the applicant stated that the evacuation time estimate is not considered when PARs are developed. However, the information is provided to county officials responsible for protective action decisions.

Technical Evaluation: [J.10.m] As described above, the staff finds that the CPNPP, Units 3 and 4, Emergency Plan includes the basis for recommended protective actions for the plume exposure pathway during emergency conditions. This is acceptable because it conforms to the guidance in Evaluation Criterion J.10.m of NUREG-0654/FEMA-REP-1, Revision 1. The staff finds the applicant's response to **RAI 3327, Question 13.03-9.J-4** to be acceptable because it conforms to Evaluation Criteria J.10.m identified in NUREG-0654/FEMA-REP-1.

13.3C.10.11 Conclusion

The staff has reviewed the CPNPP, Units 3 and 4, Emergency Plan and the responses to **RAI 3327, Question 13.03-9.J-1** through **13.03-9.J-4** in regards to Planning Standard J of NUREG-0654, "Protective Response." The staff concludes that the information provided in the CPNPP, Units 3 and 4, Emergency Plan regarding protective response, together with the applicant's RAI

responses which are being tracked as **Confirmatory Items 13.03-34 through 13.03-36**, is acceptable and meets the requirements of 10 CFR 50.47(b)(10) because it complies with the guidance in Planning Standard J of NUREG-0654/FEMA-REP-1.

13.3C.11 Radiological Exposure Control

13.3C.11.1 Regulatory Basis

In determining whether the proposed emergency plan met the applicable regulatory requirements in 10 CFR 50.47(b)(11), the staff evaluated it against the detailed evaluation criteria in NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.11.2 Onsite Exposure Guidelines

Technical Information in the Emergency Plan: [K.1.a-g] Section K.1, "Onsite Exposure Guidelines and Authorizations," of the CPNPP, Units 3 and 4, Emergency Plan states that onsite exposure guidelines for emergency response personnel would be implemented consistent with EPA PAGs and that doses shall be held ALARA. In the absence of extenuating circumstances in Table II-4, "Emergency Worker Exposure Guidelines," 10 CFR Part 20 occupational dose limits are applied to activities including removal of injured persons, undertaking of corrective actions, performing assessment actions, providing first aid, performing personnel decontamination, providing ambulance service, and providing medical treatment services. If the Table II-4 extenuating circumstances exist, then the associated dose guidelines may be applied.

Technical Evaluation: [K.1.a-g] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately describes onsite exposure guidelines that are consistent with the guidance in EPA-400-R-92-001 for removal of injured persons, undertaking corrective actions, performing assessment actions, providing first aid, performing personnel decontamination, providing ambulance service, and providing medical treatment services. This is acceptable because it conforms to the guidance in Evaluation Criterion K.1.a-g of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.11.3 Onsite Radiation Protection Program

Technical Information in the Emergency Plan: [K.2] Guidelines for the Radiation Protection Program are summarized in Section K.2, "Radiation Protection Program," of the CPNPP, Units 3 and 4, Emergency Plan states that the Emergency Coordinator, in consultation with the TSC Radiological Assessment Coordinator and/or the EOF Radiological Protection Coordinator is responsible for authorization of any emergency exposures in excess of those in 10 CFR Part 20. In **RAI 3327, Question 13.03-10.K-1**, the staff requested clarification of whether the EOF Radiological Protection Coordinator in Section K.2 is the same as the Emergency Operations Facility RPC as listed in Section B.5, "Plant Emergency Response Positions". In its response, the applicant stated that the EOF RCP in Section II.B.5 of the Emergency Plan is the same position referenced in Section K.2. Section K.2 also identifies volunteers and their restrictions for performing emergency activities.

Section K.2 identifies Chapter 12 of the CPNPP, Units 3 and 4, FSAR as describing the Radiation Protection Program (RPP). FSAR Section 12.5, "Operational Radiation Protection Program," CP COL 12.1(5) states that the contents in DCD Section 12.5, are replaced with text incorporating NEI 07-03, "Generic FSAR Template Guidance for Radioactive Protection

Program Description,” Revision 5 by reference. In **RAI 3327, Question 13.03-10.K-2**, the staff requested additional information regarding procedures that govern the decision-making process to allow volunteers to receive doses in excess of routine limits during an emergency. In its response, the applicant stated that guidance for the allowance of increased emergency exposure at CPNPP, Units 1 and 2 is described in EPP-305, “Emergency Exposure Guidelines and Personnel Dosimetry.” This procedure details authorization for personnel to exceed exposure limits set in 10 CFR Part 20. The applicant stated that a procedure with similar content will be developed for CPNPP, Units 3 and 4.

Technical Evaluation: [K.2.] As described above, the staff finds that the CPNPP, Units 3 and 4, Emergency Plan describes the onsite radiation protection program to be implemented during emergencies, including methods to implement exposure guidelines. The plan identifies individuals by position who can authorize emergency workers to received doses in excess of 10 CFR Part 20 limits. This information conforms to the guidance described in Evaluation Criterion K.2 of NUREG-0654/FEMA-REP-1. In its response to **RAI 3327, Question 13.03-10.K-1**, the applicant stated that the text in Section K.2 will be revised to “EOF Radiation Protection Coordinator.” This is acceptable because it conforms to Evaluation Criteria K.2 of NUREG-0654/FEMA-REP-1. **Confirmatory Item 13.03-37** has been created to track this revision.

In its response to **RAI 3327, Question 13.03-10.K-2**, the applicant stated that Section II.K.2 of the Emergency Plan will be revised to indicate that information regarding the processes for authorizing and implementing emergency dose constraints is discussed in the EPP addressing “Emergency Exposure Guidelines and Personnel Dosimetry.” This is acceptable because it conforms to Evaluation Criteria K.2 of NUREG-0654/FEMA-REP-1. **Confirmatory Item 13.03-38** has been created to track the revision of Section II.K.2.

13.3C.11.4 Capability to Determine Dose Received by Emergency Personnel

Technical Information in the Emergency Plan: [K.3.a] Section K.3.a, “Dosimetry and Dose Assessment,” states that the applicant provides and distributes self-reading and permanent record dosimeters to emergency response personnel regardless of affiliation, that the ranges are sufficient to measure both routine and accident doses, that doses are tracked throughout the emergency, and dose assessment capabilities are available on a 24-hour basis. Section K.3.a also states that EPPs establish requirements for dosimeter distribution.

Technical Evaluation: [K.3.a] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately describes provisions for 24-hour-per-day capability to determine the doses received by emergency personnel involved in any radiological emergency. This is acceptable because it conforms to the guidance in evaluation criterion of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.11.5 Dose Records for Emergency Personnel

Technical Information in the Emergency Plan: [K.3.b] Section K.3.b, “Dosimetry and Dose Assessment,” of the CPNPP, Units 3 and 4, Emergency Plan states that EPPs establish requirements for periodic reading of self-reading dosimeters to comply with emergency exposure guidelines. Section K.3.b also states that personnel exposure history records are available to TSC, OSC, and EOF personnel and those decisions are made using both exposure history and self-reading dosimetry.

Technical Evaluation: [K.3.b] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately ensures that dosimeters are read at appropriate frequencies and provides for

maintaining dose records for emergency workers involved in any nuclear accident. This is acceptable because it conforms to the guidance in Evaluation Criterion K.3.b of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.11.6 Decontamination Action Levels

Technical Information in the Emergency Plan: [K.5.a] Section K.5, “Decontamination Action Levels,” of the CPNPP, Units 3 and 4, Emergency Plan states that when removable contamination levels exceed 1,000 dpm per 100 cm² beta-gamma within the Owner Controlled Area, but outside the Radiation Controlled Area (RCA), the area will be isolated and controlled as an RCA in accordance with RPP procedures. Section K.5 also states that if contamination levels in a RCA exceed 1,000 dpm per 100 cm² beta-gamma other protective measures shall be considered. Section K.5 states that, personnel and area decontamination requirements, including action levels and criteria for returning to normal use, are implemented using procedures supporting the RPP.

Technical Evaluation: [K.5.a] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately addresses decontamination action levels. This is acceptable because it conforms to the guidance in Evaluation Criterion K.5.a of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.11.7 Decontamination Facilities and Supplies

Technical Information in the Emergency Plan: [K.5.b] {Appendix E, Section IV.E.3} Section K.5.b, “Decontamination Action Levels,” of the CPNPP, Units 3 and 4, Emergency Plan states that decontamination shall be directed by appropriately trained personnel and performed in accordance with approved EPPs and RPP procedures which are stated to describe the actions for skin contamination or suspected internal contamination. Appendix 6 of the Emergency Plan provides a description of emergency equipment and decontamination supplies. Section K.5 also states that procedures for decontamination of onsite emergency personnel wounds, supplies, instruments and equipment, and waste disposal are included in the EPPs.

Technical Evaluation: [K.5.b] {Appendix E, Section IV.E.3} The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately addresses decontamination of emergency personnel and equipment, in accordance with approved EPPs and RPP procedures. This is acceptable because it conforms to the guidance in Evaluation Criterion K.5.b of NUREG-0654/FEMA-REP-1, Revision 1, and the requirements of Appendix E to 10 CFR Part 50, Section IV.E.3.

13.3C.11.8 Onsite Contamination Control

Technical Information in the Emergency Plan: [K.6.a] Section K.6.a, “Contamination Control Measures,” of the CPNPP, Units 3 and 4, Emergency Plan states that the RPP and its supporting procedures provide requirements for limiting access to areas with significant radiological hazards consistent with 10 CFR Part 20 and Chapter 12 of the FSAR, which references NEI 07-03. NEI 07-03 addresses access control in its Section 12.5.4.4. Section K.6.a also states that if immediate areas around the site are contaminated that an access point may be established at the NOSF, which is where the EOF is located.

[K.6.b] Section K.6.b, “Contamination Control Measures,” states that drinking water and food supplies that have been outside the CR ventilation envelope and within a Radiation Controlled Area (RCA) shall not be consumed without a survey by Radiation Protection personnel. Section K.6.b also states that if there is the potential for onsite food or drinking water to be non-

consumable due to contamination, that personnel will make arrangements for transport of offsite non-contaminated supplies to be brought to the site.

[K.6.c] Section K.6.c, “Contamination Control Measures,” states that decontamination of personnel, equipment and areas are prioritized with personnel given first priority and equipment and areas essential to recovery then given priority. Section K.6.c also states that area and items are permitted to be returned to normal, non-contaminated use following surveys and that contamination levels meet criteria in the RPP.

Technical Evaluation: [K.6.a-c] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately addresses the contamination control by limiting access to areas with significant radiological hazards, preventing consumption of unsurveyed exposed drinking water and food supplies, and giving first priority to decontaminating personnel, and equipment and areas essential to recovery then given priority. This is acceptable because it conforms to the guidance in Evaluation Criterion K.6.a-c of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.11.9 Capability to Decontaminate Relocated Onsite Personnel

Technical Information in the Emergency Plan: [K.7] Section K.7, “Decontamination of Relocated CPNPP Units 3 and 4 Personnel,” of the CPNPP, Units 3 and 4, Emergency Plan states that the applicant makes provisions for protective clothing, contamination monitoring, and decontamination, including radioiodine skin contamination at the relocation site. Section K.7 also states that Appendix 6 provides the description of the equipment and supplies provided and that radioactive waste generated may be brought to the NOSF Laboratory Facilities and then to the site for processing as conditions permits.

Technical Evaluation: [K.7] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately describes the capability for decontaminating relocated onsite personnel, including provisions for extra clothing and decontaminants suitable for the type of contamination expected. This is acceptable because it conforms to the guidance in Evaluation Criterion K.7 of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.11.10 Conclusion

The staff has reviewed the CPNPP, Units 3 and 4, Emergency Plan and the applicant’s responses to **RAIs 3327, Questions 13.03-10.K-1 and 13.03-10.K-2** in regards to Planning Standard K, Organizational Control of NUREG-0654/FEMA-REP-1 and the applicable regulations as described above. The staff concludes that the information provided in the CPNPP, Units 3 and 4, Emergency Plan, together with the applicant’s responses to RAIs which are being tracked as **Confirmatory Items 13.03-37 and 13.03-38**, regarding radiation exposure control is acceptable and meets the requirements of 10 CFR 50.47(b)(11) because it complies with the guidance in Planning Standard K of NUREG-0654/FEMA-REP-1, and the applicable portions of Appendix E to 10 CFR Part 50 as described above.

13.3C.12 Medical and Public Health Support

13.3C.12.1 Regulatory Basis

In determining whether the proposed emergency plan met the applicable regulatory requirements in 10 CFR 50.47(b)(12), the staff evaluated it against the detailed evaluation criteria in NUREG-0654/FEMA-REP-1, Revision 1. The staff also evaluated the proposed

emergency plan against applicable regulatory requirements related to the area of “Medical and Public Health Support,” in Appendix E to 10 CFR Part 50.

13.3C.12.2 Onsite Medical Services

Technical Information in the Emergency Plan: [L.2] {Appendix E, Section IV.E.5} Section L.2, “Onsite First Aid Capability,” states that the site maintains a first aid station that contains supplies and equipment to treat those requiring first aid. A first aid team is also maintained at the site 24 hours a day. First aid kits with basic supplies are located throughout CPNPP, Units 3 and 4. Additional equipment for use by responders is available in the Access Building and Fire Brigade assembly areas. Selected personnel are trained to provide basic first aid and patient preparation. ERO personnel also receive annual instruction in handling contaminated injured individuals.

Technical Evaluation: [L.2] {Appendix E, Section IV.E.5} The staff finds the information submitted in the CPNPP, Units 3 and 4, Emergency Plan to be acceptable. The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately describes arrangements made for the services of physicians and other medical personnel qualified to handle radiation emergencies onsite. This is acceptable because it meets the requirements in Appendix E to 10 CFR Part 50, Section IV.E.5 and it conforms to the guidance in Evaluation Criterion L.2 of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.12.3 Offsite Medical Services

Technical Information in the Emergency Plan: [L.1] {Appendix E, Section IV.E.7} Section L.1, “Hospital and Medical Support,” states that agreements are maintained with Lake Granbury Medical Center (LGMC) and Harris Methodist Walls Regional Hospital (WRH) to provide medical services for injured personnel. Radiological monitoring and control equipment and supplies are available and hospital personnel are trained to care for contaminated, injured, or overexposed personnel. Both hospitals maintain the capability to evaluate/handle the radiation exposure/uptake of accident victims. Extended LOA with LGMC and WRH are provided in Appendix 7, “Certification Letters and Letters of Agreement.”

[L.4] {Appendix E, Section IV.E.6} Section L.4, “Medical Emergency Transportation,” states that a vehicle is available onsite for the transportation of injured personnel. A Radiation Protection Technician (RPT) equipped with suitable radiological monitoring equipment will accompany contaminated individuals being transported for medical care. Agreements are also maintained with the Somervell County Fire, Rescue, and EMS Service and Granbury/Hood County Emergency Medical Service, Inc., to provide support as necessary.

Technical Evaluation: [L.1] {Appendix E, Section IV.E.7} The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately describes arrangements made for treatment of individuals injured in support of licensed activities on the site at treatment facilities outside the site boundary. This is acceptable because it meets the requirements in Appendix E to 10 CFR Part 50 and it conforms to the guidance in Evaluation Criterion L.1 of NUREG-0654/FEMA-REP-1, Revision 1.

[L.4] {Appendix E, Section IV.E.6} The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately describes the arrangements made for transportation of contaminated injured individuals from the site to specifically identified treatment facilities outside the site boundary. This is acceptable because it meets the requirements in Appendix E to 10 CFR Part 50, Section

IV.E.6 and it conforms to the guidance in Evaluation Criterion L.4 of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.12.4 Conclusion

The staff concludes that the information provided in the CPNPP, Units 3 and 4, Emergency Plan regarding medical and public health support is acceptable and meets the requirements of 10 CFR 50.47(b)(12), because it complies with the guidance in Planning Standard L of NUREG-0654/FEMA-REP-1, Revision 1, and the applicable portions of Appendix E to 10 CFR Part 50 as described above.

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

13.3C.13.1 Regulatory Basis

In determining whether the proposed emergency plan met the applicable regulatory requirements in 10 CFR 50.47(b)(13), the staff evaluated it against the detailed valuation criteria in NUREG-0654/FEMA-REP-1, Revision 1. The staff also evaluated the proposed emergency plan against applicable regulatory requirements related to the area of "Recovery and Reentry Planning and Post-Accident Operations," in Appendix E to 10 CFR Part 50.

13.3C.13.2 Plans and Procedures for Reentry and Recovery

Technical Information in the Emergency Plan: [M.1] {Appendix E, Section IV.H} Section M.1, "Recovery Plans and Procedures," states that recovery plans and procedures are implemented to provide guidance for a range of recovery and reentry activities. Section M.2, "Recovery Organization," provides conditions considered appropriate for recommendations to relax protection measures including: site operational parameters no longer indicate a potential or actual emergency exists, release of radioactivity from the site is controllable, no longer exceeds permissible levels and does not present a credible danger to the public, and the site is capable of sustaining itself in a long term shutdown condition.

Technical Evaluation: [M.1] {Appendix E, Section IV.H} The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately describes general plans and procedures for reentry and recovery and describes the means by which decisions to relax protective measures are reached. This process considers both existing and potential conditions. This is acceptable because it conforms to the guidance in Evaluation Criterion M.1 of NUREG-0654/FEMA-REP-1, Revision 1, and the requirements in Appendix E to 10 CFR Part 50, Section IV.H.

13.3C.13.3 Recovery Organization

Technical Information in the Emergency Plan: [M.2] Section M.2, "Recovery Organization," of the CPNPP, Units 3 and 4, Emergency Plan describes the recovery organization including the authorities and responsibilities of the Recovery Manager and discusses additional support for the recovery. The Recovery Manager is responsible for directing actions of the Recovery Organization and has the responsibilities and authorities previously assigned to the Emergency Coordinator. Operations Support personnel are identified as having responsibilities for analyzing and developing plans and procedures to support restoration of the site to operational status. Some activities of the Operations Support personnel include providing direct support to shift operations, analyzing instrument and control problems, developing guidance for shift operations personnel and developing emergency procedures for operations support, but

positions and authorities of key Operations Support personnel need to be provided. Technical Support personnel are identified as having responsibilities for providing engineering and technical specialists to support other managers. Additional responsibilities include, but are not limited to assuring design activities are adequately staffed and equipped, providing direct interface between CPNPP personnel and others on administrative matters, and directing, coordinating and approving engineering and design activities. In **RAI 3327, Question 13.03-11.M-1**, the staff requested information regarding the position/title and authorities of Operations Support and Technical Support key positions that have the responsibility for analyzing and developing plans and procedures to support restoration of the site to operational status. In its response, the applicant stated that Section II.M.2 of the Emergency Plan describes the Recovery Manager as responsible for overall direction and control of the Recovery Operation. The applicant stated that responsibilities of the Recovery Organization will be discussed in the EPP regarding "Reentry, Recovery, and Closeout." Additional resources and personnel are available as Corporate Support upon request of the Recovery Manager. In a follow-up RAI 4579, Question 13.3-39 (tracked as **Open Item 13.03-09**), the staff requested additional information regarding the position title and authorities of key positions of the Operations Support and Technical Support staff and that they will be identified in the emergency plan. In its response to this follow-up RAI 4579, Question 13.3-39 (tracked as **Open Item 13.03-09**), the applicant explained that EPP-121, "Reentry, Recovery, and Closeout," included the recovery responsibilities for the Emergency Coordinator (Recovery Manager), EOF RPC, TSC Onsite Radiological Assessment Coordinator, OSC RPC, and TSC or EOF Communications Coordinator. The applicant explained, that once established, the Recovery Organization would absorb members of the ERO and that these members would perform their functional assignments and responsibilities as outlined in Sections II.B.1, II.B.2 and II.B.5 of the Emergency Plan.

Technical Evaluation: [M.2] As described above, the staff finds the CPNPP, Units 3 and 4, Emergency Plan provides the position/title, authority and responsibilities of individuals who will fill key positions in the facility recovery organization. The organization includes technical personnel with responsibilities to develop, evaluate and direct recovery and reentry operations. This is acceptable because it conforms to the guidance in evaluation criterion M.2 of NUREG-0654/FEMA-REP-1. In its response to **RAI 3327, Question 13.03-11.M-1**, the applicant provided information for the Recovery Manager; however, the position title and authorities are also needed for the Technical Support and Operations Support positions and that information was not included. In its response to a follow-up RAI 4579, Question 13.3-39 (tracked as **Open Item 13.03-09**), the applicant stated that the applicant will revise Section II.M.2 of the Emergency Plan to clarify that the Recovery Organization absorbs members of the ERO once it is established during the Recovery Phase. This is acceptable because it conforms to Evaluation Criteria M.2 of NUREG-0654/FEMA-REP-1. This revision is being tracked by the staff as **Confirmatory Item 13.03-68**.

13.3C.13.4 Recovery Operations Initiation

Technical Information in the Emergency Plan: [M.3] Section M.3, "Notification of Initiation and Changes in Organizational Structure," of the CPNPP, Units 3 and 4, Emergency Plan identifies the EOF Manager as responsible for notifying the NRC Operations Center, State EOC, and local EOCs that the emergency has been terminated and any required recovery has commenced. The TSC or EOF Communications Coordinator directs communication to the supporting EROs detailing the change in site status and the organizational transition. The State of Texas Emergency Management Plan specifies that the State will coordinate regularly with

local governments, Federal agencies, volunteer groups, and industry on recovery activities to coordinate actions, provide information, and resolve issues.

Technical Evaluation: [M.3] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately addresses the means for informing members of the response organizations that a recovery operation is to be initiated, and of any changes in the organizational structure that may occur. This is acceptable because it conforms to the guidance in evaluation criterion M.3 of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.13.5 Methods to Estimate Total Population Exposure

Technical Information in the Emergency Plan: [M.4] Section M.4, “Updating Total Population Exposure During Recovery Operations,” states that site personnel periodically estimate total population dose in the affected sectors and zones utilizing population data for the EPZ. Section M.4 states that these activities are conducted in accordance with Appendix 7 of the State Radiological Emergency Management Plan. The State of Texas, Emergency Management Plan, Annex D, “Radiological Emergency Management,” identifies State activities to include evaluating actual or potential exposures and advising the Commissioner, local elected officials, the appropriate Disaster District Committee, and the State Council concerning protective actions necessary to safeguard lives and property.

Technical Evaluation: [M.4] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately establishes a method for periodically estimating total population exposure. This is acceptable because it conforms to the guidance in Evaluation Criterion M.4 of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.13.6 Conclusion

The staff has reviewed the CPNPP, Units 3 and 4, Emergency Plan and the applicant’s response to **RAI 3327, Question 13.03-11.M-1**, in regards to Planning Standard M, Recovery and Reentry Planning and Post-accident Operations of NUREG-0654/FEMA-REP-1 and Applicable Regulation. The staff concludes that the information provided in the CPNPP, Units 3 and 4, Emergency Plan together with the applicant’s RAI response that is being tracked as **Confirmatory Item 13.03-68**, regarding recovery and reentry planning and post-accident operations is acceptable and meets the requirements of 10 CFR 50.47(b)(13) because it complies with the guidance in Planning Standard M of NUREG-0654/FEMA-REP-1, and the applicable portions of Appendix E to 10 CFR Part 50 as described above.

13.3C.14 Exercises and Drills

13.3C.14.1 Regulatory Basis

In determining whether the proposed emergency plan met the applicable regulatory requirements in 10 CFR 50.47(b)(14), the staff evaluated it against the detailed evaluation criteria in NUREG-0654/FEMA-REP-1, Revision 1. The staff also evaluated the proposed emergency plan against applicable regulatory requirements related to the area of “Exercises and Drills,” in Appendix E to 10 CFR Part 50.

13.3C.14.2 Emergency Preparedness Exercise Purpose and Content

Technical Information in the Emergency Plan: [N.1.a] Section N.1.a, “Exercise Scope and Frequency,” states that emergency exercises are conducted in accordance with the NRC and FEMA requirements (e.g., 10 CFR 50.47(b)(14), 10 CFR Part 50 Appendix E.IV.F, and 44 CFR 350.9). The applicant has proposed emergency planning ITAAC 8.1 to ensure a full participation exercise (test) will be conducted within the specified time periods of Appendix E to 10 CFR Part 50.

Technical Evaluation: [N.1.a] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately states that the exercises will test the integrated capability and the major elements of the emergency plans and preparedness program. In addition, the emergency preparedness exercise will, as appropriate, simulate an emergency that results in offsite radiological releases which would require response by offsite authorities and that exercises will be conducted as set forth in the NRC and FEMA rules. This is acceptable because it conforms to the guidance in Evaluation Criterion N.1.a of NUREG-0654/FEMA-REP-1, Revision 1. The evaluation of emergency planning ITAAC is in Section 13.3C.19 of this FSER.

Technical Information in the Emergency Plan: [N.1.b] Section N.1.b, “Exercise Scenarios and Participation,” states that State and local plans provide for mobilization of personnel and resources adequate to verify the capability to respond to an incident requiring response. Federal and State observers/evaluators will have the opportunity to critique the exercise. In addition, exercises test the familiarity of emergency organization personnel with their duties. Exercise scenarios are varied to test major elements of the plans and preparedness of organizations within a six year period. Once every six years, the specific exercise date is unannounced and/or during off hours between six o’clock p.m. and four o’clock a.m. on a weekday or during a weekend.

Section N.1.b states that exercises will test the adequacy of timing and content of implementing procedures and methods, emergency equipment and communications networks, the public notification system, and familiarity of personnel with their duties. Section N.1.b, specifies that State and local plans provide for mobilization of personnel and resources adequate to verify the capability to respond to an incident requiring response.

Technical Evaluation: [N.1.b] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately states that exercises will include mobilization of State and local personnel and resources adequate to verify the capability to respond to an emergency event. In addition, the CPNPP3&4 Emergency Plan adequately describes provisions for a critique of the biennial exercise by Federal and State observers/evaluators. This is acceptable because it conforms to the guidance described in Evaluation Criterion N.1.b of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.14.3 Emergency Preparedness Exercises

Technical Information in the Emergency Plan: {Appendix E, Section IV.F.2} Section N.1.b, “Exercise Scenarios and Participation,” states that State and local plans provide for mobilization of personnel and resources adequate to verify the capability to respond to an incident requiring response. Federal and State observers/evaluators will have the opportunity to critique the exercise. In addition, exercises test the familiarity of emergency organization personnel with their duties.

Technical Evaluation: {Appendix E, Section IV.F.2} The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately describes provisions for the conduct of emergency preparedness exercises and specifies that exercises test the adequacy of timing and content of

implementing procedures and methods, test emergency equipment and communications networks, test the public notification system, and ensure that emergency organization personnel are familiar with their duties. This is acceptable because it meets the requirements in Appendix E to 10 CFR Part 50, Section IV.F.2.

13.3C.14.4 Full Participation Exercise Before Fuel Load

Technical Information in the Emergency Plan: {Appendix E, Section IV.F.2.a} Section N.1.b, states that State and local plans provide for mobilization of personnel and resources adequate to verify the capability to respond to an incident requiring response. Federal and State observers/evaluators will have the opportunity to critique the exercise. In addition, exercises test the familiarity of emergency organization personnel with their duties. Exercise scenarios are varied to test major elements of the plans and preparedness of organizations within a six year period. The applicant has proposed emergency planning ITAAC 8.0 to ensure a full participation exercise (test) will be conducted within the specified time periods of Appendix E to 10 CFR Part 50.

Technical Evaluation: {Appendix E, Section IV.F.2.a} The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately describes provisions for the conduct of emergency preparedness exercises and specifies that exercises test the adequacy of timing and content of implementing procedures and methods, test emergency equipment and communications networks, test the public notification system, and ensure that emergency organization personnel are familiar with their duties. This is acceptable because it meets the requirements in Appendix E to 10 CFR Part 50, Section IV.F.2.a. The evaluation of emergency planning ITAAC is in Section 13.3C.19 of this FSER.

13.3C.14.5 Onsite Biennial Exercise

Technical Information in the Emergency Plan: {Appendix E, Section IV.F.2.b} Section N.2, "Drills," states that drills are conducted to maintain adequate emergency response capabilities between biennial exercises. At least one drill includes involving a combination of some of the principal functional areas of onsite emergency response capabilities including activities such as management and coordination of emergency response, accident assessment, protective action decision making, and plant system repair and corrective actions. The State of Texas and Somervell and Hood County governments are encouraged to participate in the drills and enables participation when requested.

Technical Evaluation: {Appendix E, Section IV.F.2.b} The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately states that an exercise of its onsite emergency plan will be conducted every two years and adequately describes actions that will be taken to ensure that adequate emergency response capabilities are maintained during the interval between biennial exercises by conducting drills, including at least one drill involving a combination of some of the principal functional areas of the licensee's onsite emergency response capabilities. This is acceptable because it meets the requirements in Appendix E to 10 CFR Part 50, Section IV.F.2.b.

13.3C.14.6 Offsite Biennial Exercise

Technical Information in the Emergency Plan: {Appendix E, Section IV.F.2.c} Section N.1.b states that the applicant conducts exercises on a periodic basis including biennial

exercises required under 10 CFR 50 Appendix E. Federal and State observers and evaluators are afforded the opportunity to critique the exercises.

Technical Evaluation: {Appendix E, Section IV.F.2.c} The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately states that offsite plans for the site will be exercised biennially with participation by each offsite authority having a role under the CPNPP, Units 3 and 4, Emergency Plan. Periodic offsite exercises, including those on a biennial basis, which afford the opportunity for evaluation and critique, are acceptable because they meet the requirements in Appendix E to 10 CFR Part 50, Section IV.F.2.c.

13.3C.14.7 Ingestion Pathway Exercise with the State

Technical Information in the Emergency Plan: {Appendix E, Section IV.F.2.d} Section N.1.b, "Exercise Scenarios and Participation," states that exercises test the familiarity of emergency organization personnel with their duties. Exercise scenarios are varied to test major elements of the plans and preparedness of organizations within a six year period. The applicant has proposed emergency planning ITAAC 8.0 to ensure an exercise (test) will be conducted within the specified time periods of Appendix E to 10 CFR Part 50 and includes each State within the ingestion control EPZ.

Technical Evaluation: {Appendix E, Section IV.F.2.d} The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately describes how the licensee will use exercise scenarios to test major elements of the plan and coordinate with the State to integrate Ingestion Pathway exercises into the biennial exercise program. These types of exercise are acceptable because they meet the requirements in Appendix E to 10 CFR Part 50, Section IV.F.2.d. The evaluation of emergency planning ITAAC is in Section 13.3C.19 of this FSER.

13.3C.14.8 Enabling Local and State Participation in Drills

Technical Information in the Emergency Plan: {Appendix E, Section IV.F.2.e} Section N.1.b states that Federal, State, or local governments are afforded the opportunity to participate, observe, evaluate, and critique exercises conducted on a periodic basis including biennial exercises required under 10 CFR 50 Appendix E.

Technical Evaluation: {Appendix E, Section IV.F.2.e} The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately describes how the licensee will enable any State or local Government located within the plume exposure pathway EPZ to participate in the licensee's drills when requested by such State or local Government. This is acceptable because it meets the requirements in Appendix E to 10 CFR Part 50, Section IV.F.2.e.

13.3C.14.9 Remedial Exercises

Technical Information in the Emergency Plan: {Appendix E, Section IV.F.2.f} Section N.1.b, "Exercise Scenarios and Participation," briefly describes remedial exercises. In **RAI 3327, Question 13.03-12.N-1**, the staff requested that the applicant provide a discussion regarding remedial exercises. In its response, the applicant stated that the CPNPP, Units 3 and 4, Emergency Plan will be revised to indicate that a remedial exercise will be conducted if the emergency plan is not satisfactorily demonstrated during the biennial exercise.

Technical Evaluation: {Appendix E, Section IV.F.2.f} As described above, the staff finds that the CPNPP, Units 3 and 4, Emergency Plan describes how remedial exercises will be

conducted if the emergency plan is not satisfactorily tested during the biennial exercise, such that the NRC and FEMA, cannot find reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency. This is acceptable because it meets the requirements in Appendix E to 10 CFR Part 50, Section IV.F.2.f. In its response to **RAI 3327, Question 13.03-12.N.1**, the applicant stated that a remedial exercise will be conducted if the emergency plan is not satisfactorily demonstrated during the biennial exercise. The staff finds the additional information and textual revisions submitted in response to RAI 3327, Question 13.03-12.N-1, to be acceptable because it conforms to Section IV.F.2.f of 10 CFR Part 50 Appendix E. **Confirmatory Item 13.03-39** was created to track this revision.

13.3C.14.10 Drills

Technical Information in the Emergency Plan: [N.2] Section N.2, “Drills,” of the CPNPP, Units 3 and 4, Emergency Plan states that drills are conducted to maintain adequate emergency response capabilities between biennial exercises. At least one drill includes involving a combination of some of the principal functional areas of onsite emergency response capabilities including, activities such as management and coordination of emergency response, accident assessment, protective action decision making, and plant system repair and corrective actions. The State of Texas and Somervell and Hood County governments are encouraged to participate in the drills and enables participation when requested.

Technical Evaluation: [N.2] The staff finds the CPNPP, Units 3 and 4, Emergency Plan adequately describes how a drill is a supervised instruction period aimed at testing, developing and maintaining skills in a particular operation. This is acceptable because it conforms to the guidance in Evaluation Criterion N.2 of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.14.11 Communications Drills

Technical Information in the Emergency Plan: [N.2.a] {Appendix E, Section IV.E.9(b)} Section N.2.a, “Communications Drills,” states that communications testing between the CPNPP, Units 3 and 4, and other participating organizations includes the Department of Public Safety, and County EOCs which are tested monthly; Federal agencies, and the State of Texas which are tested quarterly; and State and local EOCs and radiological monitoring teams which are tested annually.

Technical Evaluation: [N.2.a] {Appendix E, Section IV.E.9(b)} The staff finds the CPNPP, Units 3 and 4, Emergency Plan adequately describes how communications with State and local governments in the plume exposure pathway EPZ will be tested monthly. This is acceptable because it conforms to the guidance in Evaluation Criterion N.2.a of NUREG-0654/FEMA-REP-1, Revision 1, and the requirements of Appendix E to 10 CFR Part 50, Section IV.E.9(b).

13.3C.14.12 Fire Drills

Technical Information in the Emergency Plan: [N.2.b] Section 9.5.1.6.2.1.3 of the FSAR, “Fire Drills,” states that fire brigade drills are conducted quarterly. Each individual member of a fire brigade is required to participate in at least two drills per year. Offsite fire organizations participate in a fire brigade drill at least annually. Each drill has specific training objectives established prior to the drill and are followed by a critique. Section N.2.b, “Fire Drills,” of the CPNPP, Units 3 and 4, Emergency Plan states that Somervell County Fire, Rescue, and EMS Service are invited to participate annually in one of the periodic drills.

Technical Evaluation: [N.2.b] The staff finds the CPNPP, Units 3 and 4, Emergency Plan adequately describes how fire drills will be conducted in accordance with the CPNPP, Units 3 and 4, FSAR. This is acceptable because it conforms to the guidance in Evaluation Criterion N.2.b of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.14.13 Medical Emergency Drills

Technical Information in the Emergency Plan: [N.2.c] Section N.2.c, "Medical Emergency Drills," states that medical emergency drills are conducted annually and include a simulated contaminated injured individual, transportation to an offsite facility, and participation by the local support services.

Technical Evaluation: [N.2.c] The staff finds the CPNPP, Units 3 and 4, Emergency Plan adequately describes that a medical emergency drill involving a simulated contaminated individual includes provisions for participation by the local support services agencies (i.e., ambulance and offsite medical treatment facility) will be conducted annually. In addition, the staff finds the CPNPP, Units 3 and 4, Emergency Plan adequately describes that the offsite portions of the medical drill may be performed as part of the required biennial exercise. This is acceptable because it conforms to the guidance in Evaluation Criterion N.2.c of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.14.14 Radiological Monitoring Drills

Technical Information in the Emergency Plan: [N.2.d] Section N.2.d, "Radiological Monitoring Drills," states that radiological monitoring drills include collection and analysis of all sample media and provisions for communications and record keeping. Drills may be conducted independently or in coordination with the State of Texas and Somervell and Hood County. In **RAI 3327, Question 13.03-12.N-2**, the staff requested the applicant verify that radiological drills are conducted annually. In its response, the applicant stated that Section II.N.2.d will be revised to indicate the radiological monitoring drills are conducted annually.

Technical Evaluation: [N.2.d] As described above, the staff finds that the CPNPP, Units 3 and 4, Emergency Plan states that plant environs and radiological monitoring drills (onsite and offsite) will be conducted annually; and where appropriate, local organizations will participate. This is acceptable because it conforms to the guidance in Evaluation Criterion N.2.d of NUREG-0654/FEMA-REP-1, Revision 1. In its response to **RAI 3327, Question 13.03-12.N-2**, the applicant stated that Section II.N.2.d will be revised to indicate the radiological monitoring drills are conducted annually. This is acceptable because it conforms to the Evaluation Criteria N.2.d in NUREG-0654/FEMA-REP-1. **Confirmatory Item 13.03-40** has been created to track this revision.

13.3C.14.15 Health Physics Drills

Technical Information in the Emergency Plan: [N.2.e] Section N.2.e, "Radiation Protection Drills," of the CPNPP, Units 3 and 4 Emergency Plan states that drills are conducted semi-annually for onsite Radiation Protection that include response to and analysis of simulated elevated airborne and liquid activity levels; simulated elevated area radiation levels; and simulated radiological situation using the appropriate procedures. Section 2.e states that radiation protection drills include response to and analysis of simulated elevated airborne and liquid activity samples.

Technical Evaluation: [N.2.e] The staff finds the CPNPP, Units 3 and 4, Emergency Plan adequately describes how health physics drills will be conducted semi-annually and will involve response to, and analysis of, simulated elevated airborne and liquid samples and direct radiation measurements in the environment. This is acceptable because it conforms to the guidance in Evaluation Criterion N.2.e of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.14.16 Conduct of Drills and Exercises

Technical Information in the Emergency Plan: [N.3.a-f] Section N.3, "Conduct of Drills and Exercises," states that scenarios are designed to allow free play in decision-making. Scenarios include basic objective(s) of each drill and exercise, and appropriate evaluation criteria, date(s), time period(s), location(s), and participating organizations, simulated events, time schedule of real and simulated initiating events, narrative summary describing conduct of the exercise or drill which addresses simulated casualties, offsite fire department assistance, rescue of personnel, use of protective clothing, deployment of radiological monitoring teams, public information activities, and description of arrangements for and advance materials to be provided to official observers. The Emergency Planning Group develops drill and exercise objectives and exercise programs. The scenarios and objectives are submitted to the NRC and/or FEMA for review and approval.

Technical Evaluation: [N.3.a-f] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately describes how exercises and drills will be carried out to allow free play for decision-making and to meet the exercise objectives. This is acceptable because it conforms to the guidance in Evaluation Criterion N.3.a-f of NUREG-0654/FEMA-REP-1, Revision 1.

Technical Information in the Emergency Plan: [N.3.b] Section N.3 states that scenarios include basic objective(s) of each drill and exercise, and appropriate evaluation criteria, date(s), time period(s), location(s), and participating organizations.

Technical Evaluation: [N.3.b] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately describes how the scenarios for use in exercises and drills will include the date(s), time period, place(s) and participating organizations. This is acceptable because it conforms to the guidance described in Evaluation Criterion N.3.b of NUREG-0654/FEMA-REP-1, Revision 1.

Technical Information in the Emergency Plan: [N.3.c] Section N.3 states that scenarios include a time schedule of real and simulated initiating events.

Technical Evaluation: [N.3.c] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately describes how the scenarios for use in exercises and drills will include both real and simulated events. This is acceptable because it conforms to the guidance described in Evaluation Criterion N.3.c of NUREG-0654/FEMA-REP-1, Revision 1.

Technical Information in the Emergency Plan: [N.3.d] Section N.3 states that scenarios include a time schedule of real and simulated initiating events.

Technical Evaluation: [N.3.d] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately describes how the scenarios for use in exercises and drills will include a time schedule of real and simulated initiating events. This is acceptable because it conforms to the guidance described in Evaluation Criterion N.3.d of NUREG-0654/FEMA-REP-1, Revision 1.

Technical Information in the Emergency Plan: [N.3.e] Section N.3 states that scenarios include a narrative summary describing conduct of the exercise or drill which addresses simulated casualties, offsite fire department assistance, rescue of personnel, use of protective clothing, deployment of radiological monitoring teams, and public information activities.

Technical Evaluation: [N.3.e] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately describes how the scenarios for use in exercises and drills will include a narrative summary describing the conduct of the exercises or drills to include such things as simulated casualties, offsite fire department assistance, rescue of personnel, use of protective clothing, deployment of radiological monitoring teams, and public information activities. This is acceptable because it conforms to the guidance described in Evaluation Criterion N.3.e of NUREG-0654/FEMA-REP-1, Revision 1.

Technical Information in the Emergency Plan: [N.3.f] Section N.3 states that scenarios include a description of arrangements for and advance materials to be provided to official observers.

Technical Evaluation: [N.3.f] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately describes how the scenarios for use in exercises and drills will include a description of the arrangements for and advance materials to be provided to official observers. This is acceptable because it conforms to the guidance described in Evaluation Criterion N.3.f of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.14.17 Observing, Evaluating, and Critiquing Drills and Exercises

Technical Information in the Emergency Plan: [N.4] {Appendix E, Section IV.F.2(g)} Section N.4, "Provisions for Observing, Evaluating, and Critiquing Exercises," states that the applicant provides the opportunity for official observers from Federal agencies, the State of Texas, and Somervell and Hood Counties to participate, observe, evaluate, and critique exercises. Section N.5, "Exercise Evaluation and Corrective Actions," identifies the Emergency Planning Group responsible for conducting exercise critiques and preparing a written summary of each critique. For each drill, the drill evaluator prepares a written critique and the Emergency Planning Manager is responsible for ensuring appropriate changes are incorporated in the Emergency Plan and EPPs.

Technical Evaluation: [N.4] {Appendix E, Section IV.F.2(g)} The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately describes provisions for official observers from Federal, State or local governments to participate, observe, evaluate, and critique the required exercises. This is acceptable because it conforms to the applicable requirements in Appendix E to 10 CFR Part 50, Section IV.F.2(g) and the guidance described in Evaluation Criterion N.4 of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.14.18 Means to Correct Areas Needing Improvement

Technical Information in the Emergency Plan: [N.5] Section N.5, "Exercise Evaluation and Corrective Actions," of the CPNPP, Units 3 and 4, Emergency Plan states that each drill is evaluated by a qualified instructor. The instructor is responsible for preparing an evaluation of the drill that includes identification of deficiencies. The Emergency Planning Manager is responsible for incorporating changes in the Plan and emergency procedures changes.

Technical Evaluation: [N.5] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately describes a means for evaluating observer and participant comments on areas needing improvement, including emergency plan procedural changes, and for assigning responsibility for implementing corrective actions. The CPNPP, Units 3 and 4, Emergency Plan also establishes management control used to ensure that corrective actions are implemented. This is acceptable because it conforms to the guidance described in Evaluation Criterion N.5 of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.14.19 Conclusion

The staff has reviewed the CPNPP, Units 3 and 4, Emergency Plan and the applicant's responses to **RAIs 3327, Question 13.03-12.N-1 and 13.03-12.N-2** in regards to Planning Standard N, Exercises and Drills of NUREG-0654/FEMA-REP-1 and Applicable Regulation. The staff concludes that the information provided in the CPNPP, Units 3 and 4, Emergency Plan and the additional information provided by the applicant in response to the RAIs identified above regarding exercises and drills which are being tracked as **Confirmatory Items 13.03-39 and 13.03-40**, are acceptable and meets the requirements of 10 CFR 50.47(b)(14) because it complies with the guidance in Planning Standard N of NUREG-0654/FEMA-REP-1, and the applicable portions of Appendix E to 10 CFR Part 50 as described above.

13.3C.15 Radiological Emergency Training

13.3C.15.1 Regulatory Basis

In determining whether the proposed emergency plan met the applicable regulatory requirements in 10 CFR 50.47(b)(15), the staff evaluated it against the detailed evaluation criteria in NUREG-0654/FEMA-REP-1, Revision 1. The staff also evaluated the proposed emergency plan against applicable regulatory requirements related to the area of "Radiological Emergency Training," in Appendix E to 10 CFR Part 50.

13.3C.15.2 Training for Offsite Emergency Organizations

Technical Information in the Emergency Plan: [O.1.a] Section O.1.a, "Offsite Emergency Response Training," of the CPNPP, Units 3 and 4, Emergency Plan states the applicant provides or supports the training of offsite personnel that may provide assistance during an emergency. This includes affected hospital, ambulance/rescue, police, and firefighting personnel. Training may include scope of the plan, emergency classification, notification methods, basic radiation protection, site access procedures, definition of support roles, and the individual by title, in the ERO who will direct their activities. Training that addresses site access procedures is also offered to those that may have to enter the site.

Technical Evaluation: [O.1.a] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately describes the site-specific emergency response training to be provided for offsite emergency organizations that may be called upon to provide assistance in the event of an emergency. This is acceptable because it conforms to the guidance in Evaluation Criterion O.1.a of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.15.3 Onsite Emergency Response Organization Training

Technical Information in the Emergency Plan: [O.2] Section O.2, "Onsite Emergency Response Training," of the CPNPP, Units 3 and 4, Emergency Plan states that the emergency

response training program allows personnel to demonstrate the ability to perform emergency response functions in practical drills. An instructor/evaluator will immediately correct erroneous performance and demonstrate proper procedure. Additional information related to drills is provided in Section N.2, "Drills".

Technical Evaluation: [O.2] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately describes the training program for members of the onsite emergency organization. This is acceptable because it conforms to the guidance described in Evaluation Criterion O.2 of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.15.4 First Aid and Rescue Team Training

Technical Information in the Emergency Plan: [O.3] [O.4.f] {Appendix E, Section IV.F.1(b)(vi)} Section O.3, "First Aid Team Training," of the CPNPP, Units 3 and 4, Emergency Plan states that first aid training is provided to First Aid Team Members in accordance with procedures. Supporting procedures for training are identified in Appendix 5, "Emergency Plan Procedures." In **RAI 3327, Question 13.03-13.O-1**, the staff requested that the applicant clarify whether the training provided to the first aid team is equivalent to the Red Cross "first responder" training. In its response, the applicant stated that the Emergency Response Organization's Initial and Continuing "Emergency Preparedness Training" Program Curriculums outline training requirements. In a follow-up RAI 4579, Question 13.3-40 (tracked as **Open Item 13.03-10**), additional information was requested regarding whether the training provided to the first-aid team is equivalent to the Red Cross "first responder training." In its response, the applicant explained that the American Red Cross does not offer a course related to "first responders" and that the American Red Cross Multi-Media course has been cancelled. The applicant explained that all personnel are trained to provide basic first aid and patient preparation of onsite personnel who become injured or ill. In addition, the First Aid Team receives annual instruction in handling contaminated injured individuals. The applicant explained that based on its understanding of the Red Cross's Multi-Media training course, that the first aid training provided to CPNPP's First Aid Team meets or exceeds the content of the original Multi-Media training. The applicant also committed to revise Section II.O.3 of the Emergency Plan to clarify that the CPNPP First Aid training meets or exceeds the training formerly known as the Red Cross Multi-Media Training.

Technical Evaluation: [O.3] [O.4.f] {Appendix E, Section IV.F.1(b)(vi)} As described above, the staff finds that the CPNPP, Units 3 and 4, Emergency Plan describes the training for individuals assigned to licensee first aid teams. In addition, the Emergency Plan describes the training program for instructing and qualifying personnel who will implement radiological emergency response plans. This information is consistent with the guidance described in Evaluation Criterion O.3 and O.4.f of NUREG-0654/FEMA-REP-1 and 10 CFR Part 50 Appendix E, Section IV.F.1(b)(vi). The staff finds the applicant's response to **RAI 3327, Question 13.03-13.O-1**, acceptable. This is acceptable because it conforms to Evaluation Criteria O.3 and O.4.f in NUREG-0654/FEMA-REP-1 in addition to the requirements as specified in 10 CFR 50, Appendix E, Section IV.F.1(b)(vi). The applicant's commitment to revise Section II.O.3 of the CPNPP, Units 3 and 4, Emergency Plan to clarify that the CPNPP First Aid training meets or exceeds the training formerly known as the Red Cross Multi-Media Training is acceptable because it conforms to Evaluation Criteria O.3 of NUREG-0654/FEMA-REP-1. This is being tracked as **Confirmatory Item 13.03-69**.

13.3C.15.5 Training Program to Implement the Emergency Plan

Technical Information in the Emergency Plan: [O.4] {Appendix E, Section IV.F.1} Section O.4, "Emergency Response Training and Qualification," of the CPNPP, Units 3 and 4, Emergency Plan states that personnel are required to complete position-specific training prior to assignment to a position in the ERO. The training program establishes the scope, nature, and frequency of the required training and qualification measures. Specialized training is provided for the Emergency Coordinator, accident assessment personnel, radiological monitoring and analysis personnel, police, security and firefighting personnel, damage control team, first aid and rescue personnel, local support services, medical support personnel, corporate office support personnel and emergency communicators. A description of the training elements is provided for each functional area or position. Specialized training is provided for personnel responsible for accident assessment as described in Section O.4. In **RAI 3327, Question 13.03-13.O-2**, the staff requested the applicant to verify that CR personnel are included in accident assessment training. In its response, the applicant described that initial and continuing training for all personnel is provided in the EPP addressing "Emergency Preparedness Training." The applicant also stated that the Section II.O.4 of the Emergency Plan will be revised to indicate that initial and continuing training for all personnel is provided in the EPP addressing "Emergency Preparedness Training."

Technical Evaluation: [O.4.] {Appendix E, Section IV.F.1} As described above, the staff finds that the CPNPP, Units 3 and 4, Emergency Plan establishes a training program for instructing and qualifying personnel who will implement radiological emergency response plans. In its response to **RAI 3327, Question 13.03-13.O-2**, the applicant stated that the Section II.O.4 of the Emergency Plan will be revised to indicate that initial and continuing training for all personnel is provided in the EPP addressing "Emergency Preparedness Training." This is acceptable because it conforms to Evaluation Criteria O.4 within NUREG-0654/FEMA-REP-1 and 10 CFR Part 50 Appendix E, Section IV.F.1. **Confirmatory Item 13.03-41** has been created to track this revision.

13.3C.15.6 Training for Emergency Response Organization Directors

Technical Information in the Emergency Plan: [O.4.a] {Appendix E, Section IV.F.1(b)(i)} Section O.4.a provides position specific emergency response training for Emergency Coordinators which includes emergency condition assessment and classification, notification systems and procedures, organizational interfaces, evacuation, radiation exposure controls, off-site support, and recovery.

Technical Evaluation: [O.4.a] {Appendix E, Section IV.F.1(b)(i)} The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately describes the training program for instructing and qualifying personnel who will implement radiological emergency response plans. This is acceptable because it conforms to the guidance in Evaluation Criterion O.4.a of NUREG-0654/FEMA-REP-1, Revision 1, and meets the requirements of 10 CFR Part 50, Appendix E, Section IV.F.1(b)(i).

13.3C.15.7 Training for Accident Assessment Personnel

Technical Information in the Emergency Plan: [O.4.b] {Appendix E, Section IV.F.1(b)(ii)} Section O.4.b provides position specific emergency response training for accident assessment personnel which includes emergency condition assessment and classification, notification systems and procedures, and organizational interfaces.

Technical Evaluation: [O.4.b] {Appendix E, Section IV.F.1(b)(ii)} The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately describes specialized initial training for personnel responsible for accident assessment, including control room shift personnel. This is acceptable because it conforms to the guidance in Evaluation Criteria O.4.b of NUREG-0654/FEMA-REP-1, Revision 1, and meets the requirements of 10 CFR Part 50, Appendix E, Section IV.F.1(b)(ii).

13.3C.15.8 Training for Radiological Monitoring and Analysis Personnel

Technical Information in the Emergency Plan: [O.4.c] {Appendix E, Section IV.F.1(b)(iii)} Section O.4.c provides position specific emergency response training for Radiological Monitoring and Analysis Personnel which includes dose assessment, emergency exposure evaluation, protective measures, protective actions, contamination control and decontamination, and monitoring systems and procedures.

Technical Evaluation: [O.4.c] {Appendix E, Section IV.F.1(b)(iii)} The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately addresses the specialized initial training for radiological monitoring and analysis personnel. The description of the training is acceptable because it conforms to the guidance in Evaluation Criterion O.4.c of NUREG-0654/FEMA-REP-1, Revision 1, and meets the requirements of 10 CFR Part 50, Appendix E, Section IV.F.1(b)(iii).

13.3C.15.9 Training for Fire Fighting Teams

Technical Information in the Emergency Plan: [O.4.d] {Appendix E, Section IV.F.1(b)(iv)} Section O.4.d provides position specific emergency response training for police, security and fire fighting personnel which includes notification of site personnel, facility activation, personnel accountability and evacuation, and access control. Firefighting personnel receive annual site orientation, communications protocol and radiation protection training.

Technical Evaluation: [O.4.d] {Appendix E, Section IV.F.1(b)(iv)} The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately describes the specialized initial training for firefighting personnel. This is acceptable because it conforms to the guidance in Evaluation Criterion O.4.d of NUREG-0654/FEMA-REP-1, Revision 1, and meets the requirements of 10 CFR Part 50, Appendix E, Section IV.F.1(b)(iv).

13.3C.15.10 Training for Repair and Damage Control Teams

Technical Information in the Emergency Plan: [O.4.e] {Appendix E, Section IV.F.1(b)(v)} Section O.4.e provides position specific emergency response training for damage control/repair/corrective action teams which includes damage control organization, communications systems, and planning and coordination of damage control tasks.

Technical Evaluation: [O.4.e] {Appendix E, Section IV.F.1(b)(v)} The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately describes the initial training and retraining for repair and damage control teams. This is acceptable because it conforms to the guidance described in Evaluation Criterion O.4.e of NUREG-0654/FEMA-REP-1, Revision 1, and meets the requirements of 10 CFR Part 50, Appendix E, Section IV.F.1(b)(v).

13.3C.15.11 Training for Local Emergency Management Personnel

Technical Information in the Emergency Plan: [O.4.g] {Appendix E, Section IV.F.1}

Section O.1.a of the emergency plan states that training is provided for offsite personnel who may be called upon to provide assistance in the event of an emergency. Training for offsite personnel may include the basic scope of the Emergency Plan, emergency classifications, notification methods, basic radiation protection, site access procedures and other areas necessary to support a response.

Technical Evaluation: [O.4.g] {Appendix E, Section IV.F.1} The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately describes the initial training for offsite local support services/emergency service personnel who may be called upon to assist in the event of an emergency. The description of the training that will be provided is acceptable because it conforms to the guidance described in Evaluation Criterion O.4.g of NUREG-0654/FEMA-REP-1, Revision 1, and meets the requirements of 10 CFR Part 50, Appendix E, Section IV.F.1.

13.3C.15.12 Training for Medical Support Personnel

Technical Information in the Emergency Plan: [O.4.h] {Appendix E, Section IV.F.1(b)(vii)}

Section O.4.h states that specific emergency response training for medical support personnel is consistent with Section O.1.a. Section O.1.a of the emergency plan states that training may include the basic scope of the Emergency Plan, emergency classifications, notification methods, basic radiation protection, site access procedures and other areas necessary to support a response.

Technical Evaluation: [O.4.h] {Appendix E, Section IV.F.1(b)(vii)} The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately describes the initial training for medical support personnel. The description of the training for medical support personnel is acceptable because it conforms to the guidance described in Evaluation Criterion O.4.h of NUREG-0654/FEMA-REP-1, Revision 1, and meets the requirements of 10 CFR Part 50, Appendix E, Section IV.F.1(b)(vii).

13.3C.15.13 Training for Headquarters Support Personnel

Technical Information in the Emergency Plan: [O.4.i] {Appendix E, Section IV.F.1(b)(viii)}

Section O.4.i states that position specific emergency response training for corporate office support personnel which includes emergency condition assessment and classification, notification systems and procedures, and organizational interfaces.

Technical Evaluation: [O.4.i] {Appendix E, Section IV.F.1(b)(viii)} The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately describes the initial training for corporate support personnel who disseminate emergency public information. This is acceptable because it conforms to the guidance described in Evaluation Criterion O.4.i of NUREG-0654/FEMA-REP-1, Revision 1, and meets the requirements of 10 CFR Part 50, Appendix E, Section IV.F.1(b)(viii).

13.3C.15.14 Training Related to the Transmitting Emergency Information

Technical Information in the Emergency Plan: [O.4.j] Section O.4.j states that position specific emergency response training for emergency communicators is provided and includes notifications and reports to offsite authorities and communications systems as appropriate for individual position assignments.

Technical Evaluation: [O.4.j] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately addresses the specialized initial training described for emergency communicators, which includes notification to offsite authorities and communication systems. The description of training related to transmitting emergency information is acceptable because it conforms to the guidance in Evaluation Criterion O.4.j of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.15.15 Training for Security Personnel

Technical Information in the Emergency Plan: {Appendix E, Section IV.F.1(b)(ix)} Section O.4.d provides position specific emergency response training for police, security and fire fighting personnel which includes notification of site personnel, facility activation, personnel accountability and evacuation, and access control. Police and Security also receive training on the Security Plan.

Technical Evaluation: {Appendix E, Section IV.F.1(b)(ix)} The staff finds that the CPNPP, Units 3 and 4, Emergency Plan provides position specific training for different types of law enforcement and security personnel, and therefore adequately addresses the training described for security personnel. This training program is acceptable because it meets the requirements of 10 CFR Part 50, Appendix E, Section IV.F.1(b)(ix).

13.3C.15.16 Retraining of Emergency Response Personnel

Technical Information in the Emergency Plan: [O.5] {Appendix E, Section IV.F.1} Section O.5, "Retraining," of the CPNPP, Units 3 and 4, Emergency Plan states that the applicant conducts or supports annual retraining for emergency response personnel as discussed in Section O.4 "Emergency Response Training and Qualification." Failure to successfully complete required training in a timely manner results in suspension from the ERO pending completion of the required training.

Technical Evaluation: [O.5] {Appendix E, Section IV.F.1} The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately describes the provisions for retraining of personnel with emergency response responsibilities, and suspension for failure to successfully complete the training in a timely manner. The retraining plan is acceptable because it conforms to the guidance in Evaluation Criterion O.5 of NUREG-0654/FEMA-REP-1, Revision 1, and meets the requirements of 10 CFR Part 50, Appendix E, Section IV.F.1.

13.3C.15.17 Conclusion

The staff has reviewed the CPNPP, Units 3 and 4, Emergency Plan and the applicant's responses to **RAI 3327, Questions 13.03-13.O-1 and 13.03-13.O-2** in regards to Planning Standard O, Radiological Emergency Training of NUREG-0654/FEMA-REP-1 and Applicable Regulation. The staff concludes that the information provided in the CPNPP, Units 3 and 4, Emergency Plan together with the applicant's RAI response which are being tracked as **Confirmatory Items 13.03-41 and 13.03-69**, regarding radiological emergency training is acceptable and meets the requirements of 10 CFR 50.47(b)(15) because it complies with the guidance in Planning Standard O of NUREG-0654/FEMA-REP-1 and the applicable portions of Appendix E to 10 CFR Part 50.

13.3C.16 Responsibility for the Planning Effort

13.3C.16.1 Regulatory Basis

In determining whether the proposed emergency plan met the applicable regulatory requirements in 10 CFR 50.47(b)(16), the staff evaluated it against the detailed evaluation criteria in NUREG-0654/FEMA-REP-1, Revision 1. The staff also evaluated the proposed emergency plan against applicable regulatory requirements related to the area of “Responsibility for the Planning Effort,” in Appendix E to 10 CFR Part 50.

13.3C.16.2 Training for Personnel Responsible for Planning Effort

Technical Information in the Emergency Plan: [P.1] Section P, “Responsibility for the Planning Effort,” of the CPNPP, Units 3 and 4, Emergency Plan states the applicant develops and implements a process to provide training for the Emergency Planning Manager and support staff to facilitate effective implementation of the emergency planning effort, consistent with applicable regulatory requirements and guidance, license conditions, other commitments, and accepted good practices.

Technical Evaluation: [P.1] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately describes the training that will be provided for individuals responsible for the emergency planning effort. This training plan is acceptable because it is designed to be consistent with applicable regulatory requirements and guidance, license conditions, other commitments, and accepted good practices, and conforms to the guidance in Evaluation Criterion P.1 of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.16.3 Person Responsible for Emergency Planning

Technical Information in the Emergency Plan: [P.2] Section P, “Responsibility for the Planning Effort,” of the CPNPP, Units 3 and 4, Emergency Plan states the applicant’s Plant Manager holds the overall authority and responsibility for ensuring that an adequate level of emergency preparedness is maintained. The responsibility for the planning effort is delegated to the Emergency Planning Manager. The Emergency Planning Manager approves the EPPs and is responsible for maintenance and coordination of the emergency preparedness program and providing the training program for the ERO.

Technical Evaluation: [P.2] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately identifies the individual, by title, with the overall authority and responsibility for radiological emergency response planning. This is acceptable because it conforms to the guidance in Evaluation Criterion P.2 of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.16.4 Designation of an Emergency Response Coordinator

Technical Information in the Emergency Plan: [P.3] Section P, “Responsibility for the Planning Effort,” of the CPNPP, Units 3 and 4, Emergency Plan states the applicant’s Emergency Planning Manager is responsible for developing and updating the Plan and coordinating this Plan with other response organizations. The Emergency Planning Manager approves the EPPs and is responsible for maintenance and coordination of the emergency preparedness program and providing the training program for the emergency response organization ERO.

Technical Evaluation: [P.3] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately designates an Emergency Planning Coordinator with responsibility for the development and updating of emergency plans and coordination of these plans with other

response organizations. This is acceptable because it conforms to the guidance in Evaluation Criterion of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.16.5 Update and Maintenance of the Emergency Plan

Technical Information in the Emergency Plan: [P.4] {Appendix E, Section IV.G} Section P states that the Emergency Plan shall be reviewed, updated as needed, and certified by the Plant Manager to be current on an annual basis. The review includes consideration of items identified during drills and exercises that could affect the Plan. Section P also states that on an annual basis, the Emergency Planning Manager reviews the procedures for emergency classification with the State of Texas, Somervell and Hood County.

Technical Evaluation: [P.4] {Appendix E, Section IV.G} The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately describes provisions for updating the emergency plan and agreements as needed, and reviewing and certifying it to be current on an annual basis. In addition, the updating provisions described, take into account changes identified by drills and exercises. This is acceptable because it conforms to the guidance in Evaluation Criterion P.4 of NUREG-0654/FEMA-REP-1, Revision 1, and meets the applicable requirements in Appendix E to 10 CFR Part 50, Section IV.G.

13.3C.16.6 Distribution of Emergency Plans

Technical Information in the Emergency Plan: [P.5] Section P, "Responsibility for the Planning Effort," states that upon completion of the annual review, the Emergency Planning Manager or designee incorporates any necessary changes. These documents are controlled and revised in accordance with site administrative policies. Section P states that following approval of the updated Plan by the Plant Manager, the document control organization distributes the updated plan to the designated organizations/individuals with emergency response/planning responsibilities.

Technical Evaluation: [P.5] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately describes that the emergency response plans and approved changes to the plan will be forwarded to all organizations and appropriate individuals with responsibility for implementation of the plan. This is acceptable because it conforms to the guidance in Evaluation Criterion P.5 of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.16.7 Supporting Plans

Technical Information in the Emergency Plan: [P.6] Section P, "Responsibility for the Planning Effort," of the CPNPP, Units 3 and 4, Emergency Plan provides a list of supporting plans from the State, surrounding counties, and the applicant.

Technical Evaluation: [P.6] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately lists supporting plans from the State, surrounding Somervell and Hood counties, and the applicant. This is acceptable because it conforms to the guidance in Evaluation Criterion P.6 of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.16.8 Emergency Plan Implementing Procedures

Technical Information in the Emergency Plan: [P.7] Appendix 5, "Emergency Plan Procedures," of the CPNPP, Units 3 and 4, Emergency Plan provides a listing of EPPs cross-

referenced to sections in the Emergency Plan. Appendix 5 identifies additional plant procedures required to support ongoing maintenance of emergency preparedness.

Technical Evaluation: [P.7] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately contains a listing of the procedures, by titles that are required to implement the plan. This is acceptable because it conforms to the guidance in Evaluation Criterion P.7 of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.16.9 Table of Contents and Cross-Reference Table

Technical Information in the Emergency Plan: [P.8] Appendix 5 provides a topical listing of EPPs that support this Emergency Plan and Appendix 8 provides a cross-reference between sections in the Emergency Plan and the regulatory documents including 10 CFR 50.47, 10 CFR 50 App E, 10 CFR 50.72, 10 CFR 50.33, 10 CFR 50.79. Appendix 8 also provides a cross reference between NUREG-0654 and the applicant, State, and local Emergency Plans.

Technical Evaluation: [P.8] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately provides for a Table of Contents and a Cross Reference Table to facilitate the use of the CPNPP, Units 3 and 4, Emergency Plan. This is acceptable because it conforms to the guidance in Evaluation Criterion P.8 of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.16.10 Annual Independent Review of the Emergency Plan

Technical Information in the Emergency Plan: [P.9] Section P.4, "Plan Reviews and Updates," of the CPNPP, Units 3 and 4, Emergency Plan states that the Emergency Plan is reviewed and updated as needed, and will be certified by the Plant Manager on an annual basis. The review will include consideration of drills and exercises that could affect the Emergency Plan. Section P.4 also states that procedures for emergency classification with the State of Texas and Somervell and Hood County are reviewed annually. LOAs are also reviewed annually.

Technical Evaluation: [P.9] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately describes arrangements for and the conduct of independent reviews of the emergency preparedness program at least every 12 months. These arrangements are acceptable because they conform to the guidance in Evaluation Criterion P.9 of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.16.11 Quarterly Update of Emergency Telephone Numbers

Technical Information in the Emergency Plan: [P.10] Section P, "Responsibility for the Planning Effort," of the CPNPP, Units 3 and 4, Emergency Plan states on a quarterly basis the Emergency Planning Manager or his designee is responsible for performing a review of the telephone numbers used for emergency response and for ensuring required revisions are completed.

Technical Evaluation: [P.10] The staff finds that the CPNPP, Units 3 and 4, Emergency Plan adequately provides for updating telephone numbers in emergency procedures at least quarterly. This is acceptable because it conforms to the guidance provided in Evaluation Criterion P.10 of NUREG-0654/FEMA-REP-1, Revision 1.

13.3C.16.12 Conclusion

The staff concludes that the information provided in the CPNPP, Units 3 and 4, Emergency Plan regarding the responsibility for emergency planning is acceptable and meets the requirements of 10 CFR 50.47(b)(16) because it complies with the guidance in Planning Standard P of NUREG-0654/FEMA-REP-1, Revision 1, and the applicable portions of Appendix E to 10 CFR Part 50 as described above.

13.3C.17 Security-Based Event Considerations

13.3C.17.1 Regulatory Basis

RG 1.206 specifies that applicants for a combined license address the Commission orders issued February 25, 2002, as well as any subsequent NRC guidance, to determine what security-related aspects of emergency planning and preparedness are to be addressed in the emergency plan.

The Commission Orders issued February 25, 2002, and security-related enhancements identified in NRC Bulletin 2005-02, "Emergency Preparedness and Response Actions for Security-Based Events," identify the following areas to be addressed in the COLA, Emergency plan, or emergency plan implementing procedures:

1. Security-based Emergency Classification Levels and Emergency Action Levels - The emergency plan contains EALs to ensure that a site-specific, security event results in an emergency classification declaration of at least a notification of unusual event. The classification scheme should also reflect the strategy for escalation to a higher-level event classification.
2. NRC Notifications - Notification procedures allow for NRC notification of safeguards events immediately after notification of local law enforcement agencies, or within about 15 minutes of the recognition of a security-based threat.
3. Onsite Protective Measures - Consideration has been given to a range of protective measures for site workers, as appropriate, during a security-based event (e.g., evacuation of personnel from target buildings, site evacuation by opening security gates, dispersal of licensed operators, sheltering of personnel in structures away from potential site targets, and arrangements for accounting for personnel after attack).
4. ERO Augmentation - Emergency Response Facilities and Alternative Facilities have been identified to support the rapid response from ERO members to mitigate site damage from a security-based event once the site is secured. The alternative facilities could likely be located outside of the protected area and should include the following characteristics: accessible even if the site is under threat or actual attack; communication links with the EOF, CR and plant security; the capability to perform offsite notifications; and the capability for engineering assessment activities, including damage control team planning and preparation. The alternative facility should also be equipped with general plant drawings and procedures, telephones, and computer links to the site.

5. Potential Vulnerabilities from Nearby Hazardous Facilities, Dams, and other Sites - The potential effect has been determined on the plant, onsite staffing and augmentation, and onsite evacuation strategies from damage to nearby hazardous facilities, dams, and other nearby sites, in consideration of a security-based event.
6. Drills and Exercises - Emergency Preparedness (EP) drill and exercise programs maintain the key skills necessary for mitigating security-based events. The ERO demonstrates security-based EP program activities under the schedule as committed to in their emergency plans.
7. Emergency Preparedness and Response to a Security-based Event - Onsite staffing, facilities, and procedures are adequate to accomplish actions necessary to respond to a security-based event, and the emergency plan and/or procedures reflect the site specific needs.

13.3C.17.2 Security-Based Emergency Classification and Emergency Action Levels

Technical Information in the Emergency Plan: (NUREG-0800) Emergency Classifications for Security or Hostile Action-based events are addressed in Section 13.3C.4 of this FSER.

Technical Evaluation: (NUREG-0800) The staff's evaluation is also included in Section 13.3C.4 of this FSER.

13.3C.17.3NRC Notification

Technical Information in the Emergency Plan: (NUREG-0800) Notification requirements are addressed in Section 13.3C.5.8, "Notification to the NRC."

Technical Evaluation: (NUREG-0800) The staff's evaluation is also included in Section 13.3C.5.8 of this FSER.

13.3C.17.4 Onsite Protective Measures

Technical Information in the Emergency Plan: (NUREG-0800) Section J.5, "Personnel Accountability," of the CPNPP Emergency Plan addresses protective measures in the event of a hostile attack against the site. Section J.5, states that in the event of a hostile attack against the site, conditions may dictate initiation of protective measures other than personnel assembly, accountability, and evacuation. The Emergency Coordinator (EC) will make decisions regarding appropriate protective measures based on evaluation of site conditions, including input from the Security Organization. If, based on the judgment of the EC, personnel assembly, accountability, and evacuation may result in undue hazards to site personnel; the EC may direct other protective measures, including:

- evacuation of personnel from areas and buildings perceived as high-value targets
- site evacuation by opening, while continuing to defend, security gates
- dispersal of key personnel

- onsite sheltering
- staging of emergency response organization personnel in alternate locations pending restoration of safe conditions
- implementation of accountability measures following restoration of safe conditions.

In an RAI 4579, Question 13.3-41 (tracked as **Open Item 13.03-11**), the staff requested that the applicant describe alternative facilities used to support emergency response during hostile-action events in accordance with Bulletin (BL) 2005-02. In its response, the applicant stated that the ERO may be deployed to an alternate near-site facility due to a security-based event and that the facility would meet the requirements of BL 2005-02. The applicant stated the activation process of these alternative facilities is detailed in EPPs addressing “Activation and Operation of the Technical Support Center (TSC),” “Activation and Operation of the Emergency Operations Facility (EOF),” and “Activation and Operation of the Operations Support Center.” In a follow-up RAI 4579, Question 13.3-42 (tracked as **Open Item 13.03-12**), the staff requested that the applicant describe specific provisions to protect onsite emergency workers in emergencies resulting from hostile-action events. In its response, the applicant stated it will revise Section J.5 of the Emergency Plan to reflect those provisions included in BL 2005-02 and that details regarding these protective measures are described in an EPP addressing “Security Events.”

The emergency class definitions in Section D.1, “Classification System,” address security threats, and events and hostile actions for each emergency class. However, the information provided did not address certain aspects of the EAL scheme. In **RAI 3295, Question 13.03-01.D-1**, the staff requested that the applicant address its plans to finalize the required EAL scheme. The applicant’s response and the NRC staff’s evaluation of this RAI are addressed in Section 13.3C.4 of this SE.

Technical Evaluation: (NUREG-0800) As described above, the staff finds that the CPNPP, Units 3 and 4, Emergency Plan gives consideration to a range of protective measures for site workers during a security-based event. The applicant’s response to **RAI 3295, Question 13.03-01.D-1** and the staff’s evaluation of this RAI is contained in Section 13.3C.4 of this SER.

The staff has reviewed the CPNPP, Units 3 and 4, Emergency Plan and the applicant’s responses to the RAIs are being tracked as **Open Items 13.03-11 and 13.03-12** in regards to onsite protective measures and RG 1.206. In response to the RAI that the staff tracked as **Open Item 13.03-11**, the applicant will revise Section H, “Emergency Facilities and Equipment,” to state that a security-based event may warrant deployment of the ERO to an alternate facility, as well as references to EPPs that describe the activation of this alternative facility. This is acceptable because it conforms to the guidance described in NUREG-0800. **Confirmatory Item 13.03-70** has been created to track this revision. In response to the RAI that the staff tracked as **Open Item 13.03-12**, the applicant will revise Section J.5, “Personnel Accountability,” to describe protective measures for emergency responders and personnel as well a reference to the “Security Events” EPP. This is acceptable because it conforms to the guidance described in NUREG-0800. **Confirmatory Item 13.03-71** has been created to track this revision.

13.3C.17.5 Emergency Response Organization Augmentation

Technical Information in the Emergency Plan: (NUREG-0800)

ERO augmentation is addressed in Sections II.E.2, "Notification and Mobilization of Licensee Response Organizations," II.H.4, "Activation and Staff of Emergency Response Facilities," and II.N.2, "Drills," in the CPNPP, Units 3 and 4, Emergency Plan. In RAs that the staff tracked as **Open Items 13.03-11 and 13.03-12**, the staff requested that the applicant describe an alternative facility to support a rapid response to a hostile action and specific provisions to protect onsite emergency responders and personnel in emergencies resulting from hostile actions. The applicant's response to these Open Items is discussed in Section 13.3C.17.4 of this SE.

Technical Evaluation: (NUREG-0800) The staff has reviewed the CPNPP, Units 3 and 4, Emergency Plan and the applicant's responses to the RAs that the staff tracked as **Open Items 13.03-11 and 13.03-12**, in regards to onsite protective measures and RG 1.206. Evaluation of the applicant's response to these Open Items is addressed in Section 13.3C.17.4 of this SE.

13.3C.17.6 Potential Vulnerabilities from Nearby Hazardous Facilities, Dams, and Other Sites

Technical Information: (NUREG-0800) The assessment of other nearby hazards that could potentially affect the safety of the CPNPP facility was addressed in FSAR Section 13.2.1.1.3, "Hazards Awareness Training." FSAR Section 13.2.1.1.3, states in part that there are no significant vulnerabilities from nearby hazardous facilities. However, the applicant continued to explain that workers and operators will receive initial and annual refresher training for protection from chemical hazards and confined space entry.

Technical Evaluation: (NUREG-0800) The staff finds the CPNPP, Units 3 and 4, Emergency Plan adequately describes the assessment of other nearby hazards that could potentially affect the safety of the CPNPP facility, and the initial and annual refresher training that workers and operators will receive. This plan to assess other nearby hazards is acceptable because it meets the guidance in RG 1.206.

13.3C.17.7 Security-Based Drills and Exercises

Technical Information in the Emergency Plan: (NUREG-0800) The CPNPP, Units 3 and 4, Emergency Plan addresses security-based drills in Section N, "Exercises and Drills," of the submitted Emergency Plan.

Technical Evaluation: (NUREG-0800) The staff finds that the CPNPP, Units 3 and 4, Emergency Plan describes how the EP drill and exercise programs maintain the key skills necessary for mitigating security-based events. The ERO demonstrates security-based EP program activities under the schedule as committed within their emergency plan. This is acceptable because it meets the guidance in RG 1.206.

13.3C.17.8 Emergency Preparedness and Response to a Security-Based Event

Technical Information in the Emergency Plan: (NUREG-0800) The applicant did not address procedures to accomplish actions necessary in response to a security event that reflect the specific site needs. **RAI 3327, Question 13.03-14.Q-1**, requested that the applicant provide the title of the procedure that will address actions in response to a security event, based on the February 25, 2002, ICM order and BL 2005-02, and any specific site needs to the list of emergency plan implementing procedures in Appendix 5, "Emergency Plan Procedures," to the

CPNPP Emergency Plan. In summary, the applicant's response stated that Appendix 5 of the Emergency Plan will be revised to address onsite staffing, facilities, and procedures in order to accomplish actions necessary to respond to a security-based event, and the emergency plan and procedures will reflect the site-specific needs. The applicant also provided the specific Procedure Title that will be used to accomplish emergency actions necessary in response to a security event.

Technical Evaluation: (NUREG-0800) As described above, the staff finds that the CPNPP, Units 3 and 4, Emergency Plan describes the onsite staffing, facilities, and procedures to accomplish actions necessary to respond to a security-based event. In its response to **RAI 3327, Question 13.03-14.Q-1**, the applicant explained that the CPNPP, Units 3 and 4, Emergency Plan will be revised to address response actions needed for a security event. This response is acceptable because it conforms to the guidance established in NUREG-0800. **Confirmatory Item 13.03-42** was created to track this revision.

13.3C.17.9 Conclusion

The staff concludes that the information provided in the CPNPP, Units 3 and 4, Emergency Plan, together with the applicant's responses to RAI 4579, Question 13.3-41 (previously tracked as **Open Item 13.03-11**, and currently tracked as **Confirmatory Item 13.03-70**), **RAI 3327, Question 13.03-14.Q-1** (tracked as **Confirmatory Item 13.03-42**), and RAI 4579, Question 13.3-42 (previously tracked as **Open Item 13.03-12**, currently tracked as **Confirmatory Item 13.03-71**), is consistent with those portions of Section 13.3 of NUREG-0800 related to hostile action-based considerations. Therefore, the information is acceptable and meets the requirements of 10 CFR 52.79(a)(41) as it relates to preparedness for responding to hostile actions.

13.3C.18 Evacuation Time Estimate (ETE) Analysis

The CPNPP, Units 3 and 4, Emergency Response Plan (CPNPP, Units 3 and 4, Emergency Plan) includes an analysis of the time required to evacuate the plume exposure pathway EPZ. The report titled "Comanche Peak Nuclear Power Plant Development of Evacuation Time Estimates," Revision 3 April 2010, (ETE Report) was provided as a separate document in the COLA as Appendix 4, "Evacuation Time Estimate." Sandia National Laboratories performed a technical review of the ETE Report. The report analyses and responses to RAIs provide the basis for the staff's conclusions as to the adequacy of its content and conformity with Appendix 4 to NUREG-0654/FEMA REP-1, Revision 1.

13.3C.18.1 Regulatory Basis for the ETE Analysis

The staff considered the following regulatory requirements and guidance in the review of the evacuation time estimate analysis:

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

The staff evaluated the ETE Report against Appendix 4, "Evacuation Time Estimates within the Plume Exposure Pathway Emergency Planning Zone," to NUREG-

0654/FEMA-REP-1, Revision 1. Appendix 4 contains detailed guidance that the staff used in determining whether the ETE analysis meets the applicable regulatory requirements in Appendix E to 10 CFR 50.

13.3C.18.2 Introductory Materials Related to the ETE Report

Technical Information in the ETE Report: [Section I of Appendix 4] Section 1.2, "The Comanche Peak Nuclear Power Plant Site Location," includes a description of CPNPP which is located on a peninsula in the Squaw Creek Reservoir approximately 50 miles southwest of Fort Worth, Texas. The EPZ consists of parts of Hood County and Somervell County. Within the ETE report, Figure 1-1, "CPNPP Site Location," identifies the plant location, EPZ boundary and topographical features including surrounding lakes, rivers, major roadways and county boundaries.

Section 2, "Study Estimates and Assumptions," of the ETE report provides assumptions for data estimates, methodology, the planning basis, school evacuations, mobilization of the general population, percent of households with commuters, and staffing of traffic control. Section 2.1, "Data Estimates," describes how population estimates were developed and states that roadway capacities were based on field surveys and the application of the Highway Capacity Manual 2000 guidance (TRB, 2000). Section 2.2, "Study Methodological Assumptions," discusses the estimates for voluntary and shadow evacuations. Section 2.3, "Study Assumptions," Item 7b states that buses for medical facilities are provided through private contracting. Automobile occupancy factors are developed in Section 3, "Demand Estimation," and the method for determining roadway capacities is developed in Section 4, "Estimation of Highway Capacity." Section 4, "Estimation of Highway Capacity," describes the method for estimating highway capacity and Appendix D, "Detailed Description of Study Procedure," identifies the steps to perform the evacuation time estimate calculations. Section 5, "Estimation of Trip Generation Time," describes the process of combining distribution functions to establish the time-dependent traffic loading. Together these sections describe how the data obtained in other sections of the ETE report are integrated into the calculation to produce the ETE. Roadway types and capacities are described in Section 4, "Estimation of Highway Capacity," and include two-lane roads and multi-lane highways. Section 1.3, "Preliminary Activities - Field Surveys of the Highway Network," indicates that personnel drove the roadway network within the EPZ to obtain roadway characteristics and describes the extent of the field survey conducted for the EPZ. Section 4 references two technical publications that provide additional information on development of the algorithms used in the modeling.

Technical Evaluation: [Section I of Appendix 4] The staff finds that the ETE Report includes a map showing the proposed site and plume exposure pathway EPZ, as well as transportation networks, topographical features, and political boundaries. The boundaries of the EPZ, in addition to the evacuation subareas within the EPZ, are based on factors such as current and projected demography, topography, land characteristics, access routes, and jurisdictional boundaries. The staff also finds that the ETE Report describes the method of analyzing the evacuation times. A general description of the evacuation model was provided including the assumptions used in the evacuation time estimate analysis. This is acceptable because it conforms to the guidance in Section I of Appendix 4 to NUREG-0654/FEMA-REP-1.

13. 3C.18.3 Demand Estimation

Technical Information in the ETE Report: [Section II of Appendix 4] Population estimates in the ETE were based on data from the 2000 U.S. Census and projected to the year 2007,

using census growth rate projections. For the new plant construction scenario, the permanent resident and shadow populations were projected to the year 2015. In Table 3-1, "EPZ Permanent Resident Population by Zone," the 2007 Population is 33,435. The 2007 population in Table 3-1 differs from the CPNPP, Units 3 and 4, COLA Environmental Report (ER) Table 2.5-1, "The Projected Permanent Population for Each Sector 0-16 Km (10 mi) for Years 2007, 2016, 2026, 2036, 2046, and 2056," and the FSAR Table 2.1-202, "Projected Permanent Population for Each Sector 0-16 Km (10 mi) for Years 2007, 2016, 2026, 2036, 2046, and 2056," which provide a 2007 population of 32,451. Additional information was requested in **RAI 3183, Question 13.03-17**, to clarify the difference in population values. In response, the applicant described the differences between the population values in the FSAR and the ETE. For the ETE, portions of the EPZ extend beyond a 10 mile radius; whereas, in developing population values for the FSAR, a 10 mile radius is used with the CPNPP site as the center point. Section 2.1, "Data Estimates," indicates that population estimates are projected to year 2007 using regression analysis on County-specific projections. Additional information was requested in **RAI 3183, Question 13.03-19.A**, regarding the regression method used. In its response, the applicant described the method used in the development of population projections. Population was projected using the following equation (Summed Block Data)*(Area Weight Ratio)*(mX+b)/[Census 2000 County Data]). The applicant provided a summary of this population estimation methodology to Section 3.1 of the ETE report.

The growth rate between the years 2000 and 2007 is identified as 11.8 percent in Table 3-1, "EPZ Permanent Resident Population by Zone," while Table 6-4, "Vehicle Estimates By Scenario," indicates that the growth rate between the years 2007 and 2015 for residents is 26 percent. Additional information was requested in **RAI 3183, Question 13.03-19.B**, regarding the factors that contribute to the permanent resident growth rate of 26 percent between the years 2007 and 2015. In its response, the applicant explained that zone specific growth rates were multiplied by 15/7 in order to compute a growth factor to 2015 from the 2007 population estimate. In its response to an **RAI 4224, Question 13.3-30**, which the staff tracked as **Open Item 13.03-01**, the applicant explained that the growth factor of 15/7 provided in the response to **RAI 3183, Question 13.03-019.B** was incorrect and should be 8/7. The applicant explained that the composite growth rate for the years 2000 through 2007 timeframe should have been multiplied by 8/7 and then applied to the year 2007 population as a baseline. The applicant provided all of the sections of the ETE that were updated as a result of this change.

Section 8.1, "Transit Dependent People - Demand Estimate," identifies 259 people registered with local authorities as transit dependent or as having a special need. Table 8-1, "Transit Dependent Population Estimates," identifies 593 residents requiring transportation. Additional information was requested in **RAI 3327, Questions 13.03-19.C.1 and 13.03-19.C.2**, regarding the number of transit dependent residents who have special needs or require specialized transportation. In its response, the applicant confirmed that the 259 people registered with local authorities were not included in the data. The applicant has obtained current information from the counties identifying 84 special needs persons requiring transportation and has provided the text and updated ETE calculations for this population group. The applicant included the described information in Revision 3 of the ETE Report.

Transient population estimates are developed in Section 3, "Demand Estimation," with additional information provided in Appendix E, "Special Facility Data." Table 3-3, "Summary of Transients by Zone," provides a total of 13,541 transients and 5,362 vehicles resulting in an automobile occupancy factor of 2.5 persons per vehicle. The CPNPP Environmental Report Table 2.5-3, "The Current Residential and Transient Population for Each Sector 0-16 km (10 mi)," lists a combined current resident and transient EPZ population of 71,261 persons. The

Environmental Report, Table 2.5-1, "The Projected Permanent Population for Each Sector 0-16 km (10 mi) for years 2007, 2016, 2026, 2036, 2046, and 2056," identifies 32,451 permanent residents within the 10 mile EPZ. Additional information was requested in **RAI 3183, Question 13.03-20.A**, to explain the difference in transient population values. In its response, the applicant identified that the ER considers people attending the Fourth of July Celebration as transients. Table 2.5-9 in the ER identifies a total attendance of 50,000 visitors over a two-day period. Therefore, the applicant stated that the difference in transient populations between the ER and ETE resulted from a peak one-day estimate of 25,000 transients being considered in the ER for the Fourth of July Celebration.

Section 8.4, "Summer Camps and Retreats - Transit Demand," lists five camps with two of these having populations of 700 children. Additional information was requested in **RAI 3183, Question 13.03-20.B**, regarding the number of buses required to support evacuation of the camp populations. In its response, the applicant provided the number of buses required to support evacuation of children at summer camps and included this information in Revision 3 to the ETE Report.

Appendix I, "Evacuation Sensitivity Studies," identified the Granbury Fourth of July Celebration as a special event with an attendance of up to 50,000 people, but Table 6-2, "Evacuation Scenario Definitions," identified a much smaller event at the amphitheater for the Scenario 11 special event analysis. Additional information was requested in **RAI 3183, Question 13.03-20.C**, regarding whether the Granbury Fourth of July Celebration should be used to support analysis of peak tourist volumes. In its response, the applicant has agreed that the Fourth of July Celebration will be added as a special events scenario. In its response to **RAI 4224, Question 13.3-31**, which the staff tracked as **Open Item 13.03-02**, the applicant explained that the Fourth of July Celebration has been added to the ETE Report as a special event and is identified as Scenario 13. The applicant added Section 3.3.3, "Fourth of July Celebration," which describes the assumptions and vehicle estimates to support the scenario. The applicant provided all updated sections of the ETE affected by this change including updated Tables 7-1A through 7-1D, "Time to Clear the Indicated Area of [X] Percent of the Affected Population."

Table 8-4, "Special Facility Transit Demand," identifies each special facility by name and includes the specialized resources needed to support an evacuation. Table 8-4 uses the current facility population rather than peak population estimates for the determination of resources needed to support an evacuation. Additional information was requested in **RAI 3183, Question 13.03-21.A**, regarding the impact of peak populations. In its response, the applicant noted that Section II.C of Appendix 4 of NUREG-0654/FEMA-REP-1 requires an estimate of the population within special facilities on an institution-by-institution basis. The applicant states that this requirement has been met in Table 8-4 of the ETE report which uses the facility's current population. The applicant also makes reference to Table 1, which was described by the applicant as being included as an Attachment to its 13.03-21.A response for peak populations and resources need to evacuate special facilities. In its response to **RAI 4224, Question 13.3-32**, which the staff was tracking as **Open Item 13.03-03**, the applicant provided Table 1, "Special Facility Transit Demand at Capacity," which shows the transportation requirements for special facilities if capacity population is considered rather than the current census. In its response to **RAI 4224, Question 13.3-33**, which the staff was tracking as **Open Item 13.03-04**, the applicant explained that, as required by NUREG-0654, peak capacities were considered, but found to be inappropriate. The applicant explained that each of the special facilities was contacted, and the census data received did not suggest that peak capacity was appropriate.

Section 2.3, "Study Assumptions," states that buses for medical facilities are provided through

private contracting. Section 8.3, "Special Facility Demand," states that some facilities can share buses. Additional information was requested in **RAI 3183, Questions 13.03-21.B.1 and 13.03-21.B.2**, to support the assumption that special facilities can share buses. Regarding **RAI 3183, Question 13.03-21.B.1**, the applicant acknowledges in the response that special facilities have separate contracts for transportation services. The applicant has identified facility owned vehicles and identified additional resources needed to support evacuation of these facilities. The applicant provided revised text and provided a revised Table 8.4, "Special Facility Transit Demand," which updates the required resources and revised the ETE Report to reflect the updates to Table 8.4. To support the response to **RAI 3183, Question 13.03-21.B.2**, the applicant identifies the total resources needed to evacuate special facilities, considering that these resources are not shared. The response describes that use of facility contracted resources reduces the ETE for this population group. The applicant concludes its response by stating that any reference made to these shared resources will be removed in an update to the ETE Report.

Section 8.5, "Evacuation Time Estimates for Transit Dependent People Activity: Mobilize Drivers," identifies 60 minutes to contact and mobilize school bus drivers and 90 minutes to contact and mobilize buses serving the transit dependent population. Additional information was requested in **RAI 3183, Question 13.03-21.C**, to explain why it takes 30 minutes longer to mobilize transit dependent buses. In its response, the applicant described the process for mobilizing the schools and buses serving the transit dependent population and identified the locations in the ETE Report where this information is provided. The ETE for the Somervell County Jail is developed separately, and it is estimated that evacuation of the jail will require two school buses to support the evacuation.

Sub-areas, defined as Zones, are identified in Figure 3-1, "Comanche Peak Nuclear Power Plant EPZ," and described in Appendix L, "Zone Boundaries," but additional information was requested in **RAI 3183, Questions 13.03-22.A, B, and C**, to determine whether the Zones encompass the entire area of the EPZ. In its response to **RAI 3183, Question 13.03-22.A**, the applicant describes the resources used to determine the limits of the EPZ boundary and clarifies that the zones do encompass the entire area of the EPZ. In its response to **RAI 3183, Question 13.03-22.B**, the applicant states that the EPZ boundaries used in the ETE Report are consistent with the EPZ boundaries approved by the NRC. The applicant references the correspondence with the NRC that confirms the EPZ boundary. In its response to **RAI 3183, Question 13.03-22.C**, the applicant explains that the EPZ is in fact bounded by the 10-mile EPZ limit as agreed to with State and local officials and approved by the NRC.

Technical Evaluation: [Section II of Appendix 4] As described above, the staff finds that the CPNPP, Units 3 and 4, ETE Report and responses to the RAIs listed above, provide an estimate of the number of people who may need to evacuate. Three population segments are considered including permanent residents, transients, and persons in special facilities. The permanent population is adjusted for growth, and the population data is translated into two groups, including those with automobiles and those without automobiles. The number of vehicles used by permanent residents is estimated using an appropriate automobile occupancy factor. Evacuation time estimates for simultaneous evacuation of the entire plume exposure pathway EPZ were provided.

Estimates of transient populations are developed using local data including peak tourist volumes and employment data. Estimates for special facility populations are provided and schools are included in this segment.

The zones for which evacuation time estimates were determined encompass the entire area within the plume exposure EPZ. The maps are generally adequate for the purpose, and the level of detail is approximately the same as United States Geological Survey quadrant maps. The assumptions on evacuation are based on simultaneous evacuation of inner and outer sectors.

The staff finds that the additional information provided by the applicant in its response to **RAI 3183, Questions: 13.03-17, 13.03-20.A, 13.03-21.C, and 13.03-22.A, B, and C**, is acceptable.

In its response to **RAI 3183, Question 13.03-19.A**, the applicant described the method by which the population was projected, and explained that a brief summary of this methodology will be provided in a revision to the ETE. **Confirmatory Item 13.03-01** was created to track this revision to the ETE. The staff confirmed that the applicant included a revised methodology describing how the population was projected to the year 2015 in Revision 3 of the ETE. This is acceptable because it meets the guidance in Appendix 4 to NUREG-0654 Section II.

In its response to **RAI 3183, Question 13.03-20.B**, the applicant committed to include the number of buses required to support the evacuation of summer camp populations in a future revision to the ETE Report. **Confirmatory Item 13.03-02** was created to track this revision. The staff confirmed that the applicant included revised text for the number of buses and drivers needed to evacuate summer camps in Revision 3 of the ETE report. Therefore, the applicant's response to **RAI 3183, Question 13.03-20.B** is acceptable because it meets the guidance in Appendix 4 to NUREG-0654 Section II.

In its response to **RAI 3183, Questions 13.03-19.C.1 and 19.C.2**, the applicant included the updated text and ETE calculation for the transit dependent population group and will include this information in a future revision of the ETE Report. **Confirmatory Item 13.03-03** was created to track these revisions. The staff confirmed that the applicant included revised text and an ETE calculation for the transit dependent population group in Revision 3 of the ETE report. Therefore, the applicant's response to **RAI 3183, Questions 13.03-19.C.1 and 19.C.2** is acceptable because it meets the guidance in Appendix 4 to NUREG-0654 Section II.

In its response to **RAI 3183, Question 13.03-21.B.1**, the applicant will provide a revised Table 8.4, "Special Facility Transit Demand," which updates the resources required evacuate persons at special facilities. **Confirmatory Item 13.03-04** was created to track these revisions. The staff confirmed that the applicant included revised text in Section 8.3, "Special Facility Demand," and revised Table 8-4 in Revision 3 of the ETE report. Therefore, the applicant's response to **RAI 3183, Question 13.03-21.B.1** is acceptable because it meets the guidance in Appendix 4 to NUREG-0654 Section II.

In its response to **RAI 3183, Question 13.03-21.B.2**, the applicant stated that references to transportation resources being shared between special facilities will be removed. **Confirmatory Item 13.03-05** was created to track these revisions. The staff confirmed that the applicant removed references to transportation resources being shared amongst special facilities in Revision 3 of the ETE report. Therefore, the applicant's response to **RAI 3183, Question 13.03-21.B.2** is acceptable because it meets the guidance in Appendix 4 to NUREG-0654 Section II.

In its response to **RAI 3183, Question 13.03-19.B**, the applicant explained that zone specific growth rates were multiplied by 15/7 in order to compute a growth factor to year 2015 from the year 2007 population estimate. In its response to Open Item 13.03-01, the applicant explained

that the growth factor of 15/7 discussed in the response to **RAI 3183, Question 13.03-019.B** was incorrect and should be 8/7. The applicant provided all of the sections of the ETE that were updated as a result of this change including the Executive Summary, Sections 3-3, 6-7, 7-7, 7-8, 7-9, 7-10, 7-11, 7-12, 7-13, 7-14, J-4, J-5, J-6, J-7, J-8, J-9, J-10, J-11, and J-25. In addition, the applicant provided updated Tables 7-1C and 7-1D in the Executive Summary, in Tables 7-1A through 7-1D in Section 7 and in Tables J-1A through J-1D, and Figure J-12 in Appendix J that include the new simulation runs with the corrected vehicle count. **Confirmatory Item 13.03-64** was created to track these revisions. The staff confirmed all the above changes have been made in Revision 3 of the ETE report. Therefore, the applicant's response to the RAI that the staff tracked as **Open Item 13.03-01** is acceptable because it meets the guidance in Appendix 4 to NUREG-0654 Section II.

In its response to **RAI 3183, Question 13.03-20.C**, the applicant agreed that the Fourth of July Celebration will be added as a special events scenario and provided the changes to the ETE text and tables that will be necessary to incorporate this addition. **Confirmatory Item 13.03-06** was created by the staff to ensure that the appropriate revisions to the ETE text and tables are included in an update to the ETE Report. Upon the staff's review of **RAI 3183, Question 13.03-20.C**, the staff identified that the applicant did not provide updated Tables 7-1A through 7-1D, "Time to Clear the Indicated Area of [X] Percent of the Affected Population," so that the tables include the addition of Scenario 13. In its response to a follow-up RAI that the staff tracked as **Open Item 13.03-02**, the applicant stated that text would be added to Section 3.3.3, "Fourth of July Celebration," which describes the assumptions and vehicle estimates to support the scenario, and would provide updated Tables 7-1A thru 7-1D which identify the time to clear the indicated area of the affected population. **Confirmatory Item 13.03-65** was created to track these revisions. The staff confirmed all the above changes have been made in Revision 3 of the ETE report. Therefore, the applicant's response to **RAI 3183, Question 13.03-20.C** and the follow-up RAI that the staff tracked as **Open Item 13.03-02** are acceptable because those responses meet the guidance in Appendix 4 to NUREG-0654 Section II.

In its response to **RAI 3183, Question 13.03-21.A**, the applicant references Table 1 in Attachment 13.03-21A for peak populations and resources needed to evacuate special facilities. In its response to the follow-up RAI that the staff tracked as **Open Item 13.03-03**, the applicant provided Table 1, "Special Facility Transit Demand at Capacity," which shows the transportation requirements for special facilities if capacity population is considered rather than the current census. The staff finds the additional information provided by the applicant in response to the RAI tracked as **Open Item 13.03-03** to be acceptable. Additionally, the applicant's response to **RAI 3183, Question 13.03-21.A**, stated that requirements of Section II.C of Appendix 4 of NUREG-0654 were met by using census populations for individual special facilities. In its response to the RAI tracked as **Open Item 13.03-04**, the applicant explained that, as required by NUREG-0654, peak capacities were considered, but found to be inappropriate. The applicant explained that each of the special facilities was contacted, and the census data received did not suggest that peak capacity was appropriate. The staff finds the response provided by the applicant regarding the RAI tracked as **Open Item 13.03-04**, to be acceptable. The staff finds the applicant's responses to RAI 3183, Question 13.03-21.A, Open Item 13.03-03, and Open Item 13.03-04 acceptable because those responses meet the guidance in Appendix 4 to NUREG-0654 Section II.

13. 3C.18.4 Traffic Capacity

Technical Information in the ETE Report: [Section III of Appendix 4] Appendix B, "Traffic Assignment Model," provides a discussion on the trip assignment and distribution model and

provides the algorithm used to compute the link travel time. Appendix C, "Traffic Simulation Model: PC-DYNEV," describes the method and computer model used in analyzing the evacuation times. Section 4, "Estimation of Highway Capacity," describes the method for estimating highway capacity and provides the algorithm and equation used for the lane capacity for the approach to an intersection. Additional information was requested in **RAI 3183, Question 13.03-18 (A, B, C, D)** regarding the variables used in the intersection equation presented and on the modeling of traffic control.

The applicant's response to **RAI 3183, Question 13.03-18.A**, describes the process of computing green time in proportion to the dominant competing traffic volumes at intersections to reflect the dominant use of actuated traffic signals. The applicant's response also explained that competing traffic volumes on major and minor routes were also considered in the adjustment to traffic signal green time.

Regarding **RAI 3183, Question 13.03-18.B**, the applicant states that no allowance is made for traffic control operations. The county emergency plans only identify a few intersections where traffic control would be established. The effect of traffic control at only a few intersections would not change the ETE. The applicant refers to the response of **RAI 3183, Question 13.03-18.A**, which discusses how signal timing at intersections is modeled. RAI 4224, Question 13.3-34, tracked as **Open Item 13.03-05** regarding traffic control was deleted and replaced with a follow-up RAI 4224, Question 13.3-35, tracked as **Open Item 13.03-06**, which was edited and resubmitted to the applicant.

Regarding **RAI 3183, Question 13.03-18.C**, the response explained that special treatments, such as contra flow, are not necessary for the CPNPP site and were not included in the analysis. Regarding **RAI 3183, Question 13.03-18.D**, the response states that if traffic control points in the county plans were implemented, the ETE may be less than predicted in the study. The response further discusses that no credit is taken for improved traffic operations where traffic personnel are located. In its response to an RAI the staff tracked as **Open Item 13.03-06**, the applicant stated that the ETE does not approximate the use of manned traffic control points based on the adjustment of green time at signalized intersections. The applicant explained that the analyst adjusts the allocation of green time in the simulation model so that it services the competing traffic volumes and the movement of traffic under evacuation conditions. The applicant further explained that the allocation of green time in the simulation model provides a realistic representation of human behavior, but does not reflect the implementation of manual traffic controls during an evacuation.

The evacuation routes used in the evacuation are identified in Figure 10-2, "Evacuation Route Map for Hood County," and Figure 10-3, "Evacuation Route Map for Somervell County." Reception centers are shown on Figure 10-1, "General Population Reception Centers." Section 8.5, "Evacuation Time Estimates for Transit Dependent People," states that the evacuation routes were only used to compute ETE, and it is not necessary for counties to use these exact routes in the event of an emergency. Additional information was requested from the applicant in **RAI 3183, Question 13.03-23.A**, regarding why the identified evacuation routes in the ETE report should be considered representative of an evacuation and used to formulate the ETE. In its response dated, the applicant describes that the evacuation routes used in the analysis are representative of an evacuation because they service evacuation centers. The selection of actual evacuation routes is a county decision based on the conditions at the time of the emergency. Section 10, "Evacuation Routes," states that routing of evacuees from the EPZ boundary to the reception centers should minimize travel. Evacuees exiting the EPZ on Farm to Market (FM) roadways FM4, FM56, FM203, and State Road 144, as indicated in Figure 10-2

and Figure 10-3 are not traveling toward reception centers. Additional information was requested in **RAI 3183, Question 13.03-26.C** regarding how evacuees exiting the EPZ on FM4, FM56, FM203, and State Road 144 get to the reception centers based on the direction of travel identified. In its response dated, the applicant references the Federal Emergency Management Agency (FEMA) Radiological Emergency Planning (REP) manual requirement that reception centers have the capacity to monitor 20 percent of the EPZ population within 12 hours. The ETE Report was revised to delete the reference to minimizing travel delay from the EPZ to the Reception Centers because not all evacuation routes facilitate direct travel to Reception Centers.

Figure 1-2, "Comanche Peak Link-Node Analysis Network," shows the nodes used in the analysis, but the nodes are not labeled to correspond to Appendix K, "Evacuation Roadway Network Characteristics." A legible map that corresponds with the nodes identified in Appendix K was requested in **RAI 3183, Question 13.03-23.B**. In its response, the applicant provides Figures K-1 thru K-16, "CPNPP Site Link-Node Analysis Network," which clearly identifies the node numbers referenced in Appendix K, "Evacuation Roadway Network Characteristics." The applicant identifies the changes in text referencing these new figures.

Table 8-5A, "School Evacuation Time Estimates - Good Weather," and Table 8-5B, "School Evacuation Time Estimates - Rain," identify a distance of 14 miles from Mambrino Elementary School to the EPZ boundary and 10 miles from Happy Hills Farm to the EPZ boundary and information was needed to explain why these schools do not have a more direct evacuation route out of the EPZ. Additional information was requested in **RAI 3183, Question 13.03-22.D** to explain how travel from the schools to the EPZ boundary reflects a generally radial evacuation. In its response, the applicant described why selected routes were avoided when determining the routing for school evacuations. In addition, the applicant included in its response, a revised Table 8-3, "Host Schools," to show the correct host schools to which EPZ schools would be evacuated. The applicant also provided the appropriate revised text and school ETEs in Tables 8.5A, "School Evacuation Time Estimates - Good Weather," and 8.5B, "School Evacuation Time Estimates - Rain." Table 8-4, "Special Facility Transit Demand," identifies each special facility and Table 8-2, "School Population Demand Estimates," provides a listing of the schools located within the EPZ. A map that identifies the locations of special facilities and schools was requested in **RAI 3183, Question 13.03-22.E**. In its response, the applicant provided new figures showing the locations of special facilities and schools. Figure E-1, "Schools and Day Care Facilities," and Figure E-2, "Medical Facilities and Correctional Facilities," were provided in the response. The evacuation regions discussed in Section 6, "Demand Estimation for Evacuation Scenarios," Reference 22.5 degree sectors to establish the keyhole based areas identified in Table 6-1, "Description of Evacuation Regions." A map that identifies these sectors was requested in **RAI 3183, Question 13.03-22.F**. In its response, the applicant provided an updated Figure 6-1, "Comanche Peak Nuclear Power Plant EPZ," which includes 22.5 degree sectors.

Section 4 states that highway capacity is a function of, among other things, percent heavy trucks. Section 4 also states that at-grade intersections are apt to become the first bottleneck locations, and traffic control is often used to supersede traffic control devices at these intersections. Appendix D, "Detailed Description of Study Procedure," identifies the steps to perform the evacuation time estimate calculations. Step 10 in Appendix D discusses that changing control treatment at critical intersections can improve service and expedite movement of traffic. Appendix G, "Traffic Management," indicates the traffic management plan presented in the ETE does not supersede existing plans, but provides information that may be considered in updating the plan. Additional information was requested in **RAI 3183, Questions 13.03-24.A**

and **13.03-18.B**, regarding the percent heavy trucks used in the analysis and modeling of traffic control as a treatment to expedite movement of traffic. In its response to **RAI 3183, Question 13.03-24.A**, the applicant used the Highway Capacity Manual process to describe that heavy trucks will have a material effect on traffic operations. The applicant committed to revising the text for Assumption 4 in Section 2.3 to read as follows:

The effect of heavy truck traffic on traffic operations during evacuation was determined to be immaterial; therefore, the presence of truck traffic is not expressly considered in calculating ETE. However, the buses used to evacuate transit dependent persons from within the EPZ are represented within the modeling process as being equivalent to two passenger car units in calculating the ETE.

Regarding **RAI 3183, Question 13.03-18.B**, which requested information regarding modeling of traffic control, in its response dated, the applicant described that the DYNEV simulation model represents the actual implementation of traffic signal displays. The model simulates movement of traffic and when a red signal is exhibited, the vehicles stop. When signals change to green, the vehicles discharge at the saturation flow rate. The response to **RAI 3183, Question 13.03-18.B**, describes that no allowance is made for traffic control operations.

Figure 8-2, "Proposed Transit Dependent Bus Routes," identifies bus Routes 1 and 3 on roadways where access control points, described in Appendix G, "Traffic Management," prevent vehicle traffic in at least one direction. Additional information was requested in **RAI 3183, Question 13.03-26.B**, regarding any delays expected along bus Routes 1 and 3 as a result of access control points. In its response dated, the applicant describes the expected actions at access control points and provides text to clarify that access will not be delayed on bus Routes 1 and 3.

Technical Evaluation: [Section III of Appendix 4] As described above, the staff finds that the ETE Report provides a complete review of the evacuation road network. Analyses are made of travel times and potential locations for congestion. The evacuation time estimates are not dependent on the establishment of traffic control points and access control points. Therefore, manpower and equipment shortages have no effect on the evacuation time estimate calculations. In addition, all evacuation route segments and their characteristics, including capacity, are described.

A traffic control and management strategy that is designed to expedite the movement of evacuating traffic is described. The traffic management strategy is based on a field survey of critical locations and consultation with emergency management and enforcement personnel.

The staff finds the response provided by the applicant regarding **RAI 3183, Questions 13.03-18.A, B, and C, and 13.03-23.A** to be acceptable.

In its response to **RAI 3183, Question 13.03-22.D**, the applicant stated that a revised Table 8-3, "Host Schools," will be included in an update to the ETE Report in order to show the correct host schools to which EPZ schools would be evacuated, as well as, revise the text and school ETEs in Tables 8.5A "School Evacuation Time Estimates - Good Weather," and 8.5B, "School Evacuation Time Estimates - Rain," to reflect these changes. **Confirmatory Item 13.03-07** was created to track these revisions. The staff confirmed all the above changes have been made in Revision 3 of the ETE report. Therefore, the applicant's response to **RAI 3183, Question**

13.03-22.D is acceptable because it meets the guidance in Appendix 4 to NUREG-0654 Section III.

In its response to **RAI 3183, Question 13.03-22.E**, the applicant committed to providing a revised Figure E-1, "Schools and Day Care Facilities," and Figure E-2, "Medical Facilities and Correctional Facilities," in a future update to the ETE Report. **Confirmatory Item 13.03-08** was created to track these revisions. The staff confirmed all the above changes have been made in Revision 3 of the ETE report. Therefore, the applicant's response to **RAI 3183, Question 13.03-22.E** is acceptable because it meets the guidance in Appendix 4 to NUREG-0654 Section III.

In its response to **RAI 3183, Question 13.03-22.F**, the applicant explained that an updated Figure 6-1, "Comanche Peak Nuclear Power Plant EPZ," which includes 22.5 degree sectors will be provided in a future update to the ETE Report. **Confirmatory Item 13.03-09** was created to track these revisions. The staff confirmed that Figure 6-1 has been included in Revision 3 of the ETE report. Therefore, the applicant's response to **RAI 3183, Question 13.03-22.F** is acceptable because it meets the guidance in Appendix 4 to NUREG-0654 Section III.

In its response to **RAI 3183, Question 13.03-23.B**, the applicant states that Figures K-1 thru K-16, "CPNPP Site Link-Node Analysis Network," will be included in a future update to the ETE Report. **Confirmatory Item 13.03-10** was created to track these revisions. The staff confirmed that Figures K-1 through K-16 have been included in Revision 3 of the ETE report. Therefore, the applicant's response to **RAI 3183, Question 13.03-23.B** is acceptable because it meets the guidance in Appendix 4 to NUREG-0654 Section III.

In its response to **RAI 3183, Question 13.03-24.A**, the applicant provided clarification regarding heavy truck traffic. In a future update to the ETE Report, the applicant will provide additional text to Assumption 4 in Section 2.3 in order to clarify that although the presence of heavy trucks on roadways could be significant prior to the evacuation, trucks will be diverted to paths outside the EPZ once the evacuation has begun. Revisions to the ETE will also include a discussion from the Highway Capacity Manual which states that heavy trucks will not impact the ETE at terrain levels which are present in the EPZ. **Confirmatory Item 13.03-11** was created to track this revision. The staff confirmed all the above changes have been made in Revision 3 of the ETE report. Therefore, the applicant's response to **RAI 3183, Question 13.03-24.A** is acceptable because it meets the guidance in Appendix 4 to NUREG-0654 Section III.

In its response to **RAI 3183, Question 13.03-26.B**, the applicant stated that revisions will be made to Section 9 and Appendix G in order to clarify that access will not be delayed on bus Routes 1 and 3. **Confirmatory Item 13.03-12** was created to track these revisions. The staff confirmed that revisions have been made to Section 9 and Appendix G which states that all trips entering the EPZ to support the evacuation are assumed to be unhindered by personnel manning ACPs. Therefore, the applicant's response to **RAI 3183, Question 13.03-26.B** is acceptable because it meets the guidance in Appendix 4 to NUREG-0654 Section III.

In its response to **RAI 3183, Question 13.03-26.C**, the applicant identified the text in Section 10, "Evacuation Routes," that will be deleted. **Confirmatory Item 13.03-13** was created to track these revisions. The staff confirmed that text regarding routing of evacuees from the EPZ boundary to the Reception Centers has been deleted in Revision 3 of Section 10 of the ETE. Therefore, the applicant's response to **RAI 3183, Question 13.03-26.C** is acceptable because it meets the guidance in Appendix 4 to NUREG-0654 Section III.

In its response to **RAI 3183, Question 13.03-18.D**, the applicant states that if traffic control points in the county plans were implemented, the ETE may be less than predicted in the study. In response to Open Item 13.03-06, the applicant further discusses that no credit is taken for improved traffic operations where traffic personnel are located. However, as described in the response to **RAI 3183, Question 13.03-18.A**, the allocation of green time is adjusted so that it balances the competing traffic volumes as a means to consider traffic control. It was the staff's determination that because county emergency plans only identify a few intersections where traffic control would be established, the effect of traffic control would not change the ETE. Therefore, the staff finds the applicant's responses to **RAI 3183, Question 13.03-18.D** and the associated RAI 4224, Question 13.03-35, tracked as **Open Item 13.03-06** acceptable because the additional information provided meets the guidance in Appendix 4 to NUREG-0654 Section III.

13.3C.18.5 Analysis of Evacuation Times

Technical Information in the ETE Report: [Section IV of Appendix 4] The evacuation model PC-DYNEV was used to calculate on road travel and delay times. The model results are summarized in Table 7-1D, "Time to Clear the Indicated Area of 100 Percent of the Affected Population," which provides ETEs in a format consistent with Table 2 in Appendix 4 of NUREG-0654. Traffic queuing and congestion areas are presented in Figure 7-3, "Congestion Patterns at 1 hour after the Advisory to Evacuate," and at subsequent times in additional figures. As indicated in Figure 7-3, the availability of many roadways combined with the relatively small population of the EPZ results in very few roadways at a Level of Service F, which would indicate heavy congestion (TRB, 2000). Figure 7-5, "Congestion Patterns at 2 Hours and 30 Minutes after the Advisory to Evacuate," indicates no congestion within the EPZ or surrounding areas. In the analysis of the evacuation time for schools and transit dependent people, the average speed of traffic at the time of the evacuation of these population groups was derived from the results of the model.

Section 5, "Estimation of Trip Generation Time," describes the process of combining distribution functions to establish the time-dependent traffic loading. The data to support the loading distributions was obtained from a telephone survey conducted during development of the ETE. The combined trip generation distributions are provided in Figure 5-3, "Comparison of Trip Generation Distributions." Special facilities and school trip generation distributions are quantified separately in Section 8, "Transit Dependent and Special Facility Evacuation Time Estimates." Distribution functions are developed in Section 5 and trip generation activities are described in Figure 5-1, "Events and Activities Preceding the Evacuation Trip." The time distributions for each mobilization activity are combined to form the trip generation distributions and are presented in Figure 5-3, "Comparison of Trip Generation Distributions." In Figure 5-1, the timeline for households with commuters includes time to return home, if needed, and then evacuate. The timeline for households without commuters indicates these residents are at home at the time they become aware of the emergency; however, members of households without commuters may not be at home when they become aware of the accident. The timeline for transients, also in Figure 5-1, indicates that transients do not return home, (e.g., hotel) prior to evacuating. Additional information was requested in **RAI 3183, Questions 13.03-25 B.1, B.2, C.1, and C.2**, to clarify the trip generation time elements for residents and transients. In its response to **RAI 3183, Questions 13.03-25 B.1 and B.2**, the applicant explains that the ETE study assumes residents not at home at the time of notification, can travel home in the 50 minute notification time which is allocated for the public and that it is not necessary to separately identify these residents in Figure 5-1. The applicant included an update to the ETE Report that

specifically addresses family members not at home at the time of an emergency. The applicant further describes the time allocation distributions to be inclusive of residents who may not be at home when an evacuation is ordered. Regarding **RAI 3183, Questions 13.03-25 C.1 and C.2**, the applicant explains that the ETE study mobilization distribution time for transients is two hours which is sufficient time for transients to return to hotels to gather belongings. The applicant provided and updated Figure 5-1 that includes transients returning to hotels prior to evacuating.

Section 8-1, "Transit Dependent People - Demand Estimate," identifies the need for 20 bus runs to support evacuation of the transit dependent population. Additional information was requested in **RAI 3183, Question 13.03-26.A** regarding specialized transportation required to support evacuation of the transit dependent. In its response dated, the applicant confirmed that the 259 people registered with local authorities were not included in the data and provided current information from the counties identifying 84 special needs persons requiring transportation and has provided the text and updated ETE calculations for this population group in Revision 3 of the ETE. The applicant also makes reference to its response to **RAI 3183, Question 13.03-19.C.2**, where the applicant identified the number of specialized vehicles needed to evacuate the transit dependent population.

Table 8-4, "Special Facility Transit Demand," lists special facility capacities, but uses the facility current census for the determination of resources needed to support an evacuation. The time for the 30 ambulances identified in Table 8-4 to mobilize is 30 minutes in Section 8-5, "Evacuation Time Estimates for Transit-Dependent People." Additional information was requested in **RAI 3183, Questions 13.03-27.A and 13.03-27.B** regarding the additional resources which would be required to support peak populations of special facilities and the availability and logistics of mobilizing ambulances in 30 minutes. In its response to **RAI 3183, Question 13.03-27.A**, the applicant noted that Section II.C of Appendix 4 of NUREG-0654/FEMA-REP-1 requires an estimate of the population within special facilities on an institution-by-institution basis. The applicant states that this requirement has been met in Table 8-4 of the ETE report which uses current facility population.

The applicant provides Table 1, "Ambulance Resources," in its response to **RAI 3183, Question 13.03-27.B**. This table identifies that 35 ambulances are available to aid in an evacuation and clarifies that the 30 minute mobilization time for ambulances is a weighted time average. The applicant included Table 1, "Ambulance Resources," as Table 8.9, in Revision 3 of the ETE Report and revised the text to indicate their use of a weighted average mobilization time. In a response to an RAI tracked as **Open Item 13.03-07**, the applicant explained that Table 8-4, "Special Facility Transit Demand," of the ETE Report, Revision 2, shows that 30 ambulance runs are necessary to evacuate all of the bedridden patients in the EPZ, assuming 2 patients per ambulance and that 11 additional ambulance runs would be required when considering special facilities at capacity populations. The applicant's response to **RAI 3183, Question 13.03-27**, provided Table 8-9 to the ETE Report, which shows that 35 ambulances are available for an evacuation within 60 minutes. In its response to **RAI 4224, Question 13.3-36**, tracked as **Open Item 13.03-07**, the applicant explained that because 41 ambulance runs would be required when considering facilities at capacity populations and 35 ambulances are available, 6 additional ambulances would be required. The applicant further explained that of the 35 ambulances available within 60 minutes of the advisory to evacuate, 10 can be mobilized to evacuate patients within 15 minutes to start the evacuation process. The applicant provided the revised text for Section 8.5, "Evacuation Time Estimates for Transit Dependent People," that describes the calculation of the ETE for the ambulance runs.

Section 7.4, "Guidance on Using ETE Tables," identifies the contents of Table 7-1D, "Time to Clear the Indicated Area of 100 Percent of the Affected Population," as the elapsed time required for 100 percent of the population to evacuate. Section 7.3, "Evacuation Rates," states that the ETE does not account for stragglers. Additional information was requested in **RAI 3183, Question 13.03-25.A** to clarify the evacuation time for members of the public identified as stragglers. In its response to **RAI 3183, Question 13.03-25.A**, the applicant described the statistical process used to address outlier data. The applicant explained that all of the residents within the EPZ are included in the analysis, but in some cases, using a statistically valid approach, outlier mobilization time data was reduced to be more consistent with the responses received and consistent with expectations of evacuees during an emergency. The applicant provided this outlier data in Revision 3 to the ETE Report.

Adverse weather conditions for rain are considered, and separate ETEs are provided for normal and adverse weather conditions. Roadway capacity and speed reduction percentages are provided in Section 2.3, "Study Assumptions," and are consistent with values provided in the Highway Capacity Manual (TRB, 2000) and the weather related technical publication (Agarwal, et. al., 2005) identified in the ETE report. Section 2.2, "Study Methodological Assumptions," discusses the assumptions on voluntary and shadow evacuations which are quantified and depicted in Figure 2-1, "Voluntary Evacuation Methodology."

Technical Evaluation: [Section IV of Appendix 4] As described above, the staff finds that the ETE report provides for an analysis of Evacuation Times. A total of 756 evacuation time estimates were computed for the evacuation of the general public. Each evacuation time estimate quantifies the aggregate evacuation time estimated for the population within one of the 63 Evacuation Regions to completely evacuate from that Region, under the circumstances defined for one of 12 evacuation scenarios (63 x 12 = 756). In its response to **RAI 3183, Question 13.03-20.C**, the applicant revised the ETE to discuss the addition of a special event scenario, Scenario 13. Scenario 13 will represent the peak tourist volume in the EPZ during the Fourth of July Celebration in Granbury. Separate evacuation time estimates are calculated for transit-dependent evacuees, including school children. The staff finds the applicant's response to **RAI 3183, Question 13.03-20.C** to be acceptable as the response conforms to the guidance identified in Appendix 4 to NUREG-0654/FEMA-REP-1 Section IV.

Distribution functions for notification of the various categories of evacuees were developed. The distribution functions for the action stages after notification predict what fraction of the population will complete a particular action within a given span of time. There are separate distributions for auto-owning households, school population, and transit-dependent populations. These times are combined to form the trip generation distributions.

On-road travel and delay times are calculated. An estimate of the time required to evacuate a particular segment of the non-auto-owning population dependent upon public transportation is developed.

In its response to **RAI 3183, Question 13.03-25.A**, the applicant stated that a description of the analysis of outlying data in Section 5, "Estimation of Trip Generation Time," will be provided in a future revision to the ETE Report. **Confirmatory Item 13.03-14** was created to track these revisions. The staff confirmed that revisions have been made to Section 5 of Revision 3 of the ETE report which provides a description of outlying data. Therefore, the applicant's response to **RAI 3183, Question 13.03-25.A** is acceptable because it meets the guidance in Appendix 4 to NUREG-0654 Section IV.

In its response to **RAI 3183, Questions 13.03-25.B.1 and B.2**, the applicant explained that an update to the ETE Report will be made to include the additional text needed to specifically address family members not at home at the time of an emergency. **Confirmatory Item 13.03-15** was created to track these revisions. The staff confirmed that revisions have been made to Section 5 of Revision 3 of the ETE report which explains what sequences households with family members not at home will take. Therefore, the applicant's responses to **RAI 3183, Questions 13.03-25.B.1 and B.2** are acceptable because it meets the guidance in Appendix 4 to NUREG-0654 Section IV.

In its response to **RAI 3183, Questions 13.03-25.C.1 and C.2**, the applicant stated that Figure 5-1, "Events and Activities Preceding Evacuation Trip," will be updated to reflect the possibility of transients returning to hotels prior to evacuation in a future revision to the ETE Report. **Confirmatory Item 13.03-16** was created to track these revisions. The staff confirmed that revisions have been made to Figure 5-1 in Revision 3 of the ETE report which explains what sequences households with family members not at home will take. Therefore, the applicant's responses to **RAI 3183, Questions 13.03-25.C.1 and C.2** are acceptable because it meets the guidance in Appendix 4 to NUREG-0654 Section IV.

In its response to **RAI 3183, Question 13.03-26.A**, the applicant included the updated text and ETE calculation for the transit dependent population group and will include this information in a future revision of the ETE Report. This issue was identified by the staff as **Confirmatory Item 13.03-03**. The staff confirmed that the revisions described have been made in Revision 3 of the ETE report. Therefore, the applicant's response to **RAI 3183, Question 13.03-26.A** is **acceptable** because it meets the guidance in Appendix 4 to NUREG-0654 Section IV.

In its response to **RAI 3183, Question 13.03-27.A**, the applicant noted that Section II.C of Appendix 4 of NUREG-0654/FEMA-REP-1 requires an estimate of the population within special facilities on an institution-by-institution basis. The applicant states that this requirement has been met in Table 8-4 of the ETE report which uses current facility population. The applicant's response to **RAI 3183, Question 13.03-27.A** is acceptable because it meets the guidance in Appendix 4 to NUREG-0654 Section IV. In its response to **RAI 3183, Question 13.03-27.B**, the applicant stated that Table 1, "Ambulance Resources," would be added as Table 8.9, "Ambulance Resources," in a revised version of the ETE Report. Table 8.9 will identify the time needed for mobilizing ambulances. The applicant also committed to revising the text within the ETE Report to support Table 8.9. **Confirmatory Item 13.03-17** was created to track these revisions. The staff confirmed that Table 8-9 and text describing Table 8-9 has been included in Revision 3 of the ETE report. Therefore, the applicant's response to **RAI 3183, Question 13.03-27.B** is acceptable because it meets the guidance in Appendix 4 to NUREG-0654 Section IV.

In its response to **RAI 3183, Question 13.03-27.B**, the applicant references Table 1, "Ambulance Resources," as described in its response to **RAI 3183, Question 13.03-21.A**. This table lists 35 ambulance resources. In its response to **RAI 3183, Question 13.03-21.A**, the applicant stated that if capacity populations were used for special facilities an additional 11 ambulances would be needed. In its response to an RAI that the staff tracked as **Open Item 13.03-07**, the applicant explained that Table 8-4, "Special Facility Transit Demand," of the ETE Report, Revision 2, shows that 30 ambulance runs are necessary to evacuate all of the bedridden patients in the EPZ, assuming 2 patients per ambulance and that 11 additional ambulance runs would be required when considering special facilities at capacity populations. The applicant explained that of the 35 ambulances available within 60 minutes of the advisory to evacuate, 10 can be mobilized to evacuate patients within 15 minutes to start the evacuation

process. Section 8.5 of the ETE Report will be revised to discuss the impact to the ETE if additional ambulances need to be mobilized. **Confirmatory Item 13.03-66** was created to track this revision. The staff confirmed that Section 8-5 in Revision 3 of the ETE report has been revised. Therefore, the applicant's response to the RAI tracked as **Open Item 13.03-07** is acceptable because it meets the guidance in Appendix 4 to NUREG-0654 Section IV.

13.3C.18.6 Other Requirements

Technical Information in the ETE Report: [Section V of Appendix 4] The process for confirming the evacuation is complete is described in Section 12, "Confirmation Time," which includes a time estimate for confirmation of the evacuation. Additional information was requested in **RAI 3183, Questions 13.03-28.A and 13.03-28.B** regarding the time required for confirmation of evacuation. In its response to **RAI 3183, Question 13.03-28.A**, the applicant described that the ETE report was reviewed by the appropriate State and county agencies and their comments were incorporated into the report. The applicant identified that no comments were received regarding the use of the telephone survey as a confirmation tool. The applicant clarified in its response to **RAI 3183, Question 13.03-28.B**, that the time to acquire phone numbers is not included in the confirmation time estimate; however, the applicant identifies that the confirmation process should not begin until three hours after the advisory to evacuate which provides time for implementing a telephone survey process.

The ETE report does not identify whether the ETE, including the traffic management plan detailed in Appendix G, "Traffic Management," was reviewed or approved by State and local law enforcement. Additional information was requested in **RAI 3183, Questions 13.03-29.A and 13.03-29.B** to clarify whether State and local law enforcement have reviewed the traffic control plan. Regarding **RAI 3183, Question 13.03-29.A**, the applicant describes that the traffic control plan was provided to the State of Texas, Hood and Somervell Counties, and State and local police for their review. Furthermore, a summary of the ETE was presented to offsite response agencies which included representatives of local police. The applicant identifies that comments were provided on the traffic management plan and the comments were incorporated into the ETE Report. Regarding **RAI 3183, Question 13.03-29.B**, the applicant references the response to **RAI 3183, Question 13.03-29.A**, which states that comments were received and integrated into the ETE Report.

Technical Evaluation: [Section V of Appendix 4] As discussed above, the staff finds that the ETE report describes the time required for confirmation of evacuation as described in Section V of Appendix 4 in NUREG-0654/FEMA-REP-1. In addition, the development of the ETE Report was coordinated with emergency planners from the state of Texas and Hood and Somervell Counties who are involved in emergency response for the site. The staff finds the applicant's responses to **RAI 3183, Questions 13.03-28.A, 13.03-28.B, 13.03-29.A and 13.03-29.B** to be **acceptable**.

13.3C.18.7 Conclusion

On the basis of the staff's review of Revision 3 of the ETE Report to the CPNPP COLA, the staff confirmed that the ETE Report adequately addresses **Confirmatory Items 13.03-01 through 13.03-17, Confirmatory Items 13.03-64 through 13.03-66**, and the applicant's responses to the RAIs that the staff tracked as **Open Items 13.03-01 through 13.03-04, Open Item 13.03-06, and Open Item 13.03-07**. Therefore, the staff concludes that the information provided in the ETE Report meets the requirements of 10 CFR Part 50, Appendix E.IV and 10 CFR 52.79(a)(21), as well as, the guidance provided in Appendix 4 of NUREG-0654.

13.3C.19 Inspection, Test, Analysis, and Acceptance Criteria (EP ITAAC)

13.3C.19.1 Regulatory Basis

The staff considered the following regulatory requirement and guidance in the evaluation of the information in the COLA related to emergency planning ITAAC:

10 CFR 52.80(a), requires that a COLA contain the proposed inspections, tests, and analyses, including those applicable to emergency planning, 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 be operated in conformity with the combined license, the provisions of the Atomic Energy Act of 1954, and the Commission's rules and regulations.

13.3C.19.2 Technical Information in the Application

Technical Information in the Emergency Plan: (52.80(a)) The application addresses ITAAC in two places: (1) Table B-2, "Emergency Plan Inspections, Tests, Analyses, and Acceptance Criteria," in COLA Part10, "ITAAC and Proposed License Conditions," and (2) Table 2.10-1, "Emergency Planning Inspections, Tests, Analyses, and Acceptance Criteria," in the US-APWR DCD.

In **RAI 3327, Question 13.03-15 S-1**, the applicant was asked to explain why ITAAC were not developed for nine of the generic ITAAC Planning Standards as describe in Appendix C.II.1-B, "Development Guidance for Emergency Planning ITAAC," to RG 1.206. The nine generic ITAAC which were not developed were:

1. Assignment of Responsibility - Organizational Control
2. Onsite Emergency Organization
3. Emergency Response Support and Resources
4. Radiological Exposure Control
5. Medical and Public Health Support.
6. Recovery and Reentry Planning and Post-Accident Operations
7. Radiological Emergency Response Training
8. Responsibility for the Planning Effort: Development, Periodic Review, and Distribution of Emergency Plans
9. Implementing Procedures

In its response to **RAI 3327, Question 13.03-15 S-1.1**, the applicant provided a revised Table B-2, "Emergency Plan Inspections, Tests, Analyses, and Acceptance Criteria," in Appendix B of COLA Part 10 that includes ITAAC 1.1, "Assignment of Responsibility - Organizational Control" which states that EPPs providing for 24-hours per day emergency response staffing will be inspected prior to fuel load. The applicant explained that a number of EPPs will be developed to effectively implement the Emergency Plan, including an EPP to address activation of the emergency response organization in Appendix 5 of the Emergency Plan, and these procedures will be submitted to the NRC 180 days prior to initial fuel load. In its response to **RAI 3327, Question 13.03-15 S-1.2**, the applicant provided a revised Appendix B, Table B-2 that includes ITAAC 2.0, "Onsite Emergency Organization," which states that an inspection of the EPPs will be conducted to ensure that the procedures provide for minimum and augmented on-shift staffing levels consistent with Table II-2 of the Emergency Plan. The applicant stated that these EPPs will be submitted to the NRC 180 days prior to initial fuel load, in accordance with Appendix E to 10 CFR Part 50.

In its response to **RAI 3327, Question 13.03-15 S-1.3**, the applicant stated that Acceptance Criterion 3.0, "Emergency Response Support and Resources," is not used in RG 1.206 Table C.II.1-B1. The applicant referenced Subsection II.C.1.2.10 of RG 1.206, "ITAAC for Emergency Planning (SRP Section 1.4.3.10)," which states, "...the applicant may provide proposed EP-ITAAC that are consistent with those provided in Table C.II.1-B1 of Appendix C.II.1-B and are modified, as necessary, to accommodate site-specific impacts or features." The applicant stated that no additional site-specific impacts or features where additional ITAAC would be warranted were identified. The applicant explained that Certification Letters and LOAs documenting supporting organizations commitment to support the emergency response for CPNPP as Part 5 of the COLA have been submitted. The applicant provided a revised Appendix B Table B-2 including a Section 3.0, "Emergency Response Support and Resources," with an explanation indicating the Acceptance Criterion is not used.

In its the response to **RAI 3327, Question 13.03-15 S-1.4**, the applicant provided a revised Table B-2 that includes ITAAC 11.0, "Radiological Exposure Control." In its response to **RAI 3327, Question 13.03-15 S-1.5**, the applicant stated that the Emergency Plan contains agreements with Lake Granbury Medical Center and Walls Regional Hospital which addresses arrangements for treating contaminated injured workers. The applicant stated that medical capabilities must be tested annually as required by COL Emergency Plan Subsection II.N.2.c. The applicant provided a revised COLA Part 10 Appendix B, Table B-2 of the Emergency Plan that includes ITAACs 12.1 through 12.3 to reflect the ITAACs regarding medical and public health support. In its response to **RAI 3327, Question 13.03-15 S-1.6**, the applicant stated that Acceptance Criterion 13.0, "Recovery and Reentry Planning and Post- Accident Operations," is not used in RG 1.206 Table C.II.1-131. The applicant identified the need for an EPP to address recovery and reentry in Appendix 5 of the Emergency Plan which includes EPPs that address "Reentry, Recovery and Closeout." The applicant will submit these procedures to the NRC 180 days prior to initial fuel load as detailed in ITAAC 1.1 of Table B-1. The applicant provided a revised Table B-2 including the ITAAC 13.0, "Recovery and Reentry Planning and Post-Accident Operations," with an explanation that the Acceptance Criterion is not used.

In its response to **RAI 3327, Question 13.03-15 S-1.7**, the applicant referenced Subsection II.O.1 of the COL Emergency Plan, which requires the applicant to implement a training program that provides for initial training and periodic retraining for individuals who have been assigned emergency response duties. The applicant explained that Appendix 5 includes supporting procedures that address "Emergency Preparedness Training." The applicant provided a revised

Appendix B, Table B-2 to include ITAAC 15.0, “Radiological Emergency Response Training.” In its response to **RAI 3327, Question 13.03-15 S-1.8**, the applicant stated that Appendix 5 includes supporting procedures that address “Maintaining Emergency Preparedness.” The applicant provided a revised Appendix B, Table B-1 including ITAAC 16.0 “Responsibility for the Planning Effort: Development, Periodic Review, and Distribution of Emergency Plans,” to ensure that the Emergency Plan for CPNPP has been forwarded to the Texas Governor’s Division of Emergency Management and the Hood and Somervell County Judges.

In its response to **RAI 3327, Question 13.03-15 S-1.9**, the applicant stated that RG 1.206 Table C.II.1.1 -BI, Acceptance Criterion 17.0, “Implementing Procedures,” identifies that the licensee has submitted detailed implementing procedures for the onsite emergency plan no less than 180 days prior to fuel load. The applicant provided a revised Appendix B, Table B-1 including ITAAC 17.0, “Implementing Procedures,” which states that Luminant has submitted detailed EPPs for the onsite Emergency Plan no less than 180 days prior to fuel load.

In Table B-2, “Emergency Plan Inspections, Tests, Analyses, and Acceptance Criteria, in Part 10 of the COLA, the acceptance criteria are prefaced with the phrase, “A report exists that confirms...” In RIS 2008-05, “Lessons Learned to Improve Inspections, Tests, Analyses, and Acceptance Criteria Submittal,” issued February 27, 2008, the following guidance is provided in regard to the use of such a phrase:

If applicants use the phrase, “a report exists and concludes that....,” they should consider specifying the scope and the type of report. For example, they should explain whether the scope of the report includes the design, the as-built construction (as reconciled with the design), or any other information.

Consistent with the guidance provided in RIS 2008-05, the applicant was asked in **RAI 3327, Question 13.03-15 S-2**, to discuss the type and scope of the reports cited in ITAAC Table B-2, including how the reports will serve to provide accurate and reliable confirmation that the acceptance criteria have been met or consider removing the words “test records demonstrate” or “a report exists that confirms” from the Table, to create specific and sufficiently objective acceptance criteria. In its response, the applicant stated that the use of the phrase, “a report exists that confirms...” was incorporated into the Acceptance Criteria in Table 3.8-1 for consistency with Acceptance Criteria presented in the US-APWR DCD. The applicant explained that they have reviewed Table B-2 and determined that those Acceptance Criteria associated with conducting a drill or exercise should retain this phrase. The applicant provided a revised Table B-2 with the phrase removed from Acceptance Criterion 1.1.1, 1.1.2, 4.1, 5.1.2.1, 5.1.2.2, 5.2.1, 5.2.2, 6.2, 6.3, 6.4, 6.5, and 6.7.

In **RAI 3327, Question 13.03-15 S-3**, the applicant was requested to revise the Acceptance Criteria to meet the requirements of RG 1.206, Table C.II.1-B1 of RG 1.206, Acceptance Criteria 5.1, which describes the ability to notify State and Local agencies within 15 minutes after the declaration of an emergency. In response, the applicant explained that Section II.E.1 of the COLA Emergency Plan provides information regarding the notification of the State of Texas and Somervell and Hood Counties' EROs, and as described in the Plan, initial notifications shall begin no later than fifteen minutes after initial declaration of an emergency classification, escalation of an emergency classification, initial Protective Action Recommendation, emergency termination and reclassification, and emergency termination. The applicant provided a revised Section 5.1 of Table B-2 that includes text clarifying that initial notification to the State of Texas and Somervell and Hood Counties will begin no later than 15 minutes after the declaration of an emergency.

In **RAI 3327, Question 13.03-15 S-4**, Table B-2, “Emergency Plan Inspections, Tests, Analyses, and Acceptance Criteria,” in Part 10 of the COLA, Acceptance Criteria 2.2 requires specific acceptance criteria for determination of successful response mobilization test completion to be included. The staff asked the applicant to revise the Table B-2 Acceptance Criteria 2.2 to include the specific acceptance criteria for this test. In its response the applicant provided a revised Table B-2, Section 5.2, “Notification Methods and Procedures,” that includes criteria that notifications have been performed. The revised Acceptance Criterion also references Acceptance Criterion 14.1.1.2.B.1.b regarding confirmation of the ability to mobilize the CPNPP, Units 3 and 4, ERO.

Table B-2, “Emergency Plan Inspections, Tests, Analyses, and Acceptance Criteria,” in Part 10 of the COLA, references Tier 1 of the US-APWR DCD Revision 2 for Program Elements 3.1, 3.2, and 5.1; Inspection, Test, Analyses 3.1, 3.2, and 5.1; and Acceptance Criteria 3.1, 3.2, and 5.1. The Tier 1 US-APWR DCD provided by the Licensee is Revision 1. In **RAI 3327, Question 13.03-15 S-5**, the staff requested the applicant to either revise the previously listed sections of the Table to reflect DCD Revision 2, provide Revision 2 for reference use, or discuss why this reference is correct as written. In its response, the applicant provided revised Sections 6.1, 6.2, and 8.1 in Table B-2 which does not include the revision number of the US-APWR DCD Tier 1 document. The applicant explained that due to renumbering efforts in previous RAIs, the section numbers differ from those in the RAI.

In **RAI 3327, Question 13.03-15 S-6**, Table B-2, “Emergency Plan Inspections, Tests, Analyses, and Acceptance Criteria,” in Part 10 of the COLA, Acceptance Criteria 4.1 describes a JIC) that is located in the Granbury City Hall. The staff requested the applicant to revise Acceptance Criteria 4.1 to be consistent with RG 1.206 Acceptance Criteria 7.1, which includes the number of news media to be accommodated in this facility. In its response the applicant explained that Section II.G.3 of the COL Emergency Plan provides information regarding the JIC and states that space is provided for approximately 75 media personnel. The applicant provided a revised Table B-2, Acceptance Criteria 7.1 that specifies the JIC have sufficient space for approximately 75 news media personnel.

In RG 1.206, “Emergency Planning-Generic Inspection, Test, Analyses, and Acceptance Criteria (EP-ITAAC),” Table C.II.1-B1, Acceptance Criteria 8.1.6 and 8.1.7 include the bracketed statement that “The COL applicant will adopt design certification criteria, if applicable, or otherwise specify OSC location and identify specific capabilities.” Table B-2, Emergency Plan Inspections, Tests, Analyses, and Acceptance Criteria,” In Part 10 of the COLA, Acceptance Criteria 5.1.2.1, and 5.1.2.2 do not take credit for DCD criteria, or list OSC specific capabilities. The staff requested in **RAI 3327, Question 13.03-15 S-7** that the applicant revise the acceptance criteria to include the criteria listed in RG 1.206, or explain why it is not required. In its response, the applicant stated that the US-APWR DCD does not specify a location for the OSC; however, as discussed in Subsection II.H.1 of the CPNPP, Units 3 and 4, Emergency Plan, the OSC is located in the Maintenance Building between CPNPP, Units 3 and 4. The applicant provided a revised Acceptance Criterion 5.1.2.2 that is consistent with Acceptance Criterion 8.1.7 in RG 1.206 Table C.II.1-B1.

In **RAI 3327, Question 13.03-15 S-8**, the staff requested the applicant revise the Table 6.2 Acceptance Criteria to include the complete criteria of RG 1.206, Acceptance Criteria, which states that in addition to the criteria listed in 6.2, it must also include the following: “...and the magnitude of the release of radioactive materials based on plant system parameters and effluent monitors.” In its response, the applicant provided a revised Section 9.2 in Table B-2

that includes, "...and the magnitude of the release of radioactive materials based on plant system parameters and effluent monitors." The applicant explained that this revision appears in Section 9.2 due to renumbering of the ITAACs.

Table B-2, "Emergency Plan Inspections, Tests, Analyses, and Acceptance Criteria," in Part 10 of the COLA, Acceptance Criteria 6.3 addresses requirements of RG 1.206, Acceptance Criteria, which states the licensee must possess the means "to continuously assess the impact of the release of radioactive materials to the environment". In **RAI 3327, Question 13.03-15 S-9**, the staff requested that the applicant revise the associated acceptance criteria to include the criteria listed in RG1.206 in its entirety. In its response, the applicant provided a revised Section 9.3 in Table B-2 that includes the language, "...to continuously assess the impact of the release of radioactive materials to the environment." The applicant explained that this revision appears in Section 9.3 due to renumbering of the ITAACs.

Table B-2, "Emergency Plan Inspections, Tests, Analyses, and Acceptance Criteria," in Part 10 of the COLA, Acceptance Criteria 6.4 describe specified meteorological data being available to the CR, TSC, and EOF. In **RAI 3327, Question 13.03-15 S-10**, the applicant was requested to include in this ITAAC that this information also be made available to offsite NRC center and to the State as indicated in RG 1.206. In its response, the applicant provided a revised Table B-2 with Acceptance Criterion 9.4.1 and 9.4.2 stating that meteorological data is available at the CR, TSC, EOF, offsite NRC Center, and the State of Texas EOC.

In **RAI 3327, Question 13.03-15 S-11**, the applicant was requested to include the word "successfully" into the Acceptance Criteria for 8.1.2.2 for response personnel performance as required by RG 1.206. In its response, the applicant explained that the phrase used in RG 1.206, Table C.II.1-BI Acceptance Criterion 14.1.2, "...and they successfully performed their assignments,..." is subjective. The applicant further explained that exercise performance "success" will be based objectively on the absence of any noted deficiencies; therefore, Acceptance Criterion 8.1.2.2 includes the phrase, "...and there were no uncorrected onsite exercise deficiencies..." and provides objective criteria that can be met.

In **RAI 3327, Question 13.03-15 S-12**, the staff requested the applicant to revise the acceptance criteria in Table B-2, 8.1.1.2 to include specific exercise objectives and associated acceptance criteria as required by RG 1.206, "Emergency Planning-Generic Inspection, Test, Analyses, and Acceptance Criteria (EP-ITAAC)," in order to clearly identify what the requirements are, and to provide the ability to determine whether they have been met. In its response, the applicant provided a revised Section 14.1.1.2 of Table B-2 with objectives that include the ability to identify initiating conditions, EAL parameters and the ability to correctly classify the emergency, notification, emergency response, activation of ERFs, the ability to obtain onsite radiological surveys and samples, development of dose projections, and development of protective action recommendations. **RAI 3327, Question 13.03-15 S-13**, requested this same information be provided for offsite participation as well. In its response, the applicant stated that a full participation exercise must be conducted prior to initial fuel load and the offsite exercise objectives must be met or deficiencies addressed prior to operation above 5 percent power. The applicant provided revised Table B-2 with Acceptance Criterion 14.1.3 which reflects the insertion of additional elements to the ITAAC table previously described in the responses to **RAI 3327, Question 13.03-15 S-1**.

The staff requested in **RAI 3327, Question 13.03-15 S-14**, that the applicant provide responsibilities and associated acceptance criteria, for the onsite emergency response personnel successfully performing their assigned responsibilities during an exercise. In its

response, the applicant provided a revised Table B-2 Acceptance Criterion 8.1.2.2 that identifies responsibilities and associated Acceptance Criteria for the onsite emergency response organization. The applicant explained that this revision appears in the new Section 14.1.2.2 due to revisions to Table B-2, discussed above. The applicant also explained that Table B-1 has been deleted from Part 10, Appendix B and Table B-2 has been renumbered as Table B-1.

13.3C.19.3 Technical Evaluation: (52.80(a)) As described above, the staff finds that the onsite emergency plan with ITAAC, together with the applicant's responses to the RAIs described above, was submitted as required by 10 CFR 52.80(a). The staff used the generic ITAAC table in NUREG-0800, "Standard Review Plan," to review the applicant's proposed ITAAC. The staff found ITAAC located in two areas of the application: (1) Table B-2, "Emergency Plan Inspections, Tests, Analyses, and Acceptance Criteria," in Part 10, "ITAAC and Proposed Licenses Conditions," of the COLA, and (2) Table 2.10-1, "Emergency Planning Inspections, Tests, Analyses, and Acceptance Criteria," in the US-APWR Tier 1 DCD.

The staff finds the onsite emergency plan with ITAAC, together with the additional information provided by the applicant in regards to **RAI 3327, Question 13.03-15 S-11** to be acceptable because it meets the requirements of 10 CFR 52.80(a).

In its response to **RAI 3327, Question 13.03-15 S-1.1**, the applicant will provide a revised Table B-2 in Appendix B of COLA Part 10 to include ITAAC 1.1, "Assignment of Responsibility - Organizational Control" which states that EPPs providing for 24-hours per day emergency response staffing will be inspected prior to fuel load. This is acceptable because it meets the requirements of 10 CFR 52.80(a). **Confirmatory Item 13.03-43** has been created to track this revision.

In its response to **RAI 3327, Question 13.03-15 S-1.2**, the applicant will provide a revised Table B-2, in a revision of the Emergency Plan, to include ITAAC 2.0, "Onsite Emergency Organization," which states that an inspection of the EPPs will be conducted to ensure that the procedures provide for minimum and augmented on-shift staffing levels, consistent with Table II-2 of the Emergency Plan. This is acceptable because it meets the requirements of 10 CFR 52.80(a). **Confirmatory Item 13.03-44** has been created to track this revision.

In its response to **RAI 3327, Question 13.03-15 S-1.4**, the applicant will provide a revised Table B-2 to include ITAAC 11.0, "Radiological Exposure Control," in a future revision to the CPNPP, Units 3 and 4, Emergency Plan. This is acceptable because it meets the requirements of 10 CFR 52.80(a). **Confirmatory Item 13.03-45** has been created to track this revision.

In its response to **RAI 3327, Question 13.03-15 S-1.5**, the applicant will provide a revised Table B-2 of the Emergency Plan to include ITAACs 12.1 through 12.3 to reflect the ITAACs regarding medical and public health support. This is acceptable because it meets the requirements of 10 CFR 52.80(a). **Confirmatory Item 13.03-46** has been created to track this revision.

In its response to **RAI 3327, Question 13.03-15 S-1.6**, the applicant stated that Acceptance Criterion 13.0, "Recovery and Reentry Planning and Post-Accident Operations," is not used in RG 1.206 Table C.II.1-131. The applicant explained that Appendix 5 includes EPPs that address "Reentry, Recovery and Closeout." The applicant will submit these procedures to the NRC 180 days prior to initial fuel load as detailed in ITAAC 1.1 of Table B-1. This is acceptable because it meets the requirements of 10 CFR 52.80(a). **Confirmatory Item 13.03-47** was created to track this revision

In its response to **RAI 3327, Question 13.03-15 S-1.7**, the applicant will provide a revised Appendix B, Table B-2 to include ITAAC 15.0, "Radiological Emergency Response Training," in a revision of the Emergency Plan. This is acceptable because it meets the requirements of 10 CFR 52.80(a). **Confirmatory Item 13.03-48** has been created to track this revision.

In its response to **RAI 3327, Question 13.03-15 S-1.8**, the applicant will provide a revised Appendix B, Table B-2 to include ITAAC 16.0 "Responsibility for the Planning Effort: Development, Periodic Review, and Distribution of Emergency Plans," to ensure that the Emergency Plan for CPNPP has been forwarded to the Texas Governor's Division of Emergency Management and the Hood and Somervell County Judges. This is acceptable because it meets the requirements of 10 CFR 52.80(a). **Confirmatory Item 13.03-49** has been created to track this revision.

In its response to **RAI 3327, Question 13.03-15 S-1.9**, the applicant will provide a revised Appendix B, Table B-2 including ITAAC 17.0, "Implementing Procedures," which states that the applicant has submitted detailed EPPs for the onsite Emergency Plan no less than 180 days prior to fuel load. This is acceptable because it meets the requirements of 10 CFR 52.80(a). **Confirmatory Item 13.03-50** has been created to track this revision.

In its response to **RAI 3327, Question 13.03-15 S-2**, the applicant will provide a revised Appendix B, Table B-2 that omits the phrase "...a report exists that confirms..." from Table B-2 Acceptance Criteria Sections 4.1.1, 4.1.2, 7.1, 8.1.2.1, 8.1.2.2, 8.2.1, 8.2.2, 9.2, 9.3, 9.4, 9.5, and 9.7. This is acceptable because it meets the requirements of 10 CFR 52.80(a). **Confirmatory Item 13.03-51** has been created to track this revision.

In its response to **RAI 3327, Question 13.03-15 S-3**, the applicant will provide a revised Appendix B Table B-2 Section 5.1, that states the notification to the State of Texas and Somervell and Hood Counties will begin no later than 15 minutes after the declaration of an emergency. This is acceptable because it meets the requirements of 10 CFR 52.80(a). **Confirmatory Item 13.03-52** has been created to track this revision.

In its response to **RAI 3327, Question 13.03-15 S-4**, the applicant will revise Table B-2, Section 5.2, "Notification Methods and Procedures," and Acceptance Criterion 14.1.1.2.B.1.b to state that CPNPP, Units 3 and 4, have the ability to mobilize the emergency response organization in 15 minutes of the initial classification of an Alert Emergency or higher. This is acceptable because it meets the requirements of 10 CFR 52.80(a). **Confirmatory Item 13.03-53** has been created to track this revision.

In its response to **RAI 3327, Question 13.03-15 S-5**, the applicant will provide a revised Table B-2 which does not include the revision number of the US-APWR DCD Tier 1 document. This is acceptable because it meets the requirements of 10 CFR 52.80(a). **Confirmatory Item 13.03-54** has been created to track this revision.

In its response to **RAI 3327, Question 13.03-15 S-6**, the applicant will provide a revised Table B-2, Acceptance Criteria 7.1, which specifies the JIC has sufficient space for approximately 75 news media personnel. This is acceptable because it meets the requirements of 10 CFR 52.80(a). **Confirmatory Item 13.03-55** has been created to track this revision.

In its response to **RAI 3327, Question 13.03-15 S-7**, the applicant will provide a revised Acceptance Criterion 5.1.2.2 that is consistent with Acceptance Criterion 8.1.7 in RG 1.206

Table C.II.1-B1. This is acceptable because it meets the requirements of 10 CFR 52.80(a). **Confirmatory Item 13.03-56** has been created to track this revision.

In its response to **RAI 3327, Question 13.03-15 S-8**, the applicant will provide a revised Table B-2 that includes, “and the magnitude of the release of radioactive materials based on plant system parameters and effluent monitors,” in Section 9.2. This is acceptable because it meets the requirements of 10 CFR 52.80(a). **Confirmatory Item 13.03-57** has been created to track this revision.

In its response to **RAI 3327, Question 13.03-15 S-9**, the applicant will provide a revised Table B-2 that includes the language, “to continuously assess the impact of the release of radioactive materials to the environment,” in Section 9.3 of the table. This is acceptable because it meets the requirements of 10 CFR 52.80(a). **Confirmatory Item 13.03-58** has been created to track this revision.

In its response to **RAI 3327, Question 13.03-15 S-10**, the applicant will provide a revised Table B-2 with Acceptance Criterion 9.4.1 and 9.4.2 stating that meteorological data is available at the CR, TSC, EOF, offsite NRC Center, and the State of Texas EOC. This is acceptable because it meets the requirements of 10 CFR 52.80(a). **Confirmatory Item 13.03-59** has been created to track this revision.

In its response to **RAI 3327, Question 13.03-15 S-12**, the applicant will provide a revised Section 14.1.1.2 of Table B-2 with objectives that include the ability to identify initiating conditions, EAL parameters and the ability to correctly classify the emergency, notification, emergency response, activation of ERFs, and the ability to obtain onsite radiological surveys and samples, development of dose projections, and development of protective action recommendations. This is acceptable because it meets the requirements of 10 CFR 52.80(a). **Confirmatory Item 13.03-60** has been created to track this revision.

In its response to **RAI 3327, Question 13.03-15 S-13**, the applicant will revise Table B-2, Acceptance Criterion 14.1.3 to state that offsite exercise objectives must be met prior to operation above 5 percent power. This is acceptable because it meets the requirements of 10 CFR 52.80(a). **Confirmatory Item 13.03-61** has been created to track this revision.

In its response to **RAI 3327, Question 13.03-15 S-14**, the applicant will provide a revised Table B-2 Acceptance Criterion 14.1.2.2 that identifies responsibilities and associated Acceptance Criteria for the onsite emergency response organization. This is acceptable because it meets the requirements of 10 CFR 52.80(a). **Confirmatory Item 13.03-62** has been created to track this revision.

In its response to **RAI 3327, Question 13.03-15 S-1.3**, the applicant identified no additional site-specific impacts or features where additional ITAAC for Emergency Response Support and Resources would be warranted. The applicant stated that Certification Letters and LOAs documenting supporting organizations commitment to support the emergency response for CPNPP as Part 5 of the COLA have been submitted. This is acceptable because it meets the requirements of 10 CFR 52.80(a). In its response to **RAI 3327, Question 13.03-2 A.3.A**, the applicant responded that LOAs for arrangements made with State and local agencies with Emergency Plan responsibilities would be finalized later in the licensing process and stated that a proposed license condition would be added to Part 10 of the Emergency Plan for Part 3, “Emergency Response Support and Resources.” This is acceptable because it meets the requirements of 10 CFR 52.80(a).

13.3C.19.4 Conclusion

The staff reviewed the application and checked the referenced DCD. The staff's review confirmed, based on the information in the COLA and the applicant's RAI responses, as described above, that the applicant addressed the required information relating to EP ITAAC as discussed above, and there is no outstanding information, with the exception of **Confirmatory Items 13.03-43** through **13.03-62**, expected to be addressed in the CPNPP, Units 3 and 4, COLA related to this section.

REFERENCES

- SECY-05-0197, "Review of Operational Programs in a Combined License Application and Generic Emergency Planning Inspections, Tests, Analyses, and Acceptance Criteria," issued October 28, 2005, (ADAMS Accession No. ML052770225).
- Staff Requirements Memorandum (SRM) SECY-05-0197, "Review of Operational Programs in a Combined License Application and Generic Emergency Planning Inspections, Tests, Analyses, and Acceptance Criteria," issued February 22, 2006. (ADAMS Accession No. ML060530316).

U.S. Code of Federal Regulation (CFR):

- 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities," issued January 2009.
- 10 CFR Part 50, Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities," issued January 2009.
- 10 CFR Part 52, Subpart C, "Combined Licenses," issued January 2008.
- 10 CFR Part 52, Appendix D, "Design Certification Rule for the Design," issued January 2008.
- 44 CFR 350, "Review and Approval of State and Local Radiological Emergency Plans and Preparedness," issued September 1983.

NUREG-Series Reports

- NUREG-0654/FEMA-REP-1, Revision 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants-Final Report," issued November 1980 (see also, March 2002 addenda).
- Supplement 1 to NUREG-0737, "Requirements for Emergency Response Capability," issued January 1983.
- NUREG-0800, "Standard Review Plan for Review of Safety Analysis Report for Nuclear Power Plants," issued March 2007.

Regulatory Guides

- RG 1.97, Revision 2, "Instrumentation for Light-Water-Cooled-Nuclear Power Plants to Assess Plant and Environs Conditions During and Following an Accident," issued December 1980.
- RG 1.101, Revision 5, "Emergency Planning and Preparedness for Nuclear Power Reactors," issued June 2005.
- RG 1.206, Revision 0, "Combined License Applications for Nuclear Power Plants," issued June 2007.

Corporate Authors

- KLD Associates Inc., "Comanche Peak Nuclear Power Plant Final ETE Report," issued 2008.

Publications

- Agarwal, M., et. al. "Impacts of Weather on Urban Freeway Traffic Flow Characteristics and Facility Capacity." 2005 Mid-Continent Transportation Research Symposium. August 2005. (Agarwal, 2005).
- Transportation Research Board (2000). "Highway Capacity Manual," National Research Council, Washington D.C. (TRB, 2000).

Requests for Additional Information (RAI) Response Letters

- Applicant Response Letter: "Comanche Peak Nuclear Power Plant, Units 3 and 4 Docket Numbers 52-034 and 52-035 Response to Request for Additional Information No.8183." Dated November 16, 2009.
- Applicant Response Letter: "Comanche Peak Nuclear Power Plant, Units 3 and 4 Docket Numbers 52-034 and 52-035 Response to Request for Additional Information No.4579, 4606, 4608, and 4609." Dated June 7, 2010.

13.4 Operational Program Implementation

13.4.1 Introduction

In SECY-05-0197, dated October 28, 2005, 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 are identified in RG 1.206, Section C.III.1, Chapter 13, C.I.13.4, "Operational Program Implementation."

13.4.2 Summary of Application

Section 13.4 of the CPNPP, Units 3 and 4, COL FSAR, Revision 1, incorporates by reference Section 13.4 of the US-APWR DCD, Revision 2.

In addition, in CPNPP, Units 3 and 4, COL FSAR Section 13.4, the applicant provided the following:

US-APWR 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), which states:

The COL Applicant is to develop a description and schedule for the implementation of operational programs. The COL Applicant is to "fully describe" the operational programs as defined in SECY-05-0197 and provide commitments for the implementation of operational programs required by regulation. In some instances, programs may be implemented in phases. The COL Applicant is to include the phased implementation milestones in their submittal.

13.4.3 Regulatory Basis

The regulatory basis of the information incorporated by reference is addressed within the FSER related to the DCD.

The regulatory bases of the supplemental information presented in this application are identified in the individual chapters of this SE 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 CPNPP, Units 3 and 4, COL FSAR and checked the referenced DCD to ensure that the combination of the DCD and the information in the COL represent the complete scope of information relating to this review topic.¹ The staff's review confirmed that the information contained in the application and incorporated by reference addresses the required information relating to operational programs. Section 13.4 of the US-APWR DCD is being reviewed by the staff under Docket Number 52-021. The staff's technical evaluation of the information incorporated by reference related to operational programs will be documented in the staff's SE of the DC application for the US-APWR design.

The staff reviewed the information contained in the CPNPP, Units 3 and 4, COL FSAR:

US-APWR COL Information Item

- STD COL 13.4(1)

The staff reviewed STD COL 13.4(1), related to COL Information Item 13.4(1) included under Section 13.4 of the CPNPP, Units 3 and 4, COL FSAR. The applicant replaced the sentence in DCD Section 13.4 with the following:

Table 13.4-201 identifies the Operational Programs required by regulation including the associated FSAR Sections and committed Milestones for implementation.

In Table 13.4-201, the staff identified several editorial errors and requested the applicant correct these errors through RAI 5201, Question 13.04-5. The following table is a compilation of the information provided by the applicant in CPNPP, Units 3 and 4, COL FSAR, Revision 1, Table 13.4-201, as supplemented by its FSAR Updated Tracking Report, Revision 4, dated October 11, 2010, and its response to RAI 5201, dated November 22, 2010. This is Confirmatory Item 13.04-5. The table below includes the specific locations in this SE where the specific operational programs are evaluated.

Operational Program	Implementation Milestone(s)	Implementation Requirement(s)	CPNPP3&4 SER Section(s)
<p>1. Inservice Inspection Program</p> <ul style="list-style-type: none"> • Primary to secondary Leakage Monitoring Program • Highly Radioactive Fluid Systems Outside Containment Monitoring Program • Steam Generator Program 	<p>Prior to commercial service.</p> <p>After steam generator online on nuclear heat.</p> <p>After generator online on nuclear heat.</p> <p>10 CFR 50.55a(g)</p> <p>ASME Section XI IWA 2430(b)</p> <p>Technical Specification 5.5.9</p>	<p>10 CFR 50.55a(g); ASME XI IWA-2430(b)</p> <p>License condition</p> <p>License condition</p> <p>Prior to commercial service</p>	<p>5.2.4 6.1 6.6</p> <p>5.4.2.2</p> <p>Part 4 Technical Specifications Subsection 5.5.2</p> <p>5.4.2.2</p>
<p>2. Inservice Testing Program</p> <ul style="list-style-type: none"> • Primary to secondary Leakage Monitoring Program • Highly Radioactive Fluid Systems Outside Containment Monitoring Program 	<p>After generator online on nuclear heat.</p> <p>After steam generator online on nuclear heat.</p> <p>After generator online on nuclear heat.</p>	<p>10 CFR 50.55a(f), ASME OM Code</p> <p>License condition</p> <p>License condition</p>	<p>3.9.6 5.2.4</p> <p>5.4.2.2</p> <p>Part 4 Technical Specifications Subsection 5.5.2</p>
<p>3. Environmental Qualification Program</p>	<p>Prior to initial fuel load.</p>	<p>License Condition</p>	<p>3.11</p>

Operational Program	Implementation Milestone(s)	Implementation Requirement(s)	CPNPP3&4 SER Section(s)
4. Preservice Inspection Program <ul style="list-style-type: none"> • Steam Generator Tube Preservice Inspection 	Completion prior to initial plant start-up. Prior to initial entry into Mode 4, Hot Shutdown	10 CFR 50.55a(g); ASME XI IWB-2200(a) 10 CFR 50.55a(g) ASME Code Section XI IWB-2200(c)	5.2.4 6.6 5.4.2.2
5. Reactor Vessel Material Surveillance Program	Prior to initial criticality.	License Condition	5.3.1
6. Preservice Testing Program <ul style="list-style-type: none"> • Highly Radioactive Fluid Systems Outside Containment Monitoring Program 	Prior to initial fuel load. After generator online on nuclear heat.	License Condition License Condition	3.9.6 5.2.4 Part 4 Technical Specifications Subsection 5.5.2
7. Containment Leakage Rate Testing Program	Prior to initial fuel load.	10 CFR Part 50, App. J Option A-Section III Option B-Section III.A	6.2.6
8. Fire Protection Program	Prior to fuel receipt for elements of the Fire Protection Program necessary to support receipt and storage of fuel onsite. Prior to initial fuel load for elements or the Fire Protection Program necessary to support fuel load and plant operation.	License Condition	9.5.1

Operational Program	Implementation Milestone(s)	Implementation Requirement(s)	CPNPP3&4 SER Section(s)
9. Process and Effluent Monitoring and Sampling Program <ul style="list-style-type: none"> <li>• Radiological Effluent TS/Standard Radiological Effluent Controls <li>• Offsite Dose Calculation Manual <li>• Radiological Environmental Monitoring Program <li>• Process Control Program 	Receipt of radioactive material onsite Receipt of radioactive material onsite Receipt of radioactive material onsite Receipt of radioactive material onsite	License Condition License Condition License Condition License Condition	11.5 11.5 11.5 11.4

Operational Program	Implementation Milestone(s)	Implementation Requirement(s)	CPNPP3&4 SER Section(s)
14. Emergency Planning	<p>Full participation exercise conducted within 2 years of scheduled date for initial loading of fuel.</p> <p>Onsite exercise conducted within 1 year before the scheduled date for initial loading of fuel.</p> <p>Applicant's detailed implementing procedures for its emergency plan submitted at least 180 days prior to scheduled date for initial loading of fuel.</p>	<p>10 CFR Part 50, Appendix E, Section IV.F.2.a(ii)</p> <p>10 CFR Part 50, Appendix E, Section IV.F.2.a(ii)</p> <p>10 CFR Part 50, Appendix E, Section V</p>	13.3
15. Security Program: Physical Security Program Safeguards Contingency Program Training and Qualification Program Cyber Security Program	<p>Prior to receipt of fuel onsite in the protected area.</p> <p>Prior to receipt of fuel onsite in the protected area.</p> <p>Prior to receipt of fuel onsite in the protected area.</p> <p>Prior to receipt of fuel onsite in the protected area.</p> <p>Prior to receipt of fuel onsite in the protected area.</p>	<p>License Condition</p> <p>License Condition</p> <p>License Condition</p> <p>License Condition</p> <p>License Condition</p>	<p>13.6</p> <p>13.6</p> <p>13.6</p> <p>13.6</p> <p>13.8</p>
16. Quality Assurance Program – Operation	30 days prior to scheduled date for the initial loading of fuel.	10 CFR 50.54(a)(1)	17.5

Operational Program	Implementation Milestone(s)	Implementation Requirement(s)	CPNPP3&4 SER Section(s)
17. Maintenance Rule	Prior to fuel load authorization in accordance with 10 CFR 52.103(g).	10 CFR 50.65(a)(1)	17.6
18. Motor-Operated Valve Testing	Prior to initial fuel load.	License Condition	3.9.6
19. Initial Test Program	<p>Prior to the first construction test being conducted for the Construction Test Program.</p> <p>Prior to the first preoperational test for the Preoperational Test Program.</p> <p>Prior to initial fuel load for the Startup Test Program.</p>	License Condition	14.2

Operational Program	Implementation Milestone(s)	Implementation Requirement(s)	CPNPP3&4 SER Section(s)
20. Fitness for Duty Program			
FFD Program for Construction (workers and first line supervisors)	Prior to onsite construction of safety or security-related SSCs.	10 CFR 26, Subpart K, or 10 CFR 26 Subparts A-H, N, and O	13.7
FFD Program for Construction (management and oversight personnel)	Prior to onsite construction of safety or security-related SSCs.	10 CFR 26, Subparts A-H, N, and O	13.7
FFD Program for Security Personnel	Prior to fuel assemblies being received on site.	10 CFR 26, Subparts A-H, N, and O	13.7
	Prior to the earlier of: Licensee's receipt of fuel assemblies onsite, or establishment of a protected area, or the 10 CFR 52.103(g) finding.	10 CFR 26, Subparts A-H, N, and O, with Subpart I	
FFD Program for FFD Program Personnel	Prior to initiating 10 CFR 26 construction activities	10 CFR 26, Subparts A,B, D-H, N, O, and possibly C,	13.7
FFD Program for persons required to physically report to the TSC or EOF	Prior to the conduct of the first full participating emergency preparedness exercise under 10 CFR 50, Appendix E, Section F.2.a	10 CFR 26, Subparts A-H, N, and O, except for 26.205-209,	13.7

Operational Program	Implementation Milestone(s)	Implementation Requirement(s)	CPNPP3&4 SER Section(s)
FFD Program for Operation	Prior to the earlier of: Licensee's receipt of fuel assemblies onsite, or establishment of a protected area, or the 10 CFR 52.103(g) finding.	10 CFR 26, Subparts A-H, N, and O, except for individuals listed in 26.4(b), who are not subject to 26.205-209.	13.7

13.4.5 **Post-Combined License Activities**

The following contain post-COL activities related to this section:

- CP COL 13.4(1) - The licensee is to develop interfaces of design features with site specific designs and site parameters.

13.4.6 **Conclusions**

The staff reviewed the application and checked the referenced DCD. The staff's review confirmed that the applicant addressed the required information relating to operational programs, and there is no outstanding information expected to be addressed in the CPNPP, Units 3 and 4, COL FSAR related to this section.

The staff is reviewing the information in DCD Section 13.4 under Docket Number 52-021. The results of the staff's technical evaluation of the information related to operational programs incorporated by reference in the CPNPP, Units 3 and 4, COL FSAR will be documented in the staff SER on the DC application for the US-APWR design. The SER for the US-APWR is not yet complete, and this is being tracked as part of Open Item [1-1]. The staff will update Section 13.4 of this SE to reflect the final disposition of the DC application.

On the basis of its review of Section 13.4 of the CPNPP COL FSAR, the staff finds that it appropriately incorporates by reference Section 13.4 of the US-APWR DCD, Revision 2.

However, based on the confirmatory items discussed in the technical evaluation above, the staff is unable to finalize its conclusions regarding this area of review at this time. The staff is tracking completion of the confirmatory items in the next revision to the FSAR.

13.5 **Plant Procedures**

This section provides a description of the applicant's plans to develop administrative and operating procedures to be used by the operating organization. In partial response to COL Information Item 13.5(1), the applicant replaced the content of DCD Section 13.5 with the information specific to the CPNPP, Units 3 and 4, design.

The applicant's response to STD COL Information Item 13.5(1) also replaced the content of DCD Section 13.5.1, "Administrative Procedures," and added new sections to the CPNPP, Units 3 and 4, COL FSAR, Sections 13.5.1.1, "Administrative Procedures General," and 13.5.1.2, "Preparation of Procedures". Therefore, the staff is providing its evaluation of the information added to DCD Sections 13.5 and 13.5.1 within SE Section 13.5.1.1 below.

13.5.1 **Administrative Procedures**

13.5.1.1 **Introduction**

This section discusses the program and procedures for administrative controls over safety-related activities including the preparation, review, and approval of plant operating procedures, the responsibility and duties of shift personnel, shift relief and turnover procedures, fitness-for-

duty program, limitations on working hours, access to the control room, feedback of operating information to plant personnel, and the procedure for verifying correct performance of operating activities.

Also evaluated in this SE section is the new section added to the CPNPP, Units 3 and 4, COL FSAR, Section 13.5.1.2, "Preparation of Procedures," since it is part of the applicant's response to STD COL Information Item 13.5(1). Procedures will be inspected as part of the construction inspection program.

13.5.1.2 Summary of Application

Section 13.5.1, "Administrative Procedures," of the CPNPP, Units 3 and 4, COL FSAR, Revision 1, incorporate by reference Section 13.5.1 of the US-APWR DCD, Revision 2. Sections 13.5.1.1 and 13.5.1.2 are new sections added to the CPNPP, Units 3 and 4, COL FSAR as a result of the applicant's response to the COL information item discussed below.

In addition, in CPNPP, Units 3 and 4, COL FSAR Section 13.5.1, the applicant provided additional information to address the following:

COL Information Item

The COL Applicant is to develop administrative procedures describing administrative controls over activities that are important to safety for the operation of a facility.

13.5.1.3 Regulatory Basis

The regulatory basis of the information incorporated by reference is addressed within the FSER related to the DCD.

In addition, the relevant requirements of the Commission's regulations for the program and procedures for administrative controls over safety-related activities, and the associated acceptance criteria, are given in Section 13.5.1.1 of NUREG-0800.

The applicable regulatory requirements for administrative procedures are as follows:

1. 10 CFR Part 26, "Fitness for Duty."
2. 10 CFR 50.34(f)(3)(i).
3. 10 CFR 50.40(a) and (b).
4. 10 CFR 50.54(l).
5. Appendix B, "Quality Assurance Program for Nuclear Power Plants and Fuel Reprocessing Plants," to 10 CFR Part 50.

The acceptance criteria for meeting the regulatory requirements listed above are:

1. RG 1.8, "Qualification and Training of Personnel for Nuclear Power Plants."

2. RG 1.33, "Quality Assurance Program Requirements (Operation)."
3. RG 1.114, "Guidance to Operators at the Controls and to Senior Operators in the Control Room of a Nuclear Power Unit."
4. NUREG-0694, "TMI-Related Requirements for New Operating Licenses."
5. NUREG-0711, "Human Factors Engineering Program Review Model."
6. NUREG-0737, "Clarification of TMI Action Plan Requirements."
7. American National Standards Institute (ANSI)/American Nuclear Society (ANS) 3.2-1982, "Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants."
8. Administrative procedures should conform to the rules of practice described in ANSI/ANS 3.2, Section 5.2, as endorsed by RG 1.33.
9. Administrative procedures for designating individuals responsible for directing the activities of licensed control room operators should comply with 10 CFR 50.54(l). The process for defining and assigning the responsibilities of CR supervisors and operators should comply with NUREG-0694, "TMI-Related Requirements for New Operating Licenses," Items I.A.1.2 and I.C.3.
10. The administrative procedures for shift relief and turnover should comply with NUREG-0694, Item I.C.2.
11. Administrative controls requiring supervisors and operators to be present in the CR, with designation of a specific area within the CR as the "surveillance area" should comply with RG 1.114.
12. Administrative controls designating of a specific area within the CR as the "surveillance area," should conform to guidance provided in RG 1.114.
13. CR access should conform to the guidance described in NUREG-0694, Item I.C.4.
14. Administrative procedures for the feedback of operation, design, and construction information should comply with 10 CFR 50.34(f)(3)(i) and with the guidance of NUREG-0737, Task Action Plan Item I.C.5.
15. The administrative procedure for verifying the correct performance of operating activities should comply with the guidance of NUREG-0737, I.C.6.
16. Administrative controls governing crane operations must include a requirement that the operators of cranes over fuel pools be qualified and conduct themselves in accordance with the guidelines of ANSI B30.2-1976 (Chapter 2-3), "Overhead and Gantry Cranes."
17. A vendor interface program should ensure that vendor information for safety-related components is incorporated into plant documentation as described in

GL 90-03, "Relaxation of Staff Position in Generic letter 83-28," issued March 20, 1990.

13.5.1.4 Technical Evaluation

The staff reviewed Sections 13.5, 13.5.1, 13.5.1.1 and 13.5.1.2 of the CPNPP, Units 3 and 4, COL FSAR and checked the referenced DCD to ensure that the combination of the DCD and the information in the COL represent the complete scope of information relating to this review topic.¹ The staff's review confirmed that the information contained in the application and incorporated by reference addresses the required information relating to the program and procedures for administrative controls over safety-related activities per the guidance in RG 1.206, Section C.III.1, Chapter 13, Section C.III.13.5.1, "Administrative Procedures." The staff's review of Section 13.5.1 of the CPNPP, Units 3 and 4, COL FSAR finds that it appropriately incorporates by reference Section 13.5.1 of the US-APWR DCD, Revision 2.

Section 13.5.1 of the US-APWR DCD is being reviewed by the staff under Docket Number 52-021. The staff's technical evaluation of the information incorporated by reference related to the program and procedures for administrative controls over safety-related activities will be documented in the staff's SER of the DC application for the US-APWR design.

In addition, the staff reviewed the information contained in the CPNPP, Units 3 and 4, COL FSAR pertaining to COL information items. The staff reviewed STD COL 13.5(1) related to COL Information Item 13.5 (1) included under Sections 13.5, 13.5.1, 13.5.1.1, and 13.5.1.2 of the CPNPP, Units 3 and 4, COL FSAR. The applicant added information to these sections to address the program and procedures for administrative controls over activities important to safety for the operation of the facility.

NUREG-0800, Section 13.5.1.1, states the application should describe the procedures that provide for administrative control over safety-related activities for the operation of the facility. In FSAR, Section 13.5.1.1, the applicant replaced the content of DCD Subsection 13.5.1 with the following:

The Plant Manager develops and implements written administrative procedures that assign the responsibilities and authorities of the plant staff. These administrative procedures also provide the control measures for the preparation, review, approval, revision, and use of all station procedures and instructions that govern quality related activities. Administrative procedures ensure that station procedures and instructions are reviewed by qualified personnel, approved by authorized personnel, and distributed to and used by the personnel performing the prescribed activity.

The administrative controls used during the operations phase, which are described in this section, are consistent with the provisions of RG 1.33.

NUREG-0800, Section 13.5.1.1, states that the application should describe the procedures that provide for administrative control over safety-related activities for the operation of the facility but are not required to include detailed written procedures in the SAR. In FSAR, Section 13.5.1.1, the applicant listed the Category (A) - Controls and Category (B) - Specific Procedures as stated in NUREG-0800, Section 13.5.1.1.

Procedures address the following administrative categories:

Category A-Controls

- procedures review and approval.
- equipment control procedures.
- control of maintenance and modifications.
- fire protection procedures.
- crane operation procedures.
- temporary changes to procedures.
- temporary procedures.
- special orders of a transient or self-cancelling character.

Category B-Specific Procedures

- standing orders to shift personnel.
- assignment of shift personnel to duty stations and definition of “surveillance area.”
- shift relief and turnover.
- fitness for duty.
- control room access.
- limitations on work hours.
- feedback of design, construction, and applicable important industry and operating experience.
- shift supervisor administrative duties.
- verification of correct performance of operating activities.

In its review of these listed procedures, regulatory requirements and proposed completion, the staff found that the applicant provided adequate procedure control description in the FSAR that meets the criteria found in NUREG-0800, Section 13.5.1.1. The staff determined that this is acceptable, as the guidance of NUREG-0800, Chapter 13.5.1.1 is met.

The staff reviewed Section 13.5.1.2 of the CPNPP COL FSAR, “Preparation of Procedures”. This section states administrative procedures and operating procedures necessary for operator training and preparation for operator license examinations will be completed 18 months prior to fuel loading and other procedures and instructions are prepared and approved prior to their use for performing the prescribed safety-related activity. This time frame meets the schedule specified in NUREG-0800, Section 13.5.1.1 and is therefore, acceptable.

The applicant also states that the quality assurance (QA) program described in FSAR Chapter 17 addresses document control, record retention and adherence to instructions and procedures, assignment of responsibilities, approval, and change requirements for procedures. The station management position designated responsible for a given activity, as prescribed in the QA manual, is also responsible for the preparation of procedures and instructions for that activity and that the Plant Manager approves station administrative procedures. In its review of Section 13.5.1.2, the staff found that the applicant provided adequate procedure control description in the SAR that meets the criteria found in NUREG-0800, Section 13.5.1.1 and complies with Appendix B of 10 CFR 50 and RG 1.33. The staff determined that this is acceptable, as the guidance of NUREG-0800, Chapter 13.5.1.1 is met.

13.5.1.5 Post-Combined License Activities

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

13.5.1.6 Conclusions

The staff reviewed the application and checked the referenced DCD. The staff's review confirmed that the applicant addressed the required information relating to the program and procedures for administrative controls over safety-related activities, and there is no outstanding information expected to be addressed in the CPNPP, Units 3 and 4, COL FSAR related to this section.

The staff is reviewing the information in DCD Sections 13.5 and 13.5.1 under Docket Number 52-021. The results of the staff's technical evaluation of the information related to the program and procedures for administrative controls over safety-related activities incorporated by reference in the CPNPP, Units 3 and 4, COL FSAR will be documented in the staff's SER of the DC application for the US-APWR design. The SER for the US-APWR is not yet complete, and this is being tracked as part of Open Item [1-1]. The staff will update Section 13.5.1.1 of this SE to reflect the final disposition of the DC application.

The staff concludes that the information pertaining to CPNPP, Units 3 and 4, COL FSAR Section 13.5.1 is within the scope of the DC and adequately incorporates by reference Section 13.5.1 of the US-APWR DCD. The staff's review confirmed that the information contained in the application and incorporated by reference addresses the relevant information related to administrative procedures and there is no outstanding information expected to be addressed in the COL FSAR related to this subsection and is, thus, acceptable.

In addition, the staff has compared the additional COL information within the application to the relevant NRC regulations, acceptance criteria defined in NUREG-0800, Section 13.5.1.1, and other NRC RGs and concludes that the applicant is in compliance with the NRC regulations. COL Information Item STD COL 13.5(1), involving the administrative procedures, has been adequately addressed by the applicant and can be considered satisfied. In conclusion, the applicant has provided sufficient information for satisfying the guidance of NUREG-0800, Chapter 13.5.1.1, and for satisfying the requirements of 10 CFR Part 50, 10 CFR Part 52, Appendix B of 10 CFR 50, and RG 1.33.

13.5.2 Operating and Maintenance Procedures

This section provides a description of the applicant's plans to develop administrative and operating procedures to be used by the operating organization. In partial response to COL Information Items 13.5(3) through 13.5(6), the applicant replaced the content of DCD Section 13.5.2 with the information for CPNPP, Units 3 and 4.

The applicant's response to the COL information items listed above also replaced the content of DCD Section 13.5.2.1. Therefore, the staff is providing its evaluation of the information added to DCD Section 13.5.2 within SE Section 13.5.2.1 below.

13.5.2.1 Operating and Emergency Operating Procedures

13.5.2.1.1 Introduction

This section discusses the procedures performed by licensed operators in the main CR that are developed by the COL applicant. Also described are the operating procedures that are used by

the operating organization to ensure routine operating, off-normal, and emergency activities are conducted in a safe manner. Procedures will be inspected as part of the construction inspection program.

13.5.2.1.2 **Summary of Application**

Sections 13.5.2 and 13.5.2.1 of the CPNPP, Units 3 and 4, COL FSAR, Revision 1, incorporate by reference Sections 13.5.2 and 13.5.2.1 of the US-APWR DCD, Revision 2.

In addition, in CPNPP, Units 3 and 4, COL FSAR Sections 13.5.2 and 13.5.2.1, the applicant provided STD COL Information Items 13.5.2(3) through 13.5.2(7) to address the corresponding US-APWR COL information items as follow:

- STD COL 13.5(3)

The applicant provided additional information in STD COL 13.5(3) to address COL Information Item 13.5(3), which states:

The COL Applicant is to develop procedures performed by licensed operators in the main control room. Operating procedures that are used by the operating organization to ensure routine operating, offnormal, and emergency activities are conducted in a safe manner are described. The plan includes the implementation of these procedures.

The applicant discussed how control room procedures to be performed by licensed operators in the CR will be developed.

- STD COL 13.5(4)

The applicant provided additional information in STD COL 13.5(4) to address COL Information Item 13.5(4), which states:

The COL Applicant is to describe the different classifications of procedures the operators will use in the main control room and locally in the plant for operations, the operating organization responsible for maintaining the procedures, and the general format and content of the different classifications.

The applicant discussed the different classifications of procedures the operators will use in the main control room and locally in the plant for operations.

- STD COL 13.5(5)

The applicant provided additional information in STD COL 13.5(5) to address COL Information Item 13.5(5), which states:

The COL Applicant is to describe the program for developing operating procedures.

The applicant discussed the program for developing operating procedures.

- STD COL 13.5(6)

The applicant provided additional information in STD COL 13.5(6) to address COL Information Item 13.5(6), which states:

The COL Applicant is to describe the program for developing and implementing emergency operating procedures [EOPs].

The applicant discussed the program for developing and implementing EOP's.

- STD COL 13.5(7)

The applicant provided additional information in STD COL 13.5(7) to address COL Information Item 13.5(7), which states:

The COL Applicant is to describe the classifications of maintenance and other operating procedures.

The applicant discussed the classifications of maintenance and other operating procedures.

Note: STD COL 13.5(2) was deleted from the US-APWR DCD.

13.5.2.1.3 **Regulatory Basis**

The regulatory basis of the information incorporated by reference is addressed within the FSER related to the DCD.

In addition, the relevant requirements of the Commission's regulations for operating and EOPs, and the associated acceptance criteria, are given in Section 13.5.2.1 of NUREG-0800.

The applicable regulatory requirements and guidance documents for the COL-specific items described above are as follows:

1. **Operating Procedure Schedule.** A generally acceptable target date for completion of operating procedures is about six months before fuel loading to allow adequate time for plant staff familiarization and to allow staff adequate time to develop operator license examinations. The procedures generation package (PGP) for EOPs must be submitted not later than three months before the date formal operator training on EOPs is to begin.
2. **Control Room and Plant Procedures.** The following regulations and staff guidelines applicable to operating procedures are to be used in the CR and locally in the plant:
 - 10 CFR 50.34(a)(6) and (10) and 10 CFR 50.34(b)(6)(iv) and (v).
 - 10 CFR Part 50, Appendix B, Criteria V and VI, establish criteria for development, approval, and control of procedures for all activities affecting quality.

- RG 1.33, “Quality Assurance Program Requirements (Operation).”
- The review criteria for procedures in NUREG-0711, “Human Factors Engineering Review Model”, Chapter 9, “Element 8-Procedure Development.”
- NUREG-0737, “Clarification of TMI Action Plan,” Item I.C.1, “Guidance for the Evaluation and Development of Procedures for Transients and Accidents.” (EOPs only)
- Supplement 1 to NUREG-0737, TMI Action Plan Items I.C.1 and I.C.9, “Requirements for Emergency Response Capability,” Item 7, Subsections 7.1 and 7.2, “Upgrade of Emergency Operating Procedures.” (EOPs only).
- The guidelines in the Regulatory Position section of RG 1.33.
- The guidelines of ANSI/ANS 3.2-1982, Section 5.3.
- Appendix A to NUREG-0800, Section 13.5.2.1, “Guidelines for the Evaluation of Procedures Generation Packages.” (EOPs only).
- Supplement 1 to NUREG-1358, “Lessons Learned from the Special Inspection Program for Emergency Operating Procedures,” 1992.

Specific SRP acceptance criteria acceptable to meet the relevant requirements of the NRC's regulations are identified within the requirement and guidance documents itemized above.

13.5.2.1.4 **Technical Evaluation**

The staff reviewed Sections 13.5.2 and 13.5.2.1 of the CPNPP, Units 3 and 4, COL FSAR and checked the referenced DCD to ensure that the combination of the DCD and the information in the COL represent the complete scope of information relating to this review topic.¹ The staff's review confirmed that the information contained in the application and incorporated by reference addresses the required information relating to operating and EOPs. Sections 13.5.2 and 13.5.2.1 of the US-APWR DCD has been reviewed by the staff under Docket Number 52-021. The staff's technical evaluation of the information incorporated by reference related to operating and EOPs will be documented in the staff's SER of the DC application for the US-APWR design.

In its review of Section 13.5.2 of the CPNPP COL FSAR, the staff found that it appropriately incorporates by reference Section 13.5.2 of the US-APWR DCD, Revision 2.

In addition, in CPNPP, Units 3 and 4, COL FSAR Sections 13.5.2 and 13.5.2.1, the applicant provided STD COL Information Items 13.5.2(3) through 13.5.2(7) to address the corresponding US-APWR COL information items as follow:

US-APWR COL Information Items

- STD COL 13.5(3) through STD COL 13.5(6)

The NRC staff reviewed STD COL 13.5(3) through STD COL 13.5(7) related to COL Information Items 13.5(3) through 13.5(7), respectively, included under Sections 13.5.2 and 13.5.2.1 of the CPNPP3&4 COL FSAR. The applicant replaced the content of DCD Sections 13.5.2 and 13.5.2.1 with information related to operating and EOPs for CPNPP, Units 3 and 4. Specifically:

- STD COL 13.5(3) Procedures performed by licensed operators in the CR.

The applicant provided the following additional information to resolve COL Information Item 13.5(3), which addresses the plant procedures of the COL applicant. COL Information Item 13.5(3) states:

The COL Applicant is to develop procedures performed by licensed operators in the main control room. Operating procedures that are used by the operating organization to ensure routine operating, off-normal, and emergency activities are conducted in a safe manner are described. The plan includes the implementation of these procedures.

The applicant provided the following text to supplement Section 13.5, "Plant Procedures," of the US-APWR DCD, dealing with the training program development for plant personnel.

"Development of Computer Based Procedures (CBP's) will be performed in accordance with the regulations and guidance provided in NUREG's 0800, 0711, and 0899."

The staff finds this information acceptable because it meets the criteria in NUREG-0800, Chapter 13.5.2.1; however, FSAR, Section 13.5.2, "Operating and Maintenance Procedures," erroneously refers to US-APWR DCD, Section 13.5.1, "Administrative Procedures," instead of to DCD Section 13.5.2, "Operating and Maintenance Procedures." The staff issued RAI 3033, Question 13.05.02.01-01, to request that the applicant clarify the DCD reference in the FSAR. In its response to this RAI, dated October 19, 2009, the applicant committed to revise FSAR Subsection 13.5.2 by correcting the DCD reference. The staff finds that the response is acceptable. This RAI is now being tracked as **Confirmatory Item 13.05.02.01-01**.

- STD COL 13.5(4) Classifications of procedures.

The applicant provided the following additional information to resolve COL Information Item 13.5(4), which addresses the plant procedures of the COL applicant. COL Information Item 13.5(4) states:

The COL Applicant is to describe the different classifications of procedures the operators will use in the main control room and locally in the plant for operations, the operating organization responsible for maintaining the procedures, and the general format and content of the different classifications.

The applicant provided the following text to supplement Section 13.5, "Plant Procedures," of the US-APWR DCD, dealing with the training program for plant personnel.

'Operating procedures for all anticipated conditions affecting reactor safety are written prior to initial fuel loading. These procedures are grouped into the following classifications: System Operating Procedures, General Plant Procedures, Abnormal Condition Procedures, Emergency Operating Procedures, and Alarm Response Procedures.'

The staff finds this information acceptable because it meets the criteria in NUREG-0800, Chapter 13.5.2.1; however, FSAR, Section 13.5.2, "Operating and Maintenance Procedures," is incomplete in that it does not identify the party that would develop and maintain the procedures used by licensed operators in the MCR. The staff issued RAI 3033, Question 13.05.02.01-02, to request that the applicant identify the group that will develop these procedures. In its response to this RAI, dated October 19, 2009, the applicant stated that the operating and EOP's that will be used by licensed operators in the MCR will be developed in accordance with the Human Factors Engineering program described in DCD Section 18.8, "Procedure Development." The staff finds that the response is acceptable.

- STD COL 13.5(5) Program for developing operating procedures.

The applicant provided the following additional information to resolve COL Information Item 13.5(5), which addresses the plant procedures of the COL applicant. COL Information Item 13.5(5) states:

The COL Applicant is to describe the program for developing operating procedures.

The applicant provided the following text to supplement Section 13.5, "Plant Procedures," of the US-APWR DCD, dealing with the training program for plant personnel.

"Development of Computer Based Procedures (CBP's) will be performed in accordance with the regulations and guidance provided in NUREG's 0800, 0711, and 0899."

The staff finds this information acceptable because it meets the criteria in NUREG-0800, Chapter 13.5.2.1; however, FSAR, Section 13.5.2, "Operating and Maintenance Procedures," is incomplete in that it does not identify the party that would maintain operating procedures. The staff issued RAI 3033, Question 13.05.02.01-02, to request that the applicant identify the group that will maintain these procedures. In its response to this RAI, dated October 19, 2009, the applicant stated that operating procedures will be maintained by the plant staff under the direction of the plant manager. The staff finds that the response is acceptable.

- STD COL 13.5(6) Program for developing and implementing EOP's.

The applicant provided the following additional information to resolve COL Information Item 13.5(6), which addresses the plant procedures of the COL applicant. COL Information Item 13.5(6) states:

The COL Applicant is to describe the program for developing and implementing EOP's.

The applicant provided the following text to supplement Section 13.5, "Plant Procedures," of the US-APWR DCD, dealing with the training program for plant personnel.

"These procedures direct actions necessary for the operators to mitigate the consequences of transients and accidents that cause plant parameters to exceed reactor protection system or engineering safety feature actuation setpoints. The Procedure Generation Package (PGP) will be developed and provided to the NRC at least three months prior to commencing formal operator training. The PGP will include Generic Technical Guidelines, a Writer's Guide, a description of the program for validation of the EOP's and a brief description of the training program for the EOP's (Reference 13.5-201). The EOP's are symptom-based with clearly specified entry and

exit conditions. Transitions between and within the normal operating, alarm response, and abnormal operating procedures and the EOP's are appropriately laid out, well defined, and easy to follow (See Section 18.8). The use of human factored, functionally oriented, EOP's will improve human reliability and the ability to mitigate the consequence of a broad range of initiating events and subsequent multiple failures or operator errors, without the need to diagnose specific events."

The staff finds this information acceptable because it meets the criteria in NUREG-0800, Chapter 13.5.2.1; however, FSAR, Section 13.5.2, "Operating and Maintenance Procedures," is incomplete in that it does not identify the party that would maintain EOP's. The staff issued RAI 3033, Question 13.05.02.01-02, to request that the applicant identify the group that will maintain EOP's. In its response to this RAI, dated October 19, 2009, the applicant stated that EOP's will be maintained by the plant staff under the direction of the plant manager. The staff finds that the response is acceptable.

Also, FSAR, Section 13.5.2, "Operating and Maintenance Procedures," is incomplete in that it does not describe the plans to develop and to submit plant-specific technical guidelines (P-STG's), which are used to develop EOP's. The staff issued RAI 3033, Question 13.05.02.01-03, to request that the applicant describe these plans. In its response to this RAI, dated October 19, 2009, the applicant committed to revise FSAR Subsection 13.5.2 by adding a statement that the EOP PGP will provide a detailed description of the P-STG development plan. The staff finds that the response is acceptable. This RAI is now **Confirmatory Item 13.05.02.01-03.**

Also, FSAR, Section 13.5.2, "Operating and Maintenance Procedures," is incomplete in that it does not describe the information that will be included in the generic technical guidelines, which are used to develop EOP's. The staff issued RAI 3033, Question 13.05.02.01-04, to request that the applicant describe this information. In its response to this RAI, dated October 19, 2009, the applicant committed to revise FSAR Subsection 13.5.2 by adding a statement that the PGP will provide the generic technical guideline information. The staff finds that the response is acceptable. This RAI is now **Confirmatory Item 13.05.02.01-04.**

Also, FSAR, Section 13.5.2, "Operating and Maintenance Procedures," is incomplete in that it does not describe the type of writer's guide that details the specific methods to be used by the applicant in preparing EOP's based on P-STG's. The staff issued RAI 3033, Question 13.05.02.01-05, to request that the applicant clarify this information. In its response to this RAI, dated October 19, 2009, the applicant committed to revise FSAR Subsection 13.5.2 by adding a statement that a plant-specific writer's guide will be used. The staff finds that the response is acceptable. This RAI is now **Confirmatory Item 13.05.02.01-05.**

Also, FSAR, Section 13.5.2, "Operating and Maintenance Procedures," is incomplete in that it does not describe the plans to develop and to submit a complete EOP verification and validation (V&V) program. The staff issued RAI 3033, Question 13.05.02.01-06 to request that the applicant clarify this information. In its response to this RAI, dated October 19, 2009, the applicant committed to revise FSAR Subsection 13.5.2 by adding a description of a complete EOP V&V program. The staff finds that the response is acceptable. This RAI is now **Confirmatory Item 13.05.02.01-06.**

- STD COL 13.5(7) Classifications of maintenance and other operating procedures.

The applicant provided the following additional information to resolve COL Information Item 13.5(7)1, which addresses the plant procedures of the COL applicant. COL Information Item 13.5(7) states:

The COL Applicant is to describe the classifications of maintenance and other operating procedures, the operating organization group or groups responsible for following each class of procedure, and the general objectives and character of each class and subclass.

The applicant provided the following text to supplement Section 13.5, "Plant Procedures," of the US-APWR DCD, dealing with the training program for plant personnel.

The following maintenance and other operating procedures are classified as General Plant Procedures: Plant Radiation Protection Procedures, Emergency Preparedness Procedures, Instrument Calibration and Test Procedures, Chemical/Radiochemical Control Procedures, Radioactive Waste Management Procedures, Maintenance and Modification Procedures, Material Control Procedures, Plant Security Procedures.

The staff finds this information acceptable because it meets the criteria in NUREG-0800, Chapter 13.5.2.1.

13.5.2.1.5 **Post-Combined License Activities**

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

13.5.2.1.6 **Conclusions**

The staff reviewed the application and checked the referenced DCD. The staff's review confirmed that the applicant addressed the required information relating to operating and EOPs, and there is no outstanding information expected to be addressed in the CPNPP, Units 3 and 4, COL FSAR related to this section.

The staff is reviewing the information in DCD Sections 13.5.2 and 13.5.2.1 under Docket Number 52-021. The results of the staff's technical evaluation of the information related to operating and EOPs incorporated by reference in the CPNPP, Units 3 and 4, COL FSAR will be documented in the staff's SER of the DC application for the US-APWR design. The SER for the US-APWR is not yet complete, and this is being tracked as part of Open Item [1-1]. The staff will update Section 13.5.2.1 of this SE to reflect the final disposition of the DC application.

The staff concludes that, with the exception of the confirmatory items described above, the information pertaining to CPNPP COL FSAR Section 13.5.2 is within the scope of the DC and adequately incorporates by reference Section 13.5.2 of the US-APWR DCD, and is, thus, acceptable.

The results of the staff technical evaluation of the information related to operating and maintenance procedures of the applicant incorporated by reference in the CPNPP COL FSAR will be documented in the SER of the DC application for the US-APWR. The SER for the US-APWR is not yet complete and is being tracked as part of Open Item [1-1]. The staff will update Section 13.5.2 of this SE to reflect the final disposition of the DC application.

In addition, the staff has compared the additional COL information in the application to the relevant NRC regulations, the acceptance criteria defined in NUREG-0800, Section 13.5.2, and other NRC RGs, and concludes that the applicant is in compliance with the NRC regulations. The COL information items involving operating and maintenance procedures have been adequately addressed by the applicant and can be considered to be closed. In conclusion, the applicant has provided sufficient information for satisfying the requirements of 10 CFR 50.34(a)(6) and (10) and 10 CFR 50.34(b)(6)(iv) and (v).

13.5.2.2 Maintenance and Other Operating Procedures

13.5.2.2.1 Introduction

This section discusses maintenance and other operating procedures that will be used by the operating organization (plant staff) to ensure that routine maintenance, test and calibration activities, and control of chemical, radiochemical, and radioactive materials, are conducted in a safe manner.

13.5.2.2.2 Summary of Application

Section 13.5.2.2 of the CPNPP, Units 3 and 4, COL FSAR, Revision 1, incorporates by reference Section 13.5.2.2 of the US-APWR DCD, Revision 2.

In addition, in CPNPP, Units 3 and 4, COL FSAR Section 13.5.2.2, the applicant provided the following:

US-APWR COL Information Item

- STD COL 13.5(7)

The applicant provided additional information in STD COL 13.5(7) to address COL Information Item 13.5(7), which states:

The COL Applicant is to describe the classifications of maintenance and other operating procedures, the operating organization group or groups responsible for following each class of procedure, and the general objectives and character of each class and subclass.

13.5.2.2.3 Regulatory Basis

The regulatory basis of the information incorporated by reference is addressed within the FSER related to the DCD.

In addition, the relevant requirements of the Commission's regulations for maintenance and other operating procedures, and the associated acceptance criteria, are given in draft Section 13.5.2.2, "Maintenance and Other Operating Procedures," of NUREG-0800.

The applicable regulatory requirements and guidance documents for the COL-specific item described above are as follows:

1. 10 CFR 50.34(a)(6) and 10 CFR 50.34(b)(6)(iv).

2. 10 CFR Part 50, Appendix B, Criteria V and VI.
3. Requirements and guidance contained in 10 CFR 50.34(f)(2)(ii); 10 CFR 50.34(f)(3)(i); and TMI Items I.C.1 and I.C.5; regarding the development, verification and validation, implementation, and maintenance of revision of plant procedures.
4. The guidelines in the Regulatory Position section of RG 1.33.
5. The guidelines of ANSI/ANS 3.2 - 1982, Section 5.3.

Specific SRP acceptance criteria acceptable to meet the relevant requirements of the NRC's regulations identified above can be found in Part II of draft Section 13.5.2.2 of NUREG-0800.

13.5.2.2.4 **Technical Evaluation**

The staff reviewed Section 13.5.2.2 of the CPNPP, Units 3 and 4, COL FSAR and checked the referenced DCD to ensure that the combination of the DCD and the information in the COL represent the complete scope of information relating to this review topic.¹ The staff's review confirmed that the information contained in the application and incorporated by reference addresses the required information relating to maintenance and other operating procedures. Section 13.5.2.2 of the US-APWR DCD is being reviewed by the staff under Docket Number 52-021. The staff's technical evaluation of the information incorporated by reference related to maintenance and other operating procedures will be documented in the staff SER of the DC application for the US-APWR design.

The staff reviewed the information contained in the CPNPP, Units 3 and 4, COL FSAR:

US-APWR COL Information Item

- STD COL 13.5(7)

The staff reviewed STD COL 13.5(7) related to COL Information Item 13.5(7) included under Section 13.5.2.2 of the CPNPP, Units 3 and 4, COL FSAR. The applicant replaced the content of DCD Section 13.5.2.2 with a list of maintenance and other operating procedures that are classified as general plant procedures for CPNPP, Units 3 and 4.

13.5.2.2.5 **Post-Combined License Activities**

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

13.5.2.2.6 **Conclusions**

The staff reviewed the application and checked the referenced DCD. The staff's review confirmed that the applicant addressed the required information relating to maintenance and other operating procedures, and there is no outstanding information expected to be addressed in the CPNPP, Units 3 and 4, COL FSAR related to this section.

The staff is reviewing the information in DCD Sections 13.5.2 and 13.5.2.1 under Docket Number 52-021. The results of the staff's technical evaluation of the information related to maintenance and other operating procedures incorporated by reference in the CPNPP, Units 3

and 4, COL FSAR will be documented in the staff's SER of the DC application for the US-APWR design. The SER for the US-APWR is not yet complete, and this is being tracked as part of Open Item [1-1]. The staff will update Section 13.5.2.1 of this SE to reflect the final disposition of the DC application.

13.6 Security

Section 13.6 of this SE contains evaluations associated with the Security Plan, which consists of the Physical Security Plan, the Training and Qualification Plan, and the Safeguards Contingency Plan, and describes the comprehensive physical security program for CPNPP, Units 3 and 4. The staff does not intend to issue Section 13.6 with the SER with open items for CPNPP, Units 3 and 4. Instead, the staff intends to provide this section of the SER at a later time. The staff's review of the Security Plan is currently in progress, and its completion is being tracked as **Open Item 13.6-1**.

13.7 Fitness for Duty

Section 13.7 of this SER contains evaluations associated with the Fitness for Duty (FFD) Program, which is implemented and maintained in two phases; the construction phase program and the operating phase program. The staff does not intend to issue Section 13.7 with the SER with the open items for CPNPP, Units 3 and 4. Instead, the staff intends to provide this section of the SER at a later time. The staff's review of the FFD Program is currently in progress, and its completion is being tracked as **Open Item 13.7-1**.

13.8 Cyber Security

13.8.1 Introduction

Section 13.8 of this SER includes evaluations associated with the Cyber Security Program, which is implemented prior to receipt of fuel on site.

For the Cyber Security Plan (CSP), the NRC evaluates the applicant's plan to provide high assurance that the digital computer and communication systems and networks associated with safety, security, and emergency preparedness (SSEP) functions, as well as support systems and equipment, which if compromised, would adversely impact safety, security, or emergency preparedness functions, are adequately protected against cyber attacks. This requirement is codified in Part 73 of 10 CFR, Section 73.54, "Protection of Digital Computer and Communication Systems and Networks." Applicants must identify those assets that must be protected against cyber attacks; establish, implement, and maintain a cyber security program for the protection of the assets; and ensure that the cyber security program is incorporated into the physical protection program. The cyber security program must implement security controls to protect critical digital assets (CDA) from cyber attacks, apply and maintain defense-in-depth (D3) protective strategies, mitigate the effects of cyber attacks, and ensure that the functions of the CDAs are not adversely impacted by the cyber attacks. The cyber security program must include adequate training, evaluate and manage cyber risk, and ensure that the cyber security performance objectives for CDAs are maintained during modifications. The applicant must establish, implement, and maintain a CSP that implements the cyber security program requirements of 10 CFR 73.54. The applicant must develop and maintain written policies and procedures to implement the CSP. The applicant must 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 applicant must retain all records and supporting technical documentation required to satisfy the recordkeeping requirements of 10 CFR 73.54 until the Commission terminates the license for which the records were developed. The applicant must also maintain the superseded portions of such records for at least three years after the record is superseded, unless otherwise specified by the Commission.

The scope of the review is programmatic. For the purposes of a COL FSAR review, the staff does not review design information contained in the CSP.

13.8.2 Summary of Application

In CPNPP, Units 3 and 4 COL FSAR Section 13.4.1, the applicant provided the following:

Operational programs as defined in SECY-05-0197 (Ref. 13.4-1). This COL item is addressed in Section 13.4, including Table 13.4-201.

Table 13.4-201, Item 15 indicates that the cyber security program will be implemented prior to receipt of fuel on site.

Interface Requirements

None provided.

US-APWR COL Information Item

- STD COL 13.6(1)

Section 13.6 of the CPNPP, Units 3 AND 4 COL FSAR, Revision 1, states:

Replace the first paragraph in DCD Subsection 13.6 with the following:

The Security Plan consists of the physical security plan, the guard training and qualification plan, and the safeguards contingency plan. The Security Plan and Cyber Security Plan are submitted to the NRC as separate licensing documents to fulfill the requirements of 10 CFR 52.79(a)(35) and 10 CFR 52.79(a)(36). The Security Plan and Cyber Security Plan meet the requirements contained in 10 CFR 26 and 10 CFR 73 and will be maintained in accordance with the requirements of 10 CFR 52.98. The Security Plan is categorized as security safeguards information and is withheld from public disclosure pursuant to 10 CFR 73.21.

The applicant provided additional information in STD COL 13.6(1) to address COL Information Item 13.6(1), which states:

The COL Applicant is to develop and provide the plant overall security plan (consisting of the physical security plan, safeguards contingency plan, and the guard training and qualification plan) and the cyber security plan and the implementation schedule for security programs.

13.8.3 Regulatory Basis

The regulatory basis of the information incorporated by reference is addressed within the FSER related to the DCD.

In addition, the relevant requirements of the Commission's regulations for physical security, and the associated acceptance criteria, are given in Section 13.6.1 of NUREG-0800.

The relevant requirement of the Commission's regulations for the cyber security program is given in 10 CFR 73.54, "Protection of digital computer and communication systems and networks". Additional guidance is provided in RG 5.71. The acceptance criteria for the regulatory review are given in Section 13.6.6 of NUREG-0800.

Acceptance criteria are based on meeting the relevant requirements of the following Commission regulations:

1. 10 CFR 73.54.
2. 10 CFR 73.55(a)(1), 10 CFR 73.55(b)(8), and 10 CFR 73.55(m).
3. Appendix G, "Reportable Safeguards Events," to 10 CFR Part 73, "Physical Protection of Plants and Materials."
4. 10 CFR 73.58, "Safety/Security Interface Requirements for Nuclear Power Reactors."

The security plan is considered acceptable if it conforms to RG 5.71, "Cyber Security Programs for Nuclear Facilities."

13.8.4 Technical Evaluation

13.8.4.1 Scope and Purpose

By letter dated December 14, 2009, as supplemented by letter dated July 28, 2010, Luminant submitted its CSP for CPNPP, Units 3 and 4. This CSP describes how Luminant Power, CPNPP, Units 3 and 4, established a cyber security program to achieve high assurance that CPNPP, Units 3 and 4, digital computer and communication systems and networks associated with SSEP functions (hereafter defined as critical digital assets (CDAs)) are adequately protected against cyber attacks up to and including the design basis threat (DBT).

On October 21, 2010, the U.NRC issued SRM, CMWCO-10-0001, "Regulation of Cyber Security at Nuclear Power Plants." This SRM stated the Commission determined that NRC's cyber security rule at 10 CFR 73.54 should be interpreted to include SSCs in the Balance of Plant (BOP) that have a nexus to radiological health and safety at NRC licensed nuclear power plants. Because Luminant's CSP did not include the information described in the Commission's SRM, the staff issued RAI 6013 on August 26, 2011. In its response to RAI 6013, dated September 16, 2011, Luminant revised its CSP to include the following paragraph:

-

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.

In order to comply with the SRM, the CSP deviated from RG 5.71 to clarify that systems or equipment that perform important to safety functions, include SSCs in the BOP that could directly or indirectly affect reactivity and could result in an unplanned reactor shutdown or transient. As explained below, this deviation from RG 5.71 is consistent with Commission policy.

The following actions, described in the CSP, provide high assurance of adequate protection of systems associated with the above functions from cyber attacks:

- implementing and documenting the "baseline" security controls described in Regulatory Position C.3.3 of RG 5.71, and
- implementing and documenting a cyber security program to maintain the established cyber security controls through a comprehensive life cycle approach, as described in Section 4 of [the CSP].

The staff reviewed the CPNPP, Units 3 and 4, CSP against the template in RG 5.71 and the SRM, CMWCO-10 -0001, "Regulation of Cyber Security at Nuclear Power Plants," dated October 21, 2010. On the basis of its review of this section, the staff finds that the CPNPP, Units 3 and 4, CSP appropriately follows the guidance in RG 5.71 and Commission Policy and is acceptable. Accordingly, RAI 6013 is resolved and closed.

13.8.4.2 Performance-Based Requirements

The CPNPP, Units 3 and 4, CSP states the following:

As required by 10 CFR 73.55(a)(1), a licensee must implement the requirements of the rule through its Commission-approved physical security plan, training and qualification plan, safeguards contingency plan, and cyber security plan, referred to collectively as "security plans." As defined in 10 CFR 73.54(b)(3), cyber security is a component of the physical protection program. As such, this plan establishes how CPNPP Units 3 and 4 digital computer and communication systems and networks within the scope of 10 CFR 73.54 will be adequately protected from cyber attacks up to and including the DBT.

On the basis of its review of this section, the staff finds that the CPNPP, Units 3 and 4, CSP appropriately follows the guidance in RG 5.71 and is acceptable.

13.8.4.3 Cyber Security Program Implementation

The applicant committed to implementing its cyber security program by stating the following:

"Luminant established and maintains a cyber security program that complies with the requirements of 10 CFR 73.54(b)(2) and 10 CFR 73.55(b)(8) to protect those systems within the scope of 10 CFR 73.54(a)(1)(i-iv) that can, if compromised, directly or indirectly, have an adverse impact on the SSEP functions of a nuclear facility. This cyber 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 of this document, including the security controls described in Sections 3.1, 3.2, and 3.3, and (2) maintaining the program, as described in Section 4 of [the CSP].

Documentation of the security controls in place for each CDA is available for inspection. Modifications to the cyber security plan are conducted in accordance with 10 CFR 50.54(p). As required by 10 CFR 50.90, "Application for Amendment of License, Construction Permit, or Early Site Permit," Luminant will submit changes that are determined to decrease the effectiveness of this plan to the NRC for approval. Luminant will also report any cyber attacks or incidents at CPNPP Units 3 and 4 to the NRC, as required by 10 CFR 73.71, "Reporting of Safeguards Events," and Appendix G, "Reportable Safeguards Events," to 10 CFR Part 73, "Physical Protection of Plants and Materials."

On the basis of its review of this section, the staff finds that the CPNPP, Units 3 and 4, CSP appropriately follows the guidance in RG 5.71 and is acceptable.

As stated in COLA Revision 2, Part 2 FSAR Table 13.4-201, Item 15 and COLA Part 10, the applicant proposed to implement the following license condition in the Security Program:

- **License Condition (13-4)** - Prior to receipt of fuel on-site in the protected area, the Cyber Security Program will be implemented to meet the requirements of 10 CFR Part 73.54.

The applicant provided a license condition that addressed the implementation of the plant-specific cyber security program. This license condition is consistent with SECY-05-0197, "Review of Operational programs in a Combined License Application and Generic Emergency Planning Inspections, Tests, Analyses, and Acceptance Criteria," dated October 28, 2005, which discusses license conditions for operational programs. Since security is an operational program, the staff finds the applicant's proposed license condition to be acceptable.

In addition, the staff intends to implement the following license condition below:

- **License Condition (13-5)** - No later than 12 months after issuance of the COL, the licensee shall submit to the Director of NRO a schedule that supports planning for, and the conducting of, the NRC inspection of the cyber security program implementation. The schedule shall be updated every 6 months until 12 months before scheduled fuel loading, and every month thereafter until the cyber security program has been fully implemented."

As discussed in SECY-05-0197, "Review of Operational Programs in a Combined License Application and Generic Emergency Planning Inspections, Tests, Analyses, and Acceptance Criteria" a COL applicant should provide schedules for implementation milestones for operational programs. The staff intends to impose this license condition to support its plans to inspect operational programs and their implementation as they are developed to ensure these programs are being implemented consistent with the COLA FSAR. As stated in SECY-05-0197, "...recognizing that maintaining NRC inspection schedules will be critical to ensuring that the Commission has timely information on operational readiness." The staff, in RAI 6123, requested that Luminant include this license condition in the next revision of its COLA.

13.8.4.4 Cyber Security Assessment and Authorization

The CPNPP, Units 3 and 4, CSP states:

Luminant developed and annually reviews and updates the following:

- a formal, documented security planning, assessment and authorization policy that describes the purpose, scope, roles, responsibilities, management commitments, and coordination among Luminant site organizations and Corporate and the implementation of this cyber security program, and the security controls in Appendices B and C to RG 5.71, and
- a formal, documented procedure to facilitate the implementation of the cyber security program and the security assessment.

On the basis of its review of this section, the staff finds that the CPNPP, Units 3 and 4, CSP appropriately follows the guidance in RG 5.71 and is acceptable.

13.8.4.5 Cyber Security Team

The CPNPP, Units 3 and 4, CSP discusses the cyber security team (CST), which should have the authority to conduct an objective assessment of the program, make determinations about the program, implement defense-in-depth protective strategies, and implement the security controls using the process outlined in Regulatory Position C.3.3 of RG 5.71.

The applicant has submitted a CSP for CPNPP, Units 3 and 4, that indicates that the CST should have broad knowledge in the following areas:

- Information and digital system technology.
 - Cyber security.
 - Software development.
 - Communications.
 - Systems administration.
 - Computer engineering.
 - Networking-site and corporate networks.
 - Programmable logic controllers.
 - Control systems.
 - Distributed control systems.
 - Computer systems and databases used in design, operation, and maintenance of CDAs.
- Nuclear facility operations, engineering, and technical specifications.
- Physical security and emergency preparedness systems and programs.

The CPNPP, Units 3 and 4, CSP lists the roles and responsibilities for the CST, which include the following:

- Perform or oversee each stage of cyber security management processes.

- Document all key observations, analyses, and findings during the assessment process so that information can be used in the application of security controls.
- Evaluate or reevaluate assumptions or conclusions about current cyber security threats.
- Evaluate or reevaluate assumptions or conclusions about potential vulnerabilities to, and consequences from, an attack.
- Evaluate or reevaluate assumptions or conclusions about the effectiveness of existing cyber security controls, defensive strategies, and attack mitigation methods, as well as cyber security awareness and training of those working with, or responsible for, CDAs and cyber security controls throughout their system life cycles.
- Confirm information from reviews of CDAs and connected digital devices and associated security controls with physical and electronic validation activities.
- As needed, identify and implement new cyber security controls.
- Document the implementation of alternate or compensating measures in lieu of any security controls (Appendices B and C of RG 5.71).
- Document the basis for not implementing certain controls (Appendix B of RG 5.71).
- Prepare documentation and oversee implementation of security controls (Appendices B and C of RG 5.71).
- Retain all documentation in accordance with 10 CFR 73.55(q) and Section C.5 of RG 5.71.

The CPNPP, Units 3 and 4, CSP notes that security assessment determinations should not be constrained by operational goals.

On the basis of its review of this section, the staff finds that the CPNPP, Units 3 and 4, CSP appropriately follows the guidance in RG 5.71 and is acceptable.

13.8.4.6 Identification of Critical Digital Assets

The CPNPP, Units 3 and 4, CSP describes that the applicant will document the identification of critical digital assets as described in Regulatory Position C.3.1.3 of RG 5.71 and includes the following:

- Identify and document systems, equipment, communication systems, and networks that are associated with the SSEP functions described in 10 CFR 73.54(a)(1), as well as the support systems associated with these SSEP functions. Systems, equipment, and networks associated with SSEP functions are referred to as critical systems (CS). The CST identified CSs by conducting an initial consequence analysis of systems, equipment, communication systems,

and networks to determine those which, if compromised, exploited, or failed, could impact the SSEP functions of the nuclear facility, without taking into account existing mitigating measures.

- Perform a dependency and pathway analysis of any system or equipment associated with SSEP functions to determine whether they are CS.
- Identify and document CDAs that have a direct, supporting, or indirect role in the proper functioning of CS.

The submitted CSP discusses documenting the following:

- Description of CDA.
- Identification of each CDA within each CS.
- Description of CDA function.
- Identification of the consequences to the CS and SSEP functions, if a compromise were to occur.
- Identification of the digital devices having direct or indirect roles in CS function.
- Description of security functional requirements or specifications that includes the following:
 - Security requirements for vendor or developers to maintain system integrity.
 - Secure configuration, installation, and operation of the CDA.
 - Effective use and maintenance of security features or functions.
 - Known vulnerabilities regarding configuration and use of administrative functions.
 - Effective use of user-accessible security features or functions.
 - Methods for user interaction with CDA.
 - User responsibilities in maintaining the security of the CDA.

On the basis of its review of this section, the staff finds that the CPNPP, Units 3 and 4, CSP appropriately follows the guidance in RG 5.71 and is acceptable.

13.8.4.7 Reviews and Validation Testing

The submitted CSP identifies and documents the method to accomplish tabletop reviews and validation testing for each CDA as described in Regulatory Position C.3.1.4 of RG 5.71. For each CDA/CS group, the CST will identify and document:

- A direct/indirect connection pathway.
- Infrastructure interdependencies.

- Application of defensive strategies, including defensive models, security controls, and other defensive measures.

The submitted CSP indicates validation activities are accomplished by performing comprehensive walkdowns, including the following:

- Performing physical inspection of the connections and configuration of each CDA.
- Tracing all communication connections into and out of each CDA to the termination point along all communication pathways for each CDA.
- Examining the physical security of the CDA, including the communication pathways.
- Examining the configuration and assessing the effectiveness of existing security controls along the communication pathways.
- Examining interdependencies for each CDA and trust relationships between CDAs.
- Examining interdependencies with infrastructure support systems emphasizing compromises of electrical power, environmental controls, and fire suppression equipment.
- Examining systems, networks, and communication systems and networks that are potential pathways for attacks.
- Resolving CDA information and configuration discrepancies found in the review, including undocumented or missing connections, and other cyber security-related irregularities associated with the CDA.

The submitted CSP notes that an electronic validation is performed when a physical walkdown inspection is impractical. This electronic validation consists of tracing a communication pathway from start to finish. Use of electronic equipment may prove a better method than a physical walkdown.

On the basis of its review of this section, the staff finds that the CPNPP, Units 3 and 4, CSP appropriately follows the guidance in RG 5.71 and is acceptable.

13.8.4.8 Defense in Depth Protective Strategies

The submitted CSP provides for the implementation of defensive strategies that ensure the capability to detect, respond to, and recover from a cyber attack. The defensive strategies consist of the following:

- Security controls implemented in accordance with Section 3.1 of the CSP and the defensive model outlined in Regulatory Position C.3.2 of RG 5.71.
- D3 measures described in Section 6 of Appendix C of RG 5.71.

- Detailed defensive architecture described in Section 7 of Appendix C of RG 5.71.
- Maintenance of a cyber security program in accordance with Section 4 of Appendix A of RG 5.71.

The submitted CSP notes that the defensive model establishes the logical and physical boundaries between CDAs with similar risks and CDAs with lower security risks.

On the basis of its review of this section, the staff finds that the CPNPP, Units 3 and 4, CSP appropriately follows the guidance in RG 5.71 and is acceptable.

13.8.4.9 Application of Security Controls

The applicant established D3 strategies by implementing and documenting the following:

- Defensive model, described in Regulatory Position C.3.2 of RG 5.71.
- Physical security program and physical barriers.
- Security controls implemented in accordance with Section 3.1 of the CSP.
- Operational and management controls described in Appendix C of RG 5.71.
- Technical controls described in Appendix B of RG 5.71.

The CPNPP, Units 3 and 4, CSP discusses the use of information collected from Section 3.1.4 of the CSP to conduct one or more of the following activities for each CDA:

- Implement all security controls specified in Appendix B of RG 5.71.
- If a security control cannot be applied, implement an alternative control listed in Appendix B of RG5.71 by doing one of the following:
 - Document the basis for employing alternate countermeasures.
 - Perform and document an attack vector and attack tree analysis of the CDA to confirm that the countermeasure provides the same or greater protection as the corresponding control.
 - Implement alternative countermeasures that provide at least the same degree of protection as the corresponding security control in Appendix B of RG 5.71.
- Not implementing controls enumerated in Appendix B of RG 5.71 by performing the following:
 - Performing an attack vector and attack tree analyses of the specific security controls for the CDA that will not be implemented.
 - Documenting that the attack vector does not exist and demonstrating that the control is not necessary.

The submitted CPNPP, Units 3 and 4, CSP notes that, before implementing security controls on a CDA, the potential for adverse impact must be assessed. Specifically, the applicant should consider the following:

- Do not implement a security control if there is a known adverse impact to SSEP functions.
- Use alternate controls to mitigate the lack of the security control, in accordance with Section A.3.1.6 of the CSP.

The submitted CPNPP, Units 3 and 4, CSP includes provisions to verify that CDAs are adequately protected from cyber attacks, up to and including the DBT, and that any identified gaps have been closed. The security program will require the following:

- Performing an effectiveness analysis, as described in Section A.4.1.2 of the CCSP.
- Performing a vulnerability assessment or scans, as described in Section A.4.1.3 of the CSP.
- Implement alternative countermeasures that provide at least the same degree of protection as the corresponding security control.

On the basis of its review of this section, the staff finds that the CPNPP, Units 3 and 4, CSP appropriately follows the guidance in RG 5.71 and is acceptable.

13.8.4.10 Incorporating the Cyber Security Program into the Physical Protection Program

The CPNPP, Units 3 and 4, CSP discusses the following efforts necessary to integrate the management of physical and cyber security:

- Consideration of cyber attacks during the identification of target sets.
- Establishment of site organizational responsibilities for cyber security.
- Documentation of physical and cyber security interdependencies.
- Incorporation of policies and procedures to secure the CDAs from attacks up to and including the DBT.
- Coordination of personnel training.
- Integration and coordination of incident response personnel.
- Training of senior management.
- Performance of periodic exercises of simulated physical and cyber attacks.

The CPNPP, Units 3 and 4, CSP states the cyber security program is reviewed as a component of the physical security program in accordance with the requirements of 10 CFR 73.55(m).

On the basis of its review of this section, the staff finds that the CPNPP, Units 3 and 4, CSP appropriately follows the guidance in RG 5.71 and is acceptable.

13.8.4.11 Policies and Implementing Procedures

The CSP indicates the following:

- Luminant Power, CPNPP, Units 3 and 4, developed and implemented policies and procedures to meet the security control objectives provided in Appendices B and C of RG 5.71.
- Luminant Power, CPNPP, Units 3 and 4, documented, reviewed, approved, issued, used, and revised policies and implementation procedures as described in Section 4 of the CSP.
- Luminant Power, CPNPP, Units 3 and 4, ensured personnel responsible for implementing and overseeing the program report to the site vice president responsible for nuclear plant operation.
- Luminant Power, CPNPP, Units 3 and 4, established specific responsibilities for positions described in Section C.10.10 of Appendix C of RG 5.71.

On the basis of its review of this section, the staff finds that the CPNPP, Units 3 and 4, CSP appropriately follows the guidance in RG 5.71 and is acceptable.

13.8.4.12 Maintaining the Cyber Security Program

The CPNPP, Units 3 and 4, CSP states the following:

This section establishes the programmatic elements necessary to maintain security throughout the life cycle of CDAs. Luminant implemented the elements of this section [of the CSP] to maintain high assurance that CDAs associated with the SSEP functions of CPNPP, Units 3 and 4, are adequately protected from cyber attacks.

Luminant employs a life cycle approach consistent with the controls described in Appendix C to RG 5.71. This approach ensures that the security controls established and implemented for CDAs are adequately maintained to achieve the site's overall cyber security program objectives. For proposed new digital assets, or existing digital assets that are undergoing modification, Luminant implements the process described in Section 4.2 of this plan.

Luminant Power, CPNPP, Units 3 and 4, maintains records in accordance with Section 5 of this plan.

On the basis of its review of this section, the staff finds that the CPNPP, Units 3 and 4, CSP appropriately follows the guidance in RG 5.71 and is acceptable.

13.8.4.12.1 Continuous Monitoring and Assessment

The CPNPP, Units 3 and 4, CSP indicates:

Luminant continuously monitors security controls consistent with Appendix C to RG 5.71. Automated support tools are also used, as appropriate, to accomplish near real-time cyber security management for CDAs. The continuous monitoring program includes the following:

- Ongoing assessments to verify that the security controls implemented for each CDA remain in place throughout the life cycle,
- Verification that rogue assets have not been connected to the infrastructure,
- Periodic assessments of the need for and effectiveness of the security controls identified in Appendices B and C to RG 5.71, and
- Periodic security program review to evaluate and improve the effectiveness of the program.

This element of the program is mutually supportive of the activities conducted to manage configuration changes of CDAs. Continuous monitoring may require periodic updates to the cyber security plan.

On the basis of its review of this section, the staff finds that the CPNPP, Units 3 and 4, CSP appropriately follows the guidance in RG 5.71 and is acceptable.

13.8.4.12.2 Periodic Assessment of Security Controls

The CPNPP, Units 3 and 4, CSP states:

Luminant performs periodic assessments to verify that the security controls implemented for each CDA remain robust, resilient, and effective in place throughout the life cycle. The CST verifies the status of these security controls on at least an annual basis or in accordance with the specific requirements for each security control, as described in Appendices B and C to RG 5.71, whichever is more frequent.

On the basis of its review of this section, the staff finds that the CPNPP, Units 3 and 4, CSP appropriately follows the guidance in RG 5.71 and is acceptable.

13.8.4.12.3 Effectiveness Analysis

The CPNPP, Units 3 and 4, CSP states:

The CST monitors and measures the effectiveness and efficiency of the Cyber Security Program and the 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 up to and including the DBT. Reviews of the security program and controls include, but are not limited to, periodic testing of the security controls, audits of the physical and cyber security programs, safety/security interface

activities; the Testing, Maintenance, and Calibration Program operating experience; and feedback from the NRC and local, State, and Federal law enforcement authorities. The insights gained from these analyses are used to:

- Improve performance and effectiveness of the cyber security program,
- Manage and evaluate risk,
- Improve the effectiveness of implemented security controls described in Appendices B and C to RG 5.7 1,
- Ascertain whether new security controls are required to protect CDAs/CSs from cyber attack,
- To verify that existing security controls are functioning properly and are effective at protecting CDAs/CSs from cyber attack, and
- To facilitate corrective action of any gaps discovered in the security program.

The CST verifies the effectiveness of security controls on at least an annual basis or in accordance with the specific requirements for each security control, as described in Appendices B and C to RG 5.71, whichever is more frequent. The CST reviews records of maintenance and repairs on CDA components to ensure that CDAs which perform security functions are maintained per recommendations provided by the manufacturer.

On the basis of its review of this section, the staff finds that the CPNPP, Units 3 and 4, CSP appropriately follows the guidance in RG 5.71 and is acceptable.

13.8.4.12.4 Vulnerability Assessments and Scans

The CPNPP, Units 3 and 4, CSP states:

Luminant's CST conducts periodic vulnerability scanning assessments of the security controls, defensive architecture and of all CDAs to identify security deficiencies. The CST performs assessments of security controls and scans for vulnerabilities in CDAs and the environment at least every 24 months or as specified in the security controls in Appendices B and C to RG 5.71, whichever is more frequent, and when new vulnerabilities that could potentially affect the effectiveness the security program and security of the CDAs are identified. In addition, the CST employs up-to-date vulnerability scanning tools and techniques that promote interoperability among tools and automate parts of the vulnerability management process.

Luminant Power, CPNPP, Units 3 and 4's CST, analyzes vulnerability assessment and scan reports and addresses vulnerabilities that could be exploited to compromise CSs/CDAs and vulnerabilities that could adversely impact SSEP functions. The CST shares information obtained from the vulnerability assessment and scanning process with appropriate personnel to ensure that similar vulnerabilities that may adversely impact the effectiveness of the security of interconnected or similar CDAs and/or may adversely impact SSEP functions are understood, evaluated, and mitigated.

Luminant ensures that the assessment and scanning process does not adversely impact SSEP functions. If this should occur, CDAs will be removed from service or replicated (to the extent feasible) before assessment and scanning is conducted. If Luminant cannot conduct vulnerability assessments or scanning on a production CDA because of the potential for an adverse impact on SSEP functions, alternate controls (e.g., providing a replicated system or CDA to conduct scanning) will be employed.

On the basis of its review of this section, the staff finds that the CPNPP, Units 3 and 4, CSP appropriately follows the guidance in RG 5.71 and is acceptable.

13.8.4.12.5 Change Control

The CPNPP, Units 3 and 4, CSP states:

Luminant systematically plans, approves, tests, and documents 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. During the operation and maintenance life cycle phases, the program establishes 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.

On the basis of its review of this section, the staff finds that the CPNPP, Units 3 and 4, CSP appropriately follows the guidance in RG 5.71 and is acceptable.

13.8.4.12.6 Configuration Management

The CPNPP, Units 3 and 4, CSP states:

Luminant implemented and documented the configuration management controls described in Appendix C, Section 11 to RG 5.71. Luminant implements a configuration and change management process, as described in Section 4.2 of this plan and Section 11 of RG 5.71, to ensure that the site's Cyber Security Program objectives remain satisfied. Luminant ensures that modifications to CDAs are evaluated in accordance with Section 4.2 of this plan before any modification is implemented so as to maintain the cyber security performance objectives articulated in 10 CFR 73.54(a)(1).

During the operation and maintenance phases of a CDA life cycle, Luminant ensures that changes made are conducted using these configuration management procedures to avoid the introduction of additional vulnerabilities, weaknesses, or risks into the system. This process also ensures timely and effective implementation of each security control specified in Appendices B and C to RG 5.71.

On the basis of its review of this section, the staff finds that the CPNPP, Units 3 and 4, CSP appropriately follows the guidance in RG 5.71 and is acceptable.

13.8.4.12.7 Security Impact Analysis of Changes and Environment

The CPNPP, Units 3 and 4, CSP states:

Luminant's CST performs a security impact analysis in accordance with Section 4.1.2 [of the CSP] before implementing a design or configuration change to a CDA or when changes to the environment occur so as to manage potential risks introduced by the changes. Luminant's CST evaluates, documents, and incorporates 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 other defensive strategy measures, and
- Plant-wide physical and cyber security policies and procedures that secure CDAs from a cyber attack, including attack mitigation and incident response and recovery.

Luminant performs 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 this plan, 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 [of the CSP].

Luminant manages the cyber security of SSEP functions and CDAs through an ongoing evaluation of threats and vulnerabilities and implementation of each of the security controls provided in Appendices B and C to RG 5.71 during all phases of the life cycle. Additionally, Luminant 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.

On the basis of its review of this section, the staff finds that the CPNPP, Units 3 and 4, CSP appropriately follows the guidance in RG 5.71 and is acceptable.

13.8.4.12.8 Security Reassessment and Authorization

The CPNPP, Units 3 and 4, CSP states:

Luminant established, implemented, documented, and maintains 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. The 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 the DBT, using the process discussed in Section 4.1.2 of this plan.

Luminant disseminates, reviews, and updates 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 Luminant entities, compliance to reflect all modifications, and
- A formal, documented procedure to facilitate the implementation of the security reassessment and authorization policy and associated controls.

On the basis of its review of this section, the staff finds that the CPNPP, Units 3 and 4, CSP appropriately follows the guidance in RG 5.71 and is acceptable.

13.8.4.12.9 Updating Cyber Security Practices

The CPNPP, Units 3 and 4, CSP states:

Luminant's CST reviews, updates and modifies CPNPP, Units 3 and 4, 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 security program or security controls provided in Appendices B and C to RG 5.71 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.

On the basis of its review of this section, the NRC staff finds that the CPNPP, Units 3 and 4, CSP appropriately follows the guidance in RG 5.71 and is acceptable.

13.8.4.12.10 Review and Validation Testing of a Modification or Addition of a Critical Digital Asset

The CPNPP, Units 3 and 4, CSP states:

Luminant's CST conducts and documents the results of reviews and validation tests of each CDA modification and addition using the process described in Section 3.1.4 of this plan.

On the basis of its review of this section, the staff finds that the CPNPP, Units 3 and 4, CSP appropriately follows the guidance in RG 5.71 and is acceptable.

13.8.4.12.11 Application of Security Controls Associated with a Modification

The CPNPP, Units 3 and 4, CSP states:

When new CDAs are introduced into the environment, Luminant:

- 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 in a manner consistent with the process described in Section 3.2 of RG 5.71, and
- Confirms that the operational and management controls described in Appendix C of RG 5.71 are applied and effective for the CDA.

When CDAs are modified, Luminant:

- Verifies that the CDA is deployed into the proper level of the defensive model described in Section 3.2 of RG 5.71,
- 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 are implemented in a manner consistent with the process described in Section 3.1.6 of this plan,
- Verifies that the security controls discussed above are implemented effectively, consistent with the process described in Section 4.1.2 of this plan, and
- Confirms that the operational and management controls discussed in Appendix C to RG 5.71 are applied and effective for the CDA.

On the basis of its review of this section, the staff finds that the CPNPP, Units 3 and 4, CSP appropriately follows the guidance in RG 5.71 and is acceptable.

13.8.4.12.12 Cyber Security Program Review

The CPNPP, Units 3 and 4, CSP states:

Luminant's Cyber Security Program establishes 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). Luminant 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; and
- By individuals independent of those personnel responsible for program implementation and management.

Luminant documents the results and recommendations of program reviews, management's findings regarding program effectiveness, and any actions taken as a result of recommendations from prior program review, in a report to the CPNPP, Units 3 and 4, Senior Vice President and Chief Nuclear Officer at least one level higher than the individual having responsibility for day-to-day plant operation. Luminant maintains these reports in an auditable form, available for inspection, and enters findings from program reviews into the site's Corrective Action Program.

On the basis of its review of this section, the staff finds that the CPNPP, Units 3 and 4, CSP appropriately follows the guidance in RG 5.71 and is acceptable.

13.8.4.13 Document Control and Records Retention and Handling

The CPNPP, Units 3 and 4, CSP states:

Luminant established 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. Luminant 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 operating license. Records required for retention include, but are not limited to, all digital records, log files, audit files, and non-digital records that capture, record, and analyze network and CDA events. These records are retained to document access history and discover the source of cyber attacks or other security-related incidents affecting CDAs or SSEP functions or both. Luminant will retain superseded portions of these records for at least three years after the record is superseded, unless otherwise specified by the NRC.

On the basis of its review of this section, the staff finds that the CPNPP, Units 3 and 4, CSP appropriately follows the guidance in RG 5.71 and is acceptable.

13.8.5 Post-Combined License Activities

As stated in COLA Revision 2, Part 2 FSAR Table 13.4-201, Item 15 and COLA Part 10, the applicant proposed to implement the following license condition in the Security Program:

- **License Condition (13-4)** - Prior to receipt of fuel on-site in the protected area, the Cyber Security Program will be implemented to meet the requirements of 10 CFR Part 73.54.

The applicant described the CSP and its implementation in accordance with 10 CFR 73.54. The license condition on operational program implementation includes the cyber security program and its implementation milestones.

In addition, as discussed in RAI 6123, the staff plans to impose the following license condition below:

- **License Condition (13-5)** No later than 12 months after issuance of the COL, the licensee shall submit to the Director of NRO a schedule that supports planning for and conduct of NRC inspection of the cyber security program implementation. The schedule shall be updated every 6 months until 12 months before scheduled fuel loading, and every month thereafter until the cyber security program has been fully implemented.

13.8.6 Conclusions

The staff compared Section 13.4.1 of the FSAR for CPNPP, Units 3 and 4, to the relevant NRC regulations and the criteria in RG 5.71. The staff concluded that the applicant is in compliance with the NRC regulations and guidance.

On the basis of its review, the staff finds that the information in the CPNPP, Units 3 and 4, CSP adequately addresses the relevant requirements and guidance of 10 CFR 73.54 and RG 5.71, respectively. Therefore, the staff finds the information contained in this section acceptable.

The staff's review confirmed that the applicant addressed the relevant information to satisfy the requirements of 10 CFR 73.54. The staff will notify the applicant if the staff expects any additional information to be addressed in the COL FSAR related to this section.