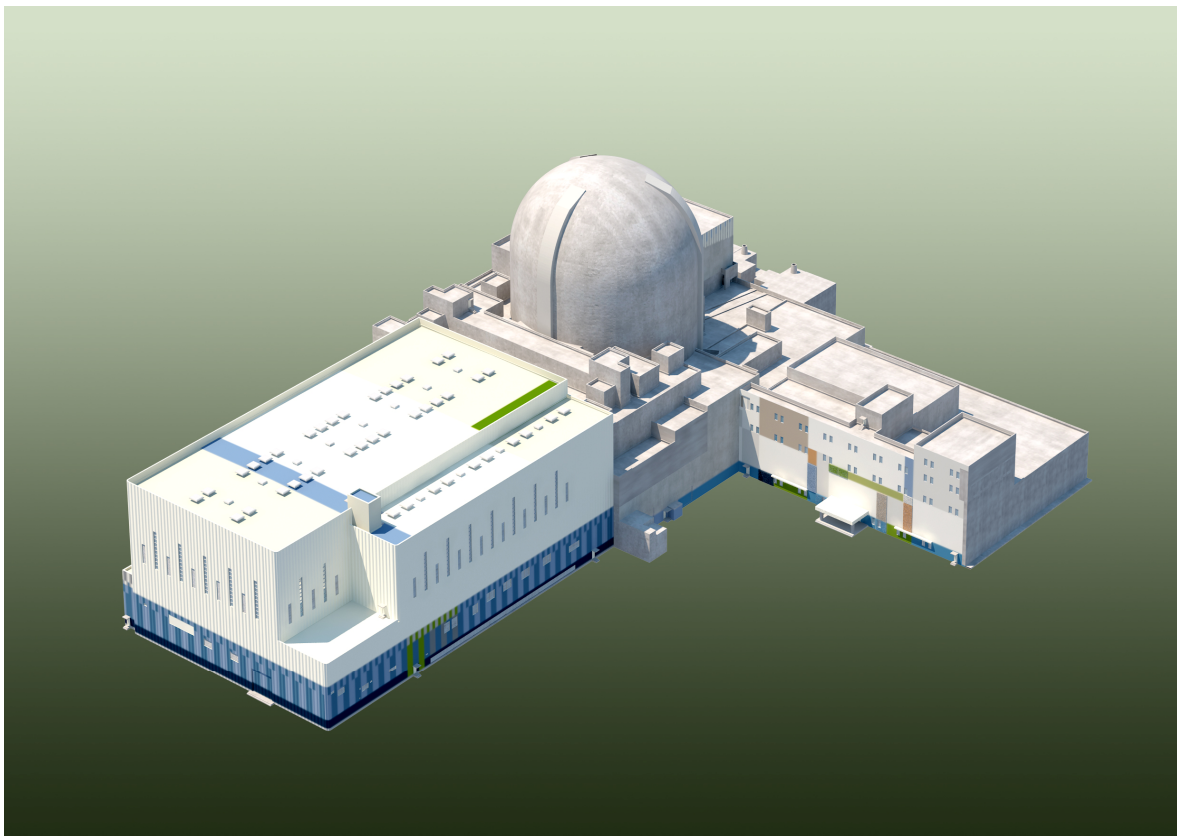


APR1400
DESIGN CONTROL DOCUMENT TIER 2

CHAPTER 13
CONDUCT OF OPERATIONS

APR1400-K-X-FS-13002
REVISION 0
SEPTEMBER 2013



© 2013

KEPCO and KHNP

All Rights Reserved

This document was prepared for the design certification application to the U.S. Nuclear Regulatory Commission and contains technological information that constitutes intellectual property.

Copying, using, or distributing the information in this document in whole or in part is permitted only by the U.S. Nuclear Regulatory Commission and its contractors for the purpose of reviewing design certification application materials. Other uses are strictly prohibited without the written permission of Korea Electric Power Corporation and Korea Hydro & Nuclear Power Co., Ltd.

CHAPTER 13 – CONDUCT OF OPERATIONS

TABLE OF CONTENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>PAGE</u>
CHAPTER 13 – CONDUCT OF OPERATIONS.....		13.0-1
13.0 Conduct of Operations		13.0-1
13.1 Organizational Structure of the Applicant.....		13.1-1
13.1.1 Management and Technical Support Organization		13.1-1
13.1.1.1 Design, Construction, and Operating Responsibilities		13.1-1
13.1.1.2 Organizational Arrangement.....		13.1-1
13.1.1.3 Qualifications		13.1-2
13.1.2 Operating Organization		13.1-2
13.1.2.1 Plant Organization		13.1-2
13.1.2.2 Plant Personnel Responsibilities and Authorities		13.1-2
13.1.2.3 Operating Shift Crews		13.1-3
13.1.3 Qualifications of Nuclear Power Plant Personnel		13.1-4
13.1.3.1 Qualification Requirements.....		13.1-4
13.1.3.2 Qualification of Plant Personnel.....		13.1-4
13.1.4 Combined License Information.....		13.1-4
13.1.5 References		13.1-6
13.2 Training.....		13.2-1
13.2.1 Plant Staff Training Program.....		13.2-1
13.2.1.1 Program Description.....		13.2-1
13.2.1.2 Coordination with Preoperational Tests and Fuel Loading.....		13.2-1
13.2.2 Applicable Nuclear Regulatory Commission Documents.....		13.2-2
13.2.3 Combined License Information.....		13.2-2
13.2.4 References		13.2-2
13.3 Emergency Planning.....		13.3-1
13.3.1 Combined License Application and Emergency Plan Content		13.3-4

APR1400 DCD TIER 2

13.3.2	Emergency Plan Considerations for Multi-Unit Sites	13.3-5
13.3.3	Emergency Planning Inspections, Tests, Analyses, and Acceptance Criteria.....	13.3-5
13.3.4	Combined License Information.....	13.3-5
13.3.5	References	13.3-6
13.4	Operational Program Implementation	13.4-1
13.4.1	Combined License Information.....	13.4-1
13.4.2	References	13.4-1
13.5	Plant Procedures	13.5-1
13.5.1	Administrative Procedures	13.5-1
	13.5.1.1 Administrative Procedures-General	13.5-1
13.5.2	Operating and Maintenance Procedures.....	13.5-1
	13.5.2.1 Operating and Emergency Operating Procedures	13.5-1
	13.5.2.2 Maintenance and Other Operating Procedures.....	13.5-2
13.5.3	Combined License Information.....	13.5-3
13.5.4	References	13.5-4
13.6	Physical Security	13.6-1
13.6.1	Physical Security – Combined License	13.6-1
13.6.2	Physical Security – Design Certification.....	13.6-1
13.6.3	Physical Security – Early Site Permit.....	13.6-2
13.6.4	Access Authorization – Operational Program	13.6-2
13.6.5	Not Used.....	13.6-2
13.6.6	Cyber Security Plan.....	13.6-2
13.6.7	Combined License Information.....	13.6-2
13.7	Fitness for Duty	13.7-1
13.7.1	Combined License Information.....	13.7-1
13.7.2	Reference.....	13.7-1

APR1400 DCD TIER 2

ACRONYM AND ABBREVIATION LIST

CFR	Code of Federal Regulations
COL	Combined License
EOF	Emergency Operation Facility
ERDS	Emergency Response Data System
HVAC	Heating, Ventilation, and Air Conditioning
ITAAC	Inspections, Tests, Analyses, and Acceptance Criteria
MCR	Main Control Room
NUREG	U.S. Nuclear Regulatory Commission Regulation
OSC	Operational Support Center
RG	Regulatory Guide
SPDS	Safety Parameter Display System
SRP	Standard Review Plan
TSC	Technical Support Center

APR1400 DCD TIER 2

CHAPTER 13 – CONDUCT OF OPERATIONS

13.0 Conduct of Operations

This chapter provides information related to the preparations and plans for the design, construction, and operation of the APR1400 plant. Its purpose is to provide adequate assurance that the combined license (COL) applicant establishes and maintains a staff of adequate size and technical competence and that operating plans followed by the licensee are adequate to protect public health and safety (References 1 through 5).

APR1400 DCD TIER 2

13.1 Organizational Structure of the Applicant

13.1.1 Management and Technical Support Organization

The COL applicant is responsible for developing the management and technical support organizational structure. 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 is to be directed to activities such as the facility design, design review, design approval, construction management, testing, and operation of the plant (COL 13.1(1)).

13.1.1.1 Design, Construction, and Operating Responsibilities

The COL applicant is to develop a description of its experience in the design, construction, and operation of nuclear power plants and in activities of similar scope and complexity (COL 13.1(2)). 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 to reflect the added functional responsibilities within the nuclear power plant (COL 13.1(3)).

13.1.1.2 Organizational Arrangement

The COL applicant is to develop a description of the organizational arrangement. The description includes organizational charts that include the current headquarters and engineering structure and any planned modifications or additions functional responsibilities associated with the addition of a nuclear plant to the applicant's power generation capacity. The description shows how the responsibilities are delegated and assigned or expected to be assigned to each of the working or performance-level organizational units that are identified to implement these responsibilities. The organizational charts include the current corporate structure and the working- or performance-level organizational units that provide technical support for the operation (COL 13.1(4)).

The information also includes a description of the activity and an organizational description that includes lines of authority and responsibilities for the project, the number of persons

APR1400 DCD TIER 2

assigned to the project, and qualifications for the principal management positions for the project.

13.1.1.3 Qualifications

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 described in the organizational arrangement (COL 13.1(5)). For identified positions or classes of positions that have functional responsibilities for other than the identified application, the applicant is to describe the expected proportion of time assigned to the other activities.

13.1.2 Operating Organization

The COL applicant is to develop a description of the structure, functions, and responsibilities of the onsite organization established to operate and maintain the plant (COL 13.1(6)).

13.1.2.1 Plant Organization

The COL applicant is to provide an organizational chart showing the title of each position, minimum number of persons to be assigned to duplicate positions, number of operating shift crews, and positions that require reactor operator and senior reactor operator licenses (COL 13.1(7)).

13.1.2.2 Plant Personnel Responsibilities and Authorities

The COL applicant is to provide the following organizational information (COL 13.1(8)).

- a. Description of the functions, responsibilities, and authorities of the following plant positions or their equivalents:
 - 1) Plant managers
 - 2) Operations supervisors

APR1400 DCD TIER 2

- 3) Operating shift crew supervisors
 - 4) Shift technical advisors
 - 5) Licensed operators
 - 6) Non-licensed operators
 - 7) Technical supervisors
 - 8) Radiation protection supervisors
 - 9) I&C maintenance supervisors
 - 10) Equipment maintenance supervisors
 - 11) Fire protection supervisors
 - 12) QA supervisors (when part of the plant staff)
- b. The description of the line of succession of authority and responsibility for the station operation in the event of unexpected temporary contingencies, and the delegation of authority.

13.1.2.3 Operating Shift Crews

The COL applicant is to develop a description of the position titles, applicable operator licensing requirements for each, and the minimum number of personnel planned for each shift for all combinations of units proposed to be at the station in either operating or cold shutdown mode. The COL applicant is also to develop the description of shift crew staffing plans unique to refueling operations (COL 13.1(9)).

APR1400 DCD TIER 2

13.1.3 Qualifications of Nuclear Power Plant Personnel

13.1.3.1 Qualification Requirements

The COL applicant is to provide the education, training, and experience requirements for each management, operating, technical, and maintenance position category in the operating organization (COL 13.1(10)).

13.1.3.2 Qualification of Plant Personnel

As applicable, the COL applicant is to provide the qualification requirements of the initial appointees to plant positions for key plant managerial and supervisory personnel through the shift supervisory level (COL 13.1(11)).

13.1.4 Combined License Information

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 the qualifications of personnel. The COL applicant is to be directed to activities such as the facility design, design review, design approval, construction management, testing, and operation of the plant.

COL 13.1(2) The COL applicant is to develop a description of experience in the design, construction, and operation of nuclear power plants and experience in activities of similar scope and complexity.

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 to reflect the added functional responsibilities with the nuclear power plant.

COL 13.1(4) The COL applicant is to develop a description of the organizational arrangement. The description is to include organizational charts reflecting the current headquarters and engineering structure and any

APR1400 DCD TIER 2

planned modifications and additions to reflect the added functional responsibilities associated with the addition of the nuclear plant to the applicant's power generation capacity. The description shows how these responsibilities are delegated and assigned or expected to be assigned to each of the working or performance-level organizational units identified to implement these responsibilities. The description includes organizational charts reflecting the current corporate structure and the working- or performance-level organizational units that provide technical support for the operation.

- COL 13.1(5) The COL applicant is to develop the description of the general qualifications in terms of educational background and experience for positions or classes of positions described in the organizational arrangement.
- COL 13.1(6) The COL applicant is to develop a description of the structure, functions, and responsibilities of the onsite organization established to operate and maintain the plant.
- COL 13.1(7) The COL applicant is to provide an organizational chart showing the title of each position, minimum number of persons to be assigned to duplicate positions, number of operating shift crews, and positions that require reactor operator and senior reactor operator licenses.
- COL 13.1(8) The COL applicant is to provide organizational information such as the functions, responsibilities, and authorities of the plant position. The COL applicant is to develop a description of the line of succession of authority and responsibility for overall station operation in the event of unexpected temporary contingencies, and the delegation of authority.
- COL 13.1(9) The COL applicant is to develop a description of the position titles, applicable operator licensing requirements for each, and the minimum numbers of personnel planned for each shift for all combinations of units proposed to be at the station in either operating or cold shutdown mode. The COL applicant is also to develop the description of shift crew staffing plans unique to refueling operations.

APR1400 DCD TIER 2

COL 13.1(10) The COL applicant is to provide a description of the education, training, and experience requirements for each management, operating, technical, and maintenance position in the operating organization.

COL 13.1(11) The COL applicant is to provide the qualification requirements of the initial appointees to plant positions for key plant managerial and supervisory personnel through the shift supervisory level.

13.1.5 References

1. 10 CFR 52, "Early Site Permits; Standard Design Certifications; and Combined Licenses for Nuclear Power Plants," U.S. Nuclear Regulatory Commission.
2. 10 CFR 50, "Domestic Licensing of Production and Utilization Facilities," U.S. Nuclear Regulatory Commission.
3. NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants," U.S. Nuclear Regulatory Commission.
4. NRC RG 1.206, "Combined License Applications for Nuclear Power Plants (LWR Edition)," U.S. Nuclear Regulatory Commission, June 2007.
5. NUREG-0711, Rev. 3, "Human Factor Engineering Program Review Model," U.S. Nuclear Regulatory Commission, November 2012.

APR1400 DCD TIER 2

13.2 Training

The COL applicant is to develop the description and schedule of the training program for licensed reactor operators and non-licensed plant staff (COL 13.2(1)).

13.2.1 Plant Staff Training Program

13.2.1.1 Program Description

A complete generic training program description for use with COL applications is provided in NEI 06-13A, "Template for an industry Training Program Description," Revision 2. The document reflects guidance provided by the NRC and industry-NRC discussions on training-related issues.

The COL applicant is to develop a site-specific training program by using NEI 06-13A as the template for the basic structure and content (COL 13.2(2)).

13.2.1.1.1 Licensed Plant Staff Training Program

The COL applicant is to develop a licensed plant staff training program by using NEI 06-13A as the template for the basic structure and content (COL 13.2(3)).

13.2.1.1.2 Non-licensed Plant Staff Training Program (to be verified during construction)

The COL applicant is to develop a non-licensed plant staff training program by using NEI 06-13A as the template for the basic structure and content (COL 13.2(4)).

13.2.1.2 Coordination with Preoperational Tests and Fuel Loading

The COL applicant is to develop training programs. The programs include a chart that 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 (COL 13.2(5)).

APR1400 DCD TIER 2

13.2.2 Applicable Nuclear Regulatory Commission Documents

The COL applicant is to determine the extent of the NRC guidance that is applicable to the facility training program or the justification of exceptions (COL 13.2(6)).

13.2.3 Combined License Information

COL 13.2(1) The COL applicant is to develop the description and schedule of the training program for licensed reactor operators and non-licensed plant staff.

COL 13.2(2) The COL applicant is to develop the site-specific training program by using NEI 06-13A as the template for the basic structure and content.

COL 13.2(3) The COL applicant is to provide a licensed plant staff training program in accordance with NUREG-0800, Subsection 13.2.1.I.3 (Reference 3).

COL 13.2(4) The COL applicant is to provide a non-licensed plant staff training program in accordance with NUREG-0800, Subsection 13.2.2.I.3.

COL 13.2(5) The COL applicant is to develop training programs. The programs are to include a chart that 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.

COL 13.2(6) The COL applicant is to determine the extent of the NRC guidance that is applicable to the facility training program or the justification of exceptions.

13.2.4 References

1. NRC RG 1.8, Rev. 3, "Qualification and Training of Personnel for Nuclear Power Plants," U.S. Nuclear Regulatory Commission, May 2000.
2. 10 CFR 55, "Operators' Licenses," U.S. Nuclear Regulatory Commission.

APR1400 DCD TIER 2

3. NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants," U.S. Nuclear Regulatory Commission.

13.3 Emergency Planning

The COL applicant is to develop the emergency planning. The design features, facilities, functions, and equipment necessary for emergency planning are considered in the design bases for the standard plant (References 1 through 5). Details of the features that are related to the design are described in Section 13.3. The COL applicant is to develop the interfaces of design features with site-specific designs and site parameters (COL 13.3(1)).

Technical Support Center

The technical support center (TSC) is an onsite facility that provides plant management and technical support to the plant operations personnel during emergency conditions. The technical data displays and plant records are available in the TSC to assist in the diagnosis of abnormal plant conditions and any significant release of radioactivity to the environment.

The TSC provides the following functions:

- a. The TSC provides plant management and technical support for plant operations personnel during emergency conditions.
- b. The TSC relieves the reactor operators of peripheral duties and communications not related directly to reactor system manipulations during emergency conditions.
- c. The TSC performs a function of the primary onsite communication center during emergency conditions.
- d. The TSC technical data system receives, stores, processes, and displays plant information as needed to perform the TSC function. The data available for display in the TSC are sufficient for plant management, engineering, and technical personnel assigned to the TSC to aid the MCR operators in emergency conditions.
- e. The TSC provides telephones and facsimile machines, including land-line, cellular, and satellite communication capabilities, which use multiple methods of telecommunication including private and public lines and satellite communications. Communication systems are addressed in Subsection 9.5.2.

APR1400 DCD TIER 2

- f. The TSC is close to the MCR in the auxiliary building. The walking time from the TSC to the MCR does not exceed 2 minutes.
- g. The TSC is sized to provide working space, without crowding, for the personnel assigned to the TSC at the maximum level of occupancy. The working space is approximately 7 m² (75 ft²) per person. The TSC is sized for a minimum of 25 persons, including five NRC persons. It provides the necessary space to maintain and repair TSC equipment and is sufficient for storage of plant records and historical data.
- h. TSC personnel are protected from radiological hazards, including direct radiation and airborne radioactivity from in-plant sources under accident conditions, to the same degree as control room personnel.
 - 1) TSC is within the control room envelope (CRE), which maintains habitability during normal, off-normal, and emergency conditions as described in Subsection 6.4.2.
 - 2) A detailed description of CRE habitability, including radiological protective provisions, is provided in Section 6.4. The control room air conditioning system is described in Subsection 9.4.1.

Operations Support Center

The operational support center (OSC) is an onsite facility that is separated from the MCR and the TSC. The OSC is located in the compound building. Direct communications are established with the MCR and the TSC so that the personnel reporting to the OSC can be assigned to duties in support of emergency operations.

Emergency Operations Facility

The emergency operations facility (EOF) supports the management of the licensee emergency response such as coordination with federal, state, and local officials, coordination of radiological and environmental assessments, and determination of recommended public protective actions.

APR1400 DCD TIER 2

The EOF is a licensee-controlled and operated offsite support center. The primary functions of the EOF are as follows:

- a. Management of overall licensee emergency response
- b. Coordination of radiological and environmental assessment
- c. Determination of recommended public protective actions
- d. Coordination of emergency response activities with federal, state, and local agencies

The EOF is staffed to manage licensee resources and to provide continuous evaluation and coordination of licensee activities during and after an accident.

The EOF technical data system is designed to receive, store, process, and display information to perform assessments of the actual and potential onsite and offsite environmental consequences of an emergency condition. Data on the general condition of the plant are available for display in the EOF.

Emergency Response Data System

The emergency response data system (ERDS) is a real-time electronic data transmission system to the NRC operations center that provides a set of parameters from the onsite computer system in the event of an emergency. The ERDS transmits information to allow the NRC to provide advice and support to the licensee, state, and local authorities, and other federal officials. The ERDS satisfies the requirements in 10 CFR 50, Appendix E.

Voice and Data Communication

A voice and data communication system establishes the interface and link with the TSC and the EOF and allows data exchange with the plant.

APR1400 DCD TIER 2

Safety Parameter Display System

The safety parameter display system (SPDS) provides a display of plant parameters that an operator in the MCR, TSC, and EOF can use to assess the safety status of the APR1400.

The primary function of the SPDS is to help operating personnel in the MCR make quick assessments of the plant safety status.

Duplication of the SPDS displays in the TSC and the EOF improves the exchange of information between these facilities and the MCR and assists corporate and plant management in the decision-making process.

The SPDS is operated during normal operations and during all classes of emergencies.

The SPDS has sufficient flexibility to allow future modifications, such as the capability to handle operator interaction and diagnostic analysis.

The SPDS in the MCR functions during all events expected to occur during the life of a plant, taking into account the human-system interface.

The post-accident sampling system (PASS) is provided for emergency response and is addressed in Subsection 9.3.2 and Section 12.3.

Decontamination Facilities

Decontamination facilities are provided to remove or reduce radioactive contaminants from plant equipment, protective clothing, and personnel. Personnel decontamination areas are located in the compound building, and equipment decontamination facilities are located in the hot machine shop. Hot laundry facilities are located in the compound building. Personnel and equipment decontamination facilities are described in Section 12.3.

13.3.1 Combined License Application and Emergency Plan Content

The COL applicant is to develop a comprehensive emergency plan. The plan is developed as a physically separate document and includes copies of letters of agreement (or other

APR1400 DCD TIER 2

certifications) from state and local governmental agencies with emergency planning responsibilities (COL 13.3(2)).

The COL applicant is to address an emergency classification and action level scheme as required by 10 CFR 50.47(b)(4) (COL 13.3(3)). The plan includes security-related aspects of an emergency plan (COL 13.3(4)).

13.3.2 Emergency Plan Considerations for Multi-Unit Sites

The COL applicant is to develop an emergency plan for a multi-unit site depending on the location of the new reactor relative to an operating reactor site with an existing emergency plan (COL 13.3(5)).

13.3.3 Emergency Planning Inspections, Tests, Analyses, and Acceptance Criteria

The COL applicant is to develop emergency planning inspections, tests, analyses, and acceptance criteria (COL 13.3(6)).

13.3.4 Combined License Information

COL 13.3(1) The COL applicant is to develop the interfaces of design features with site-specific designs and site parameters.

COL 13.3(2) The COL applicant is to develop a comprehensive emergency plan. The plan is developed as a physically separate document and includes copies of letters of agreement (or other certifications) from state and local governmental agencies with emergency planning responsibilities.

COL 13.3(3) The COL applicant is to address an emergency classification and action level scheme as required by 10 CFR 50.47(b)(4).

COL 13.3(4) The COL applicant is to develop the security-related aspects of an emergency plan.

APR1400 DCD TIER 2

COL 13.3(5) The COL applicant is to develop a 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) The COL applicant is to develop emergency planning inspections, tests, analyses, and acceptance criteria.

13.3.5 References

1. 10 CFR 50, Appendix E, “Emergency Planning and Preparedness for Production and Utilization Facilities,” U.S. Nuclear Regulatory Commission.
2. NRC RG 1.101, Rev. 5, “Emergency Planning and Preparedness for Nuclear Power Reactors,” U.S. Nuclear Regulatory Commission, June 2005.
3. NUREG-0654/FEMA-REP-1, Rev, 1, “Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants,” U.S. Nuclear Regulatory Commission, November 1980 (supplemented by March 2002 Addenda).
4. SECY-05-0197, “Review of Operational Programs in a Combined License Application and Generic Emergency Planning Inspections, Tests, Analyses, and Acceptance Criteria,” U.S. Nuclear Regulatory Commission, October 2005.
5. SRM-SECY-05-0197,”Staff Requirements - SECY-05-0197-Review of Operational Programs in a Combined License Application and Generic Emergency Planning Inspections, Tests, Analyses, and Acceptance Criteria,” U.S. Nuclear Regulatory Commission, February 2006.
6. NUREG-0696, “Functional Criteria for Emergency Response Facilities,” U.S. Nuclear Regulatory Commission, February 1981.

APR1400 DCD TIER 2

13.4 Operational Program Implementation

The COL applicant is to develop a list of operational programs, a description of the operational programs, and the associated implementation milestones (COL 13.4(1)).

13.4.1 Combined License Information

COL 13.4(1) The COL applicant is to develop operational programs and provide schedules for implementation of the programs, as defined in SECY-05-0197 (Reference 1). The COL applicant is to provide commitments for the implementation of operational programs that are required by regulation. In some instances, the programs may be implemented in phases, where practical, and the applicant is to include the phased implementation milestones.

COL 13.4(2) The COL applicant is responsible for developing a leakage monitoring and prevention program for the systems, as specified in Subsection 5.5.2 in Chapter 16 Technical Specifications. The leakage monitoring and prevention program is to provide suitable methods and acceptance criteria as defined in NUREG-0737 Item III.D.1.1 (Reference 2).

13.4.2 References

1. SRM-SECY-05-0197, "Staff Requirements-SECY-05-0197-Review of Operational Programs in a Combined License Application and Generic Emergency Planning Inspections, Tests, Analyses, and Acceptance Criteria," U.S. Nuclear Regulatory Commission, February 2006.
2. NUREG-0737, "Clarification of TMI Action Plan Requirements," U.S. Nuclear Regulatory Commission, November 2006.

APR1400 DCD TIER 2

13.5 Plant Procedures

The COL applicant is to describe the administrative and operating procedures that the operating organization (plant staff) use to provide reasonable assurance that routine operating, off-normal, and emergency activities are conducted in a safe manner. This section is not expected to include detailed written procedures. The COL applicant is to provide a brief description of the nature and content of the procedures and a schedule for the preparation of appropriate written administrative procedures (Reference 1, 2) (COL 13.5(1)).

13.5.1 Administrative Procedures

The COL applicant is to develop a description of administrative procedures that provide administrative control over activities that are important to safety for operation of the facility. NRC RG 1.33 (Reference 1) contains guidance on facility administrative policies and procedures. The COL applicant is to determine whether the portions of NRC RG 1.33 applicable to plant procedures are followed. If the guidance is not followed, the COL applicant is to develop a description of alternative methods that will be used and the manner of implementing them (COL 13.5(2)).

13.5.1.1 Administrative Procedures-General

Administrative procedures provide administrative controls for procedures and define and provide controls for operational activities of the plant staff.

13.5.2 Operating and Maintenance Procedures

The COL applicant is to develop operating and maintenance procedures.

13.5.2.1 Operating and Emergency Operating Procedures

This subsection describes primarily the procedures that licensed operators perform in the MCR, which are to be developed by the COL applicant. Categories such as the procedure classification, operating procedure program, and emergency operating procedure program are included but are not necessarily the basis for classifying these procedures.

APR1400 DCD TIER 2

13.5.2.1.1 Procedure Classification

The COL applicant is to describe the different classifications of procedures the operators use in the MCR and locally in the plant for plant operations. The COL applicant is to identify the group in the operating organization that is responsible for maintaining the procedures and is to describe the general format and content of the different classifications (COL 13.5(3)). Each applicant's procedures do not necessarily conform precisely to the same classification because the objective is to provide reasonable assurance that procedures are available to the plant staff to accomplish the functions in NRC RG 1.33.

13.5.2.1.2 Operating Procedure Program

The COL applicant is to provide a program for a developing operating procedures (COL 13.5(4)). The applicant is to develop target dates for completion of program elements.

13.5.2.1.3 Emergency Operating Procedure Program

The COL applicant is to provide a program for developing and implementing emergency operating procedures (COL 13.5(5)). The applicant also is to develop target dates for completion and submittal to the NRC (as required) of program elements. The procedure-generation package includes the following:

- a. Plant-specific technical guidelines
- b. Plant-specific writer's guide
- c. Description of the program for verification and validation
- d. Description of the program for training operators

13.5.2.2 Maintenance and Other Operating Procedures

The COL applicant is to describe how other operating and maintenance procedures are classified, which group or groups within the operating organization have responsibility for

APR1400 DCD TIER 2

following each class of procedures, and the general objectives and character of each class and subclass (COL 13.5(6)).

13.5.3 Combined License Information

- COL 13.5(1) The COL applicant is to describe the administrative and operating procedures that the operating organization (plant staff) use to provide reasonable assurance that routine operating, off-normal, and emergency activities are conducted in a safe manner. The COL applicant is to provide a brief description of the nature and content of the procedures and a schedule for the preparation of appropriate written administrative procedures (Reference 1, 2).
- COL 13.5(2) The COL applicant is to develop a description of administrative procedures that provide administrative control over activities that are important to safety for operation of the facility. NRC RG 1.33 (Reference 1) contains guidance on facility administrative policies and procedures. The COL applicant is to determine whether the portions of NRC RG 1.33 applicable to plant procedures are followed. If the guidance is not followed, the COL applicant is to develop a description of alternative methods that will be used and the manner of implementing them.
- COL 13.5(3) The COL applicant is to describe the different classifications of procedures the operators use in the MCR and locally in the plant for plant operations. The COL applicant is to identify the group within the operating organization responsible for maintaining the procedures and describe the general format and content of the different classifications.
- COL 13.5(4) The COL applicant is to provide a program for developing operating procedures.
- COL 13.5(5) The COL applicant is to provide a program for developing and implementing emergency operating procedures.

APR1400 DCD TIER 2

COL 13.5(6) The COL applicant is to describe how other operating and maintenance procedures are classified, which group or groups within the operating organization have the responsibility for following each class of procedures, and the general objectives and character of each class and subclass.

13.5.4 References

1. NRC RG 1.33, Rev. 2, "Quality Assurance Program Requirements (Operation)," U.S. Nuclear Regulatory Commission, February 1978.
2. ANSI 18.7-1976/ANS-3.2, "Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants," American Nuclear Society, 1994.
3. NUREG-0899, "Guidelines for the Preparation of Emergency Operating Procedures," U.S. Nuclear Regulatory Commission, 1982.
4. 10 CFR 50.34(F)(2)(ii), "Code of Federal Regulations: Energy," U.S. Nuclear Regulatory Commission, 1993.
5. NUREG-0737, "Clarification of TMI Action Plan Requirements," U.S. Nuclear Regulatory Commission, 1980.

APR1400 DCD TIER 2

13.6 Physical Security

The security plans required by 10 CFR 52.79(a)(35) and 10 CFR 52.79(a)(36) are to be submitted to the NRC by the combined license (COL) applicant as stated in Subsection 13.6.1. The plans include a physical security plan, a safeguards contingency plan, a training and qualification plan and a cyber-security plan. The plans are to meet 10 CFR 50.54(p) requirements.

The APR1400 Threat Assessment Report provides details on the systems, structures, and components (SSCs) that require protection as vital equipment, as defined in 10 CFR 73.2. The document is categorized as a security safeguards information (SGI) and is withheld from public disclosure pursuant to 10 CFR 73.21. The report is to be submitted to the NRC as a separate licensing document within 7 months after the acquisition of an SGI program. Security communications are described in Subsection 9.5.2.2.2.2. Security lighting is described in Subsection 9.5.3.2.

13.6.1 Physical Security – Combined License

The COL applicant is to develop a physical security plan, training and qualification plan, and safeguards contingency plan. The COL applicant is to address site-specific information related to the physical security, contingency, and guard training and qualification plans. These documents are to be categorized as safeguards information and are withheld from public disclosure pursuant to 10 CFR 73.21. The COL applicant is to address site-specific physical security inspections, tests, analyses, and acceptance criteria (ITAACs) as applicable (COL 13.6(1)).

13.6.2 Physical Security – Design Certification

This Design Control Document (DCD) contains physical security elements and information needed for review. These elements, because of their inherent nature, are included within the physical design of the power reactor and supporting systems. These physical security elements are designed, located, and constructed to support the protection of equipment essential to the safe operation and shutdown of the power reactor. A list of vital equipment and vital areas is to be contained in the APR1400 Threat Assessment Report. The physical security hardware ITAACs are contained in Section 2.12 of Tier 1 DCD.

APR1400 DCD TIER 2

13.6.3 Physical Security – Early Site Permit

The applicant for early site permit planning is to find the physical security information needed for the application contained in the DCD. A typical site layout plan is included in Chapter 1 and a list of vital equipment and vital areas is to be contained in the APR1400 Threat Assessment Report. The physical security hardware ITAACs are contained in Section 2.12 of Tier 1 DCD.

13.6.4 Access Authorization – Operational Program

The COL applicant is to develop an access authorization program that will meet the requirements of 10 CFR 73.56, and compliance with the requirement is to be specified in the physical security plan (COL 13.6(2)).

13.6.5 Not Used

13.6.6 Cyber Security Plan

The COL applicant is to develop a cyber-security plan and implementation program in accordance with 10 CFR 73.54. The plan document is to be categorized as security-related information and is to be withheld from public disclosure pursuant to 10 CFR 2.390(d)(1) (COL 13.6(3)).

13.6.7 Combined License Information

COL 13.6(1) The COL applicant is to develop a physical security plan, training and qualification plan, and safeguards contingency plan. The COL applicant is to address site-specific information related to the physical security, contingency, and guard training and qualification plans. These documents are to be categorized as safeguards information and are withheld from public disclosure pursuant to 10 CFR 73.21. The COL applicant is to address site-specific physical security ITAACs as applicable.

APR1400 DCD TIER 2

- COL 13.6(2) The COL applicant is to develop an access authorization program that meets the requirements of 10 CFR 73.56, and compliance with the requirement is to be specified in the physical security plan.
- COL 13.6(3) The COL applicant is to develop a cyber-security plan and implementation program in accordance with 10 CFR 73.54. The plan document is to be categorized as security-related information and is to be withheld from public disclosure pursuant to 10 CFR 2.390(d)(1).

APR1400 DCD TIER 2

13.7 Fitness for Duty

The COL applicant is to develop a fitness-for-duty program required by 10 CFR 26 and its implementation for the operating plant (COL 13.7(1)). The COL application also includes a description of the applicant's fitness-for-duty programs during construction (Reference 1).

13.7.1 Combined License Information

COL 13.7(1) The COL applicant is to develop the description of the fitness-for-duty programs during construction and for the operating plant.

13.7.2 Reference

1. 10 CFR 26, "Fitness for Duty Programs," U.S. Nuclear Regulatory Commission.