

C.III.2 Information Needed for a Combined License Application Referencing a Certified Design and an Early Site Permit

C.III.2.1 Introduction

COL applicants who have referenced a certified design and an ESP will have a significant portion of the facility reviewed by the NRC before applying for a COL. The remaining portions of the facility design and operation that require review will constitute the information contained in the FSAR of the COL application. This section of the regulatory guide identifies the generic information that should be submitted with a COL application that references a certified design and an ESP.

Part I of this guide discusses the information that should be included in a COL application that does not reference either a certified design or an ESP. The information contained in this section is consistent with Part I and, in some sections, duplicates the applicable information from Part I to preclude repetitive submission of information already covered in the DCD of a referenced certified design, in the referenced ESP, or in other portions of the COL application. In those instances in which the guidance for a COL applicant referencing a DCD and an ESP does not differ significantly from that for a COL applicant with a custom design, the staff has referenced the specific sections of the guidance in Part I to ensure consistency and to reduce the length of this guide. As such, use of this regulatory guide by a COL applicant referencing a DCD and an ESP should not be limited to Section C.III.2. The COL applicant referencing a DCD and an ESP should also consult the guidance contained in Part I of this guide, as appropriate.

In this section of the guide, the staff has identified the scope of the FSAR on a generic basis for COL applications that reference a certified design and an ESP.

C.III.2.2 How to Use This Section

This section presents information in a format that is consistent with the organization and numbering of the applicable SRP sections and follows the format in Part I of this guide. If the FSAR for a COL application that references a certified design and an ESP needs to address a particular section of the SRP, this section identifies that information. The applicant's specific information should be consistent with the information from the corresponding section in Part I. For design topics that have been resolved in the design certification, the guide states that the COL applicant does not need to include additional information. For topics related to the approval of a specific site in an ESP, the guide states that the COL applicant does not need to include additional information.

The staff intends this information to facilitate the applicant's effort to submit a complete and concise COL application. However, it should be noted that when evaluating whether to grant a COL, the staff will consider the combination of information provided by the specific, referenced DCD, the referenced ESP, the FSAR, and additional technical information provided with the COL application. Thus, the applicant should exercise due diligence in providing proper and sufficient information to meet the regulations in order for the staff to make its determination.

C.III.2.3 Design Acceptance Criteria

At the time this guide was issued, all the certified designs used DAC for those portions of the design that were not complete during the design certification review. The NRC established a unique set of ITAAC that provide criteria for COL applicants to use in completing the design. Because DAC are associated with ITAAC, the regulations do not require these portions of the design to be complete before

issuance of a COL. Section C.III.5 of this guide recommends that COL applicants complete the design portion of the DAC before issuance of the COL. Section C.III.1 of this guide assumes that the agency reviewed and certified the design without the use of DAC. ESPs do not include DAC.

C.III.2.4 Combined License Action or Information Items

Section C.III.1 of this guide does not address any specific COL action or information items for any of the designs previously certified. Instead, Section C.III.4 provides generic guidance for addressing COL action or information items in a COL application referencing a certified design and an ESP. The NRC recommends that applicants address the COL action or information items in the appropriate sections of their FSARs. In addition, COL applicants should identify or uniquely designate the information provided in the application, including the FSAR, that addresses the COL action or information items.

C.III.2.5 Conceptual Design Information

Several factors, including whether the certified design incorporates either active or passive safety systems, determine the scope of the NRC review of a COL application referencing a certified design. COL applicants who reference a certified design with systems that are included in the DCD on a conceptual basis should provide the actual design information for such systems to allow the staff to complete its review of the design. Chapter 1, Section 1.8, which appears later in this section provides further guidance. In addition, COL applicants should identify or uniquely designate the actual design information provided in the application, including the FSAR, to replace the conceptual design information in the DCD of the referenced certified design.

C.III.2.6 Departures from the Certified Design

Applicants should discuss departures from the referenced certified design in the section of the application that corresponds to the DCD section in which the topic is presented. Chapter 1 of the FSAR should include a list or table of departures with a reference to the affected section of the application. Applicants should provide sufficient information for the NRC to resolve all safety and security issues in its review of the departure. COL applicants should also consult Sections C.I.1 through C.I.19 of this guide for a more comprehensive description of the information that the FSAR must include. Section C.IV.3 of this guide includes information on the applicable design certification change processes. In addition, COL applicants should identify or uniquely designate the information provided in the application, including the FSAR, that is a departure from the referenced certified design.

The following definition for “departure” is provided for COL applicants:

A departure is a plant-specific deviation from design information in a standard design certification rule. Note that a departure is plant specific, while a change to a standard design certification rule is generic.

Therefore, a departure has the following characteristics:

- The applicant referencing a design certification requests the departure.
- The departure applies to the design of a nuclear power reactor referencing the design certification rule for which the applicant seeks a departure.
- The applicant must obtain an exemption from the referenced design certification rule if the proposed departure is inconsistent with one or more of the Commission’s regulations. The

exemption would be granted under the provisions of 10 CFR 52.7 (which references the same criteria for the granting of exemptions that are set forth in 10 CFR 50.12, “Specific Exemptions”).

C.III.2.7 Exemptions from the Certified Design

The NRC regards an exemption from the referenced certified design as a potential critical path item in the review of a COL application. During preapplication interactions, the agency recommends that a COL applicant inform the NRC of its intent to request exemptions, including the number and nature of these exemptions, as part of its application.

Applicants should discuss departures from the referenced certified design that requires an exemption from NRC regulations in the section of the application that corresponds to the DCD section in which the topic is presented. The COL applicant should also state in the cover letter or other summary of a COL application that the application includes requests for specific exemptions. The COL application should include sufficient information, within the appropriate section, for the NRC to resolve all safety and security issues related to the exemption and to determine the regulatory basis for the exemption as described in 10 CFR 52.93, “Exemptions and Variances.” COL applicants should also consult Sections C.I.1 through C.I.19 of this guide for a more comprehensive discussion of the information that the FSAR must include. Section C.IV.3 of this guide includes information on the applicable design certification change processes. In addition, COL applicants should identify or uniquely denote the information provided in the application, including the FSAR, that constitutes a departure from the referenced certified design and requires an exemption from NRC regulations.

The following definition of “exemption” is provided for COL applicants:

An *exemption* is a Commission-granted dispensation from compliance with one or more of the Commission’s rules and regulations that would otherwise apply to an entity or a license, permit, or other approval such as a standard design certification rule. Exemption from the requirements in any particular design certification rule would be provided under 10 CFR 52.7. Exemption from an underlying technical requirement in 10 CFR Part 50 would be provided under 10 CFR 50.12. This would be true even in the Commission adoption of a design certification rule. For example, if the design certification did not, at the time of final rulemaking, comply with a technical requirement in 10 CFR Part 50, the Commission would provide an exemption to that requirement as part of the final design certification rulemaking.

C.III.2.8 Variances from the Early Site Permit

The following definition of “variance” is provided for COL applicants:

A *variance* is a plant-specific deviation from one or more of the site characteristics, design parameters, or terms and conditions of an ESP or from the site safety analysis report (SSAR). A variance to an ESP is analogous to a departure from a standard design certification.

Applicants should provide sufficient information for the NRC to resolve all safety and security issues in its review of the variance. COL applicants should also consult Sections C.I.1 through C.I.19 of this guide as well as the original ESP application and SSAR for a more comprehensive discussion of the information that the FSAR needs to include to justify the variance from the ESP. In addition, COL

applicants should identify or uniquely designate the information provided in the application, including the FSAR, that is a variance from the ESP.

C.III.2.9 Verification of Consistency between Referenced Certified Design, Early Site Permit, and Combined License Final Safety Analysis Report

The NRC will verify that the information provided in the FSAR of a COL application is consistent with the referenced certified design. The NRC will also verify that information provided in the FSAR of a COL application is consistent with the referenced ESP. The NRC recommends that the COL application facilitate this review wherever possible.

C.III.2.10 Conformance of Site Characteristics with Site Parameters

In accordance with 10 CFR Part 52, the NRC's review of a COL application that references a certified design must confirm that the actual characteristics of the site chosen by the COL applicant fall within the site parameters in the design certification. Chapter 1, Section 1.8, of this section provides additional guidance.

If the COL application (FSAR) does not demonstrate that the site characteristics fall within the site parameters specified in the design certification, the application shall include a request for an exemption or departure or variance from the ESP, as appropriate, that complies with the requirements of the referenced design certification rule, 10 VFR 52.79, and 10 CFR 52.93.

C.III.2.11 Portions of a Final Safety Analysis Report Not Addressed by a Certified Design and Early Site Permit

The following chapters specify the generic information that an applicant should provide when submitting a COL application that references a certified design. While the agency intends the information provided in this guide to facilitate the applicant's effort to submit a complete and concise COL application, it is not practical for the guide to identify all the specific information needed to meet the threshold required by a COL application. For example, it is not practical to identify the specific requirements for onsite electrical power systems and their support systems for plant designs that incorporate passive safety systems. Additionally, if information listed in the following subsections is not needed (e.g., because it is already provided in the specific, referenced DCD and/or specific, referenced ESP), the applicant should so indicate in the appropriate portion of its FSAR. COL applicants referencing a certified design should follow the organization and numbering of the Tier 2 document for the referenced certified design. Section C.IV.2 of this guide provides additional guidance on referencing a certified design and an ESP in a COL application.

C.III.2.12 Completeness and Accuracy of Referenced Certified Design and Early Site Permit

COL applicants who reference a certified design and an ESP are not required to revise the information included in the certified design and ESP. However, pursuant to 10 CFR 52.6, each applicant or licensee who identifies information suggesting that the regulated activity has a significant implication for public health and safety or common defense and security shall notify the Commission of this information.

Chapter 1. Introduction and General Plant Description

In accordance with 10 CFR Part 52, Subpart C, COL applicants may reference designs that have been certified under 10 CFR Part 52, Subpart B, and ESPs under 10 CFR Part 52, Subpart A. The guidance provided in Section C.III.2 of this regulatory guide is applicable to a COL applicant that references a certified design and an ESP.

Section IV, “Additional Requirements and Restrictions,” of the appendices to 10 CFR Part 52 codifying the certified designs requires that a COL applicant referencing the certified designs shall incorporate by reference, as part of its application, the applicable appendix codifying the certified design. A COL applicant referencing a certified design and an ESP will, therefore, have a significant portion of its proposed facility design already reviewed by the NRC before submitting its application. In addition, a COL applicant referencing a certified design and an ESP will have a significant portion, if not all, of the site characteristics already reviewed by the NRC before submitting its application.

1.1 *Introduction*

In this section, the COL applicant should briefly present the principal aspects of the overall application, including the type of license requested, the number of plant units,¹ a brief description of the proposed plant location, the type of containment structure and its designer, the type of nuclear steam supply system and its designer, the core thermal power levels (both rated and design), the corresponding net electrical output for each thermal power level, and the scheduled completion date and anticipated commercial operation date of each unit. The following subsections address these aspects of the application.

1.1.1 Plant Location

This information is included as part of the referenced ESP. The COL applicant referencing a certified design and an ESP does not need to provide additional information.

1.1.2 Containment Type

This information is included as part of the referenced certified design. The COL applicant referencing a certified design and an ESP does not need to provide additional information.

1.1.3 Reactor Type

This information is included as part of the referenced certified design. The COL applicant referencing a certified design and an ESP does not need to provide additional information.

1.1.4 Power Output

The COL applicant should provide approximate net electrical output for information only, as this rating may vary (core thermal power levels are provided as part of the referenced certified design).

1.1.5 Schedule

¹ 10 CFR 52.8 allows an applicant to combine several applications for different kinds of licenses (e.g., a power reactor and an independent spent fuel storage installation) and allows the agency to combine in a single license the activities of an applicant that would otherwise be licensed separately (e.g., identical units on same site). However, multiple applicants may not file for the same license.

The COL applicant should provide estimated schedules for the completion of construction and the beginning of commercial operation (estimates may be in durations rather than calendar dates based on application submittal date). Alternatively, COL applicants may include a commitment to provide the construction and startup schedules after issuance of the COL and when the licensee has made a positive decision to construct the plant.

1.1.6 Format and Content

The COL applicant should provide information on the following aspects of the format and content of its application:

- 1.1.6.1 This section should discuss conformance with the format and content guidance of this regulatory guide (i.e., Regulatory Guide 1.206).
- 1.1.6.2 This section should discuss conformance with the SRP (i.e., NUREG-0800) in effect 6 months before the date the application is submitted (i.e., the applicant should evaluate the differences in the design features, analytical techniques, and procedural measures proposed for a facility and those corresponding features, techniques, and measures given in the SRP acceptance criteria). Chapter 1, Section 1.9, of this section discusses guidance on providing conformance evaluations with individual SRPs.
- 1.1.6.3 This section should provide the format, content, and numbering for text, tables, and figures included in the application and discuss their use.
- 1.1.6.4 This section should discuss the format for page numbering.
- 1.1.6.5 This section should discuss the method used to identify and reference proprietary information.
- 1.1.6.6 This section should list the acronyms used in the application. For consistency, applicants referencing a certified design and an ESP should use the acronyms provided in the DCD and ESP and should provide a supplemental list of acronyms for items not included in the DCD and ESP, as necessary.

Note that Section IV of the appendices to 10 CFR Part 52 codifying the certified designs requires that COL applicants referencing the certified designs follow the same organization and numbering as the certified design, as modified and supplemented by the applicant's exemptions and departures. COL applicants referencing a certified design and an ESP should follow the organization and numbering of the Tier 2 document of the certified design.

1.2 *General Plant Description*

In this section, the COL applicant referencing a certified design and an ESP should include (1) a summary description of the principal characteristics of the site, (2) a concise description of the facility, and (3) information supplemental to that included in the referenced certified design and ESP. In particular, the supplemental information should briefly discuss the principal design criteria, operating characteristics, and safety considerations for those portions of the facility not included in the certified design. The applicant should indicate the general arrangement of major site-specific structures and equipment by using plan and elevation drawings in sufficient number and detail to provide a reasonable understanding of the general layout of the plant.² The applicant should identify those site-specific

² The general arrangement drawings of buildings other than primary containment may warrant a designation as sensitive unclassified nonsafeguards information in accordance with the agency guidance described in SECY-04-0191, dated October 19, 2004.

features of the plant likely to be of special interest because of their relationship to safety. The applicant should also highlight items such as unusual site characteristics, solutions to particularly difficult engineering and/or construction problems (e.g., modular construction techniques or plans), and significant extrapolations in technology represented by the design.

1.3 Comparisons with Other Facilities

This information is included as part of the referenced certified design. The COL applicant referencing a certified design and an ESP does not need to provide additional information.

1.4 Identification of Agents and Contractors

In this section, the COL applicant referencing a certified design and an ESP should identify the primary agents or contractors for the design, site evaluation/environmental impact assessment, construction, and operation of the nuclear power plant. The DCD for the certified design and the ESP may have included some of this information. Any additional information provided should supplement that in the DCD and ESP.

The application should identify the principal consultants and outside service organizations (such as those providing audits of the quality assurance program) and delineate the division of responsibility among the certified plant designer, architect-engineer, constructor, and plant operator.

1.5 Requirements for Further Technical Information

This information is included as part of the referenced certified design. In its application, the COL applicant who references a certified design and an ESP should identify any requirements for further technical information related to those portions of the facility that are not certified, including an estimated schedule for providing the additional technical information that was not included with the initial COL application submittal and that may be necessary for issuance of a COL.

1.6 Material Referenced

In this section, the COL applicant who references a certified design and an ESP should build upon the information included in the certified design and ESP by providing a supplemental tabulation of any additional topical reports incorporated by reference as part of the application (i.e., topical reports in addition to those incorporated by reference into the DCD and ESP). In this context, "topical reports" are defined as reports that have been prepared by reactor designers, reactor manufacturers, architect-engineers, or other organizations and filed separately with the NRC in support of this application or of other applications or product lines. For example, some COL applicants may choose to incorporate optional design features for a certified design that have been approved as part of a vendor-submitted topical report but have not been included in the DCD for the certified design (e.g., zinc addition system for primary water treatment system).

The tabulation discussed above should include, for each topical report, the title, the report number, the date submitted to the NRC, and the sections of the COL application that reference the report. For any topical reports that have been withheld from public disclosure as proprietary documents pursuant to 10 CFR 2.390(b), this tabulation should also reference nonproprietary summary descriptions of the general content of such reports. This section should also include a tabulation of any documents submitted to the Commission in other applications that are incorporated in whole or in part into this application by reference. If this application incorporates by reference any information submitted in

connection with other applications, the appropriate sections of this application should include summaries of such information. Results of tests and analyses may be submitted as separate reports. In such cases, these reports should be referenced in this section and summarized in the appropriate section of the FSAR.

1.7 Drawings and Other Detailed Information

In this section, the COL applicant who references a certified design and an ESP should build upon the information included in the certified design and ESP by providing a supplemental tabulation of the additional and/or updated instrument and control functional diagrams and electrical one-line diagrams, including legends for electrical power, instrument and control, lighting, and communication drawings. The tabulation should be cross-referenced to the appropriate application section.

In addition, for systems not included in the design certification and ESP, the COL applicant should provide a supplemental tabulation of system drawings and system designators that are cross-referenced to the applicable section of the application. The information should include the applicable drawing legends and notes.

1.8 Site and Plant Design Interfaces and Conceptual Design Information

The requirements of 10 CFR 52.79(b) specify that COL applications referencing an ESP must contain information sufficient to demonstrate that the design of the facility falls within the site characteristics and design parameters specified in the ESP. If the FSAR does not demonstrate that the design of the facility falls within the site characteristics and design parameters, the application shall include a request for variance that complies with the requirements of 10 CFR 52.39, “Finality of Early Site Permit Determinations,” and 10 CFR 52.93.

The requirements of 10 CFR 52.79(d) specify that COL applications referencing a certified design must provide sufficient information to demonstrate that the characteristics of the site fall within the site parameters specified in the design certification and must contain information sufficient to demonstrate that the interface requirements established for the design under 10 CFR 52.47, “Contents of Applications,” have been met. In addition, Section IV of the appendices to 10 CFR Part 52 codifying the certified designs requires that COL applicants referencing the certified designs provide information that addresses the COL action items and reports on generic changes and plant-specific departures from the certified design. If not specifically discussed in Section 1.8 of the FSAR, COL applicants should provide a cross-referenced tabulation highlighting the specific FSAR sections that demonstrate how the site interface requirements identified in the certified design have been met. In addition, the COL applicant should demonstrate in this section (or reference to other more applicable sections of the FSAR) that the design of the facility falls within the site characteristics and design parameters specified in the ESP, including an ESP that uses the plant parameter envelope approach (PPE). The COL applicant referencing an ESP that uses a PPE approach should demonstrate that the design of the facility falls within the site characteristics enveloped in the PPE.

Appendix A to Regulatory Guide 1.70 provides guidance on interfaces for standard designs; however, the agency developed this guidance for standard design concepts that existed before the codification of 10 CFR Part 52. During the development of designs for certification under Subpart B of 10 CFR Part 52, reactor vendors used the guidance provided in Appendix A to Regulatory Guide 1.70 to more clearly define the interfaces between certified designs and the remainder of the proposed facility design (i.e., site-specific designs) that are necessary, in accordance with 10 CFR 52.47, for a COL under Subpart C of 10 CFR Part 52. Section 1.8 of the DCDs for the referenced certified designs that have been codified in the appendices to 10 CFR Part 52 typically identifies and discusses these site interfaces.

These interfaces include requirements for completing site-specific designs for the facility, developing the operational programs for the facility, and verifying that the proposed site for the facility is in compliance with the site parameters upon which the referenced certified design is based. The Tier 1 section of the DCD contains the site parameters assumed in design certifications.

In addition, applicants for design certification facilitated the NRC staff review by including conceptual designs in their DCDs that offered a more comprehensive design perspective. Furthermore, Section 1.8 of the DCD for the referenced certified design identifies and discusses the conceptual portions of the design that were not certified. These conceptual designs typically included portions of the balance-of-plant. The NRC staff expects COL applicants who do not reference a certified design to provide complete designs for the entire facility, including appropriate site-specific design information to replace the conceptual design portions of the DCD for the referenced certified design. The agency does not consider replacement of the conceptual design information in a DCD with actual design information a departure from the certified design because the conceptual design was not certified. However, for those instances in which the actual design information differs from the conceptual design information provided in the DCD, to facilitate the NRC's review of the certified design, the COL applicant should address the impact of these differences on the NRC's evaluation of the certified design and the design probabilistic risk assessment, as applicable. The level of detail needed for the site-specific designs that replace conceptual designs should be consistent with the level of detail provided in the DCD for the nonconceptual (or specific) designs and should be sufficient to resolve all safety issues.

Reactor vendors for certified designs also included a list of information items or action items that a COL referencing a specific certified design is required to address. These COL information items include (1) complete design information for the remainder of a proposed facility referencing a certified design, (2) verification of site parameters, (3) complete analyses and design reports for as-built plant systems, (4) development and implementation of operational programs, and (5) completion of designs included in DAC, and the like. In addition to the cross-referenced tabulation on the verification of site interface requirements, COL applicants should provide a cross-referenced tabulation identifying the specific FSAR sections that address the COL information items from the referenced certified design and ESP. In addition, COL applicants referencing an ESP should include information in the application that is sufficient to demonstrate compliance with ESP permit conditions. Section 1.8 of the application should include tabulated cross-references to ESP permit compliance information. Section C.III.4 of this guide provides additional guidance for addressing COL information items.

Applicants referencing a certified design are required by the applicable appendix to 10 CFR Part 52 to provide a report to the NRC containing a brief description of any plant-specific departures from the DCD, including a summary of the evaluation of each. The appendix also requires each applicant to maintain and submit updates to its plant-specific DCD, which consists of the generic DCD and plant-specific departures. Applicants may fulfill these requirements by providing a report separate from the FSAR with the description and evaluation for each departure and include a summary table in this section of the FSAR providing a list of each departure and the FSAR section(s) in which each departure is addressed.

1.9 Conformance with Regulatory Criteria

1.9.1 Conformance with Regulatory Guides

The requirements of 10 CFR 52.79(a)(4)(i) specify that the contents of a COL application must include information on the design of the facility, including the principal design criteria for the facility. Appendix A to 10 CFR Part 50 establishes minimum requirements for the principal design criteria for

water-cooled nuclear power plants similar in design and location to plants for which the Commission has previously issued construction permits. It also provides guidance to applicants for use in establishing principal design criteria for other types of nuclear power units. Regulatory guides, in general, describe methods acceptable to the NRC staff for implementing the criteria associated with the general design criteria.

Combined License Applicants Who Reference a Certified Design and an Early Site Permit

Certified designs have already provided information addressing conformance with regulatory guides that were in effect 6 months before the submittal date of the design certification application. In accordance with the provisions of 10 CFR 52.63, "Finality of Standard Design Certifications," COL applicants who reference a certified design are not required to re-address conformance with regulatory guides for the portions of the facility design included in the referenced certified design. However, for the site-specific portions of the facility design that are not included in the referenced certified design, a COL applicant should address conformance with regulatory guides in effect 6 months before the submittal date of the COL application. In addition, the COL applicant should address conformance with regulatory guides in effect 6 months before the submittal date of the COL application insofar as they pertain to operational aspects of the facility.

COL applications that include departures from the certified design should evaluate these departures for conformance with the regulatory guides in effect 6 months before the submittal date of the COL application.

ESP applicants have already provided information addressing conformance with applicable regulatory guides that were in effect 6 months before the submittal date of the ESP application. In accordance with the provisions of 10 CFR 52.39, COL applicants who reference an ESP are not required to re-address conformance with the applicable regulatory guides included in the ESP. COL applicants that include variances from the ESP should evaluate these variances for conformance with the regulatory guides in effect 6 months before the submittal of the COL applications.

Consistent with the guidance provided above, COL applicants should evaluate conformance with the following groups of regulatory guides:

- Division 1, Power Reactors
- Division 4, Environmental and Siting (applies to the environmental report and should be discussed therein)
- Division 5, Materials and Plant Protection (applies to the security plan and should be discussed therein)
- Division 8, Occupational Health

Combined License Application Timing

The NRC staff expects that the timing of design certification and COL application submittal may differ considerably (i.e., a design certification is valid for 15 years and an ESP may be issued for up to 20 years, and COL applications that reference a certified design and an ESP may do so at any point during the valid life of the design certification and the ESP). Therefore, the revision number of regulatory guides that a COL applicant should address might also differ considerably from those considered in the referenced certified design. For example, in the years following issuance of a design certification, the NRC staff may have issued new revisions to regulatory guides that the COL applicant should address for those portions of the facility design not included in the referenced certified design.

However, the COL applicant should address those regulatory guide revisions issued after the regulatory guides that were evaluated in the DCD for the referenced certified design only insofar as they may impact site-specific portions of the facility design not included in the referenced certified design. In addition, the COL applicant should address conformance with the regulatory guides in effect 6 months before the submittal date of the COL application insofar as they pertain to operational aspects of the facility. The DCD for the referenced certified design may have included operational aspects of the facility as COL information items. Section C.III.4 of this guide includes additional guidance on COL information items.

1.9.2 Conformance with the Standard Review Plan

The requirements of 10 CFR 52.79(a)(41) specify that COL applications for light-water-cooled nuclear power plants should evaluate the facility against the NRC's SRP guidance in effect 6 months before the docket date of the application. The evaluation required by this section shall identify and describe all differences in design features, analytical techniques, and procedural measures proposed for the facility and those corresponding features, techniques, and measures given in the acceptance criteria in the application and review guidance. The evaluation should discuss any differences and how the proposed alternative provides an acceptable method of complying with the Commission's regulations, or portions thereof, that underlie the corresponding acceptance criteria. The NRC's application and review guidance is not a substitute for the regulations, and compliance is not a requirement.

Combined License Applicants Who Reference a Certified Design and an Early Site Permit

Certified designs have already provided information addressing conformance with the SRP that was in effect 6 months before the submittal date of the design certification application. In accordance with the provisions of 10 CFR 52.63, COL applicants who reference a certified design are not required to re-address conformance with the SRP for those portions of the facility design included in the referenced certified design. However, a COL applicant should address conformance with the SRP in effect 6 months before the submittal date of the COL application for the site-specific portions of the facility design that are not included in the referenced certified design. In addition, the COL applicant should address conformance with the SRP insofar as it pertains to operational aspects of the facility. The DCD for the referenced certified design may have included operational aspects of the facility as COL information items. Section C.III.4 of this guide provides additional guidance on COL information items.

In some cases, a referenced certified design may address SRP conformance regarding design-related issues upon which the COL applicant's operationally related issues/programs depend (e.g., fire protection). In such cases, when the agency has revised/updated the SRPs applicable to the referenced certified design, the COL applicant may address conformance with the version of the SRP evaluated in the referenced certified design even though a later revision of the SRP is in effect. However, in this situation, the NRC expects that the COL applicant will identify and justify an exception from conformance with the SRP in effect 6 months before the submittal date of the COL application.

COL applications that include departures from the referenced certified design should evaluate these departures for conformance with the SRP in effect 6 months before the submittal date of the COL application.

Applicants for an ESP are also required, in accordance with 10 CFR 52.17(a)(1)(xii), to evaluate the site against applicable sections of the NRC's application and review guidance in effect 6 months before the docket date of the ESP application. However, this is a new requirement and ESPs submitted before publication of this regulatory guide did not provide these conformance evaluations. Therefore, the NRC reviewed these ESPs in accordance with the Office of Nuclear Reactor Regulation Review Standard

(RS)-002, "Processing Applications for Early Site Permits," issued May 2004. RS-002 contains regulatory guidance based on Revision 3 of the SRP (i.e., NUREG-0800), issued July 1981. The entire scope of review guidance in the SRP is not applicable to an ESP; therefore, RS-002 includes a cross-referenced tabulation to the SRP to identify the applicable review guidance contained in the SRP. The SRP update issued March 2007 includes the guidance contained in RS-002. Therefore, ESP applications submitted following publication of this regulatory guide will include conformance evaluations with the applicable review guidance from the SRP. In accordance with the provisions of 10 CFR 52.39, COL applicants who reference an ESP are not required to re-address conformance with the applicable SRP sections (or RS-002 sections) included in the referenced ESP.

Combined License Application Timing

In addition, The NRC staff expects that the timing of design certification and COL application submittal may differ considerably (i.e., a design certification is valid for 15 years, and COL applications referencing a certified design may do so at any point during the valid life of the design certification). Therefore, the revision number of SRPs that a COL applicant should address may also differ from those considered in the referenced certified design. For example, in the years following issuance of a design certification, the NRC staff may have issued new revisions to SRPs that the COL applicant should address. However, the COL applicant should address those SRP revisions issued after the SRPs evaluated in the DCD for the referenced certified design only insofar as they may impact site-specific portions of the facility design not included in the referenced certified design. In addition, the COL applicant should address conformance with the SRPs in effect 6 months before the submittal date of the COL application insofar as they pertain to operational aspects of the facility. The agency does not expect an ESP to address any COL application timing issues related to SRPs (or RS-002 guidance).

1.9.3 Generic Issues

There are no requirements for an ESP application to address generic issues; therefore, COL applicants who reference a certified design and an ESP should refer to Chapter 1, Section 1.9.3, of Section C.III.1 for guidance on generic issues.

1.9.4 Operational Experience (Generic Communications)

There are no requirements for an ESP application to address operational experience; therefore, COL applicants who reference a certified design and an ESP should refer to Chapter 1, Section 1.9.4, of Section C.III.1 for guidance on operational experience.

Chapter 2. Site Characteristics

Chapter 2 of the FSAR should provide information concerning the geological, seismological, hydrological, and meteorological characteristics of the site and the vicinity, in conjunction with present and projected population distribution and land use as well as site activities and controls. The purpose of this information is to indicate how these site characteristics have influenced plant design and operating criteria and to show the adequacy of the site characteristics from a safety perspective.

2.1 Geography and Demography

2.1.1 Site Location and Description

2.1.1.1 *Specification of Location*

COL applicants that reference an ESP do not need to include additional information.

2.1.1.2 *Site Area Map*

COL applicants that reference an ESP do not need to include additional information.

2.1.1.3 *Boundaries for Establishing Effluent Release Limits*

COL applicants that reference an ESP do not need to include additional information.

2.1.2 Exclusion Area Authority and Control

2.1.2.1 *Authority*

Applicants should revise the information provided in the ESP application if there are any known significant changes regarding the applicant's legal rights with respect to all areas that lie within the designated exclusion area. The information should continue to establish, as required by 10 CFR 100.21(a), that the applicant has the authority to determine all activities, including exclusion and removal of personnel and property from the area.

If the applicant has not obtained ownership of all land within the exclusion area, it should clearly describe those parcels of land not owned within the area by means of a scaled map of the exclusion area, and it should specify the status of proceedings and schedule to obtain ownership or the required authority over the land for the life of the plant. The COL applicant should demonstrate or provide reasonable assurance that it will have either ownership or authority to control activities at the time of COL issuance.

2.1.2.2 *Control of Activities Unrelated to Plant Operation*

The applicant should revise the information provided in the ESP application if there are any known significant changes regarding any activities unrelated to plant operation, which are to be permitted within the exclusion area (aside from transit through the area). Include the nature of such activities, the number of persons engaged in them, and the specific locations within the exclusion area where such activities will be permitted. Describe the limitations to be imposed on such activities and the procedure(s) to be followed to ensure that the applicant is aware of such activities and has made appropriate arrangements to evacuate persons engaged in such activities, in the event of an emergency.

2.1.2.3 Arrangements for Traffic Control

Revise the information provided in the ESP application if there are any known significant changes regarding highways, railroads, or waterways that transverse the exclusion area, including the arrangements made (or to be made) to control traffic in the event of an emergency.

2.1.2.4 Abandonment or Relocation of Roads

Revise the information provided in the ESP application if there are any known significant changes regarding any public roads traversing the proposed exclusion area that, because of their location, will have to be abandoned or relocated, including authority possessed under State laws to effect abandonment or relocation, the procedures that must be followed, the identity of the public authorities who will make the final determination, and the status of the proceedings completed to date and schedule to obtain abandonment or relocation.

2.1.3 Population Distribution

COL applicants that reference an ESP do not need to include additional information.

2.2 *Nearby Industrial, Transportation, and Military Facilities*

2.2.1 Locations and Routes

COL applicants that reference an ESP do not need to include additional information.

2.2.2 Descriptions

In general, COL applicants that reference an ESP do not need to include additional information. However, if onsite hazardous material inventories and related information was not reviewed as a part of the ESP, then that information would be included in the COL application as appropriate.

2.2.3 Evaluation of Potential Accidents

In general, COL applicants that reference an ESP do not need to include additional information. However, if onsite hazardous material inventories and related information were not reviewed as a part of the ESP, then that information would be included in the COL application as appropriate (see also guidance at C.III.2, Section 6.4).

2.3 *Meteorology*

2.3.1 Regional Climatology

2.3.1.1 *General Climate*

COL applicants that reference an ESP do not need to include additional information.

2.3.1.2 *Regional Meteorological Conditions for Design and Operating Bases*

COL applicants that reference an ESP do not need to include additional information.

2.3.2 Local Meteorology

2.3.2.1 Normal and Extreme Values of Meteorological Parameters

COL applicants that reference an ESP do not need to include additional information.

2.3.2.2 Potential Influence of the Plant and Its Facilities on Local Meteorology

COL applicants that reference an ESP do not need to include additional information.

2.3.2.3 Local Meteorological Conditions for Design and Operating Bases

COL applicants that reference an ESP do not need to include additional information.

2.3.3 Onsite Meteorological Measurements Program

If not provided in the ESP, applicants should describe the operational programs for meteorological measurements at the site, including offsite satellite facilities. This description should include a site map showing tower location with respect to manmade structures, topographic features, and other site features that may influence meteorological measurements. Indicate distances to nearby obstructions to flow in each downwind sector. In addition, describe the measurements made, elevations of measurements, exposure of instruments, descriptions of instruments used, instrument performance specifications, calibration and maintenance procedures, data output and recording systems and locations, and data processing, archiving, and analysis procedures. Regulatory Guide 1.23, "Onsite Meteorological Programs," presents guidance on acceptable onsite meteorological programs. Identify and justify any s from the guidance provided in Regulatory Guide 1.23.

2.3.4 Short-Term Atmospheric Dispersion Estimates for Accident Releases

For postulated accidental radioactive releases, applicants should provide control room atmospheric dispersion factors (χ/Q values) that are not exceeded more than 5 percent of the time for all potential accident release points for use in control room radiological habitability analyses. This section should include a site plan showing true north and indicating the locations of all potential accident release pathways and control room intake and unfiltered in-leakage pathways. Regulatory Guide 1.194, "Atmospheric Relative Concentrations for Control Room Radiological Habitability Assessments at Nuclear Power Plants," presents guidance on appropriate dispersion models for estimating control room χ/Q values. Identify and justify any deviations from the guidance provided in Regulatory Guide 1.194. Control room dispersion estimates can be based on the most recent meteorological data provided in the ESP application.

For hazardous material releases, provide a description of the atmospheric dispersion modeling used in evaluating potential design-basis events to calculate concentrations of hazardous materials (e.g., flammable or toxic clouds) outside building structures resulting from the onsite and/or offsite airborne releases of such materials. Justify the appropriateness of the use of the models with regards to release characteristics, plant configuration, plume density, meteorological conditions, and site topography. Regulatory Guide 1.78, "Evaluating the Habitability of a Nuclear Power Plant Control Room During a Postulated Hazardous Chemical Release," provides guidance on hazardous chemical dispersion modeling. Identify and justify any deviations from the guidance provided in Regulatory Guide 1.78.

2.3.5 Long-Term Atmospheric Dispersion Estimates for Routine Releases

COL applicants that reference an ESP do not need to include additional information.

2.4 Hydrologic Engineering

2.4.1 Hydrologic Description

COL applicants that reference an ESP do not need to include additional information.

2.4.2 Floods

COL applicants that reference an ESP do not need to include additional information.

2.4.3 Probable Maximum Flood on Streams and Rivers

COL applicants that reference an ESP do not need to include additional information.

2.4.4 Potential Dam Failures

COL applicants that reference an ESP do not need to include additional information.

2.4.5 Probable Maximum Surge and Seiche Flooding

COL applicants that reference an ESP do not need to include additional information.

2.4.6 Probable Maximum Tsunami Hazards

COL applicants that reference an ESP do not need to include additional information.

2.4.7 Ice Effects

Provide information on ice effects related to the design of safety-related structures, systems, and components, indicating how the interface requirements between the ESP and DC are met.

2.4.8 Cooling Water Canals and Reservoirs

If not provided in the ESP, provide the design bases for the capacity and operating plan for safety-related cooling water canals and reservoirs (see Section 2.4.11 of this guide). If the source of water for the ultimate heat sink or other safety-related needs relies on cooling water canals or reservoirs and is dependent on a nearby stream, river, estuary, lake, or ocean, the availability of safety-related cooling water may be affected by low-water conditions caused by low streamflow and low water level resulting from draw-down caused by hurricanes, seiches, and tsunamis. Discuss and provide bases for protecting the canals and reservoirs against wind waves, flow velocities (including allowance for freeboard), and blockage. Where applicable, describe the ability to withstand a probable maximum flood, surge, or other related event.

Discuss the emergency storage evacuation of reservoirs (low-level outlet and emergency spillway). Describe verified runoff models (e.g., unit hydrographs), flood routing, spillway design, and outlet protection.

2.4.9 Channel Diversions

COL applicants that reference an ESP do not need to include additional information.

2.4.10 Flooding Protection Requirements

Provide information on how flooding protection requirements are met for those structures, systems, and components important to safety that are not part of the DC facility.

2.4.11 Low-Water Considerations

COL applicants that reference an ESP do not need to include additional information.

2.4.12 Ground Water

For plants employing permanent dewatering systems, describe the implementation program, including milestones, for the following programs:

- (1) ground water monitoring program
- (2) construction and operational ground water level monitoring programs for dewatering
- (3) outlet flow monitoring program

2.4.13 Accidental Release of Radioactive Liquid Effluent in Ground and Surface Waters

If the ESP permit conditions preclude accidental liquid releases, provide information on how the certified design complies with the permit conditions.

2.4.14 Technical Specification and Emergency Operation Requirements

Describe any emergency protective measures designed to minimize the impact of adverse hydrology-related events on safety-related facilities. Describe the manner in which the applicant will incorporate these requirements into appropriate technical specifications and emergency procedures. Discuss the need for any technical specifications for plant shutdown to minimize the consequences of an accident resulting from hydrologic phenomena such as floods or the degradation of the ultimate heat sink. In the event that the applicant will use emergency procedures to meet safety requirements associated with hydrologic events, identify the event, provide appropriate water levels and lead times available, indicate the type of action that would be taken, and discuss the time required to implement each procedure.

2.5 Geology, Seismology, and Geotechnical Engineering

2.5.1 Basic Geologic and Seismic Information

COL applicants that reference an ESP do not need to include additional information.

2.5.2 Vibratory Ground Motion

COL applicants that reference an ESP do not need to include additional information.

2.5.3 Surface Faulting

COL applicants that reference an ESP do not need to include additional information.

2.5.4 Stability of Subsurface Materials and Foundations

Section 2.5.4 in C.I. of this guide provides a description of the necessary information to determine the soil and rock properties as well as the stability of subsurface materials. Revise the information provided in the ESP application based on the results of additional subsurface borings, soil and rock testing, geotechnical and geophysical investigations, and site explorations performed for COL application. Verify that the soil and rock properties, as well as their variability and uncertainty, are consistent with those provided in the ESP application. Verify that the stability of all soils and rock that may affect the nuclear power plant facilities under both static and dynamic conditions is consistent with the information provided in the ESP application. Those subsections in Section 2.5.4 that were completed in the ESP application should be referenced rather than repeated.

2.5.5 Stability of Slopes

Provide information concerning the static and dynamic stability of all natural and manmade earth or rock slopes (e.g., cuts, fills, embankments, dams) for which failure, under any of the conditions to which they could be exposed during the life of the plant, could adversely affect the safety of the nuclear power plant facilities that are outside the scope of the certified design. Include a thorough evaluation of site conditions, geologic features, and the engineering properties of the materials comprising the slope and its foundation. Provide the results of slope stability evaluations using classic and contemporary methods of analyses. Whenever possible, include comparative field performance of similar slopes. All information related to defining site conditions, geologic features, engineering properties of materials, and design criteria should be of the same scope as that discussed in Section 2.5.4 of this guide. Applicants may use cross-references where appropriate. For the stability evaluation of manmade slopes, include summary data and a discussion of construction procedures, record testing, and instrumentation monitoring to ensure high-quality earthwork.

2.5.5.1 *Slope Characteristics*

Describe and illustrate slopes and related site features in detail. Provide a plan showing the limits of cuts, fills, or natural undisturbed slopes, and show their relation and orientation relative to plant facilities. Clearly identify benches, retaining walls, bulkheads, jetties, and slope protection. Provide detailed cross-sections and profiles of all slopes and their foundations. Discuss exploration programs and local geologic features. Describe the ground water and seepage conditions that exist and those assumed for analysis purposes. Describe the type, quantity, extent, and purpose of exploration, and show the location of borings, test pits, and trenches on all drawings.

Discuss the sampling methods used. Identify material types and the static and dynamic engineering properties of the soil and rock materials comprising the slopes and their foundations. Identify the presence of any weak zones, such as seams or lenses of clay, mylonites, or potentially liquefiable materials. Discuss and provide results of the field and laboratory testing programs, and justify selected design strengths.

2.5.5.2 *Design Criteria and Analyses*

Describe the design criteria for the stability and design of all safety-related and seismic Category I slopes. Provide valid static and dynamic analyses to demonstrate the reliable performance of

these slopes throughout the lifetime of the plant. Describe the methods used for static and dynamic analyses, and indicate the reasons for selecting them. Indicate assumptions and design cases analyzed with computed factors of safety. Provide the results of stability analyses in tables identifying design cases analyzed, strength assumptions for materials, forces acting on the slope and pore pressures acting within the slope, and the type of failure surface. For assumed failure surfaces, show them graphically on cross-sections, and appropriately identify them in both the tables and sections included in the FSAR. In addition, describe adverse conditions such as high water levels attributable to the probable maximum flood, sudden drawdown, or steady seepage at various levels. Explain and justify computer analyses, and provide an abstract of computer programs used.

Where liquefaction is possible, provide the results of the analysis of major dam foundation slopes and embankments by state-of-the-art finite element or finite-difference methods of analysis. Where there are liquefiable soils, indicate whether the analysis considered changes in pore pressure attributable to cyclic loading to assess the potential for liquefaction, as well as the effect of pore pressure increase on the stress-strain characteristic of the soil and the postearthquake stability of the slopes.

2.5.5.3 *Logs of Borings*

Provide the logs of borings, test pits, and trenches that were completed for the evaluation of slopes, foundations, and borrow materials to be used for slopes. Logs should indicate elevations, depths, soil and rock classification information, ground water levels, exploration and sampling method, recovery, rock quality designation, and blow counts from standard penetration tests. Discuss drilling and sampling procedures and indicate sampling locations on the logs.

2.5.5.4 *Compacted Fill*

Provide a description of the excavation, backfill, and borrow material planned for any dams, dikes, and embankment slopes. Describe planned construction procedures and control of earthworks. This information should be similar to that outlined in Section 2.5.4.5 of this guide. Discuss the quality control techniques and documentation during and following construction, and reference the applicable quality assurance sections of the FSAR.

Chapter 3. Design of Structures, Systems, Components, and Equipment

As outlined below, the information in this chapter is identical to the information in Chapter 3 of Section C.III.1 of this guide, with the exception of Section 3.5.1.6. This chapter addresses specific information required for Section 3.5.1.6, if not provided in the ESP application. COL applicants referencing a certified design and an ESP should reference Chapter 3 of Section C.III.1 for the information needed to prepare their COL applications.

3.5.1.6 Aircraft Hazards

If not provided in the ESP application, provide an aircraft hazard analysis for each of the following:

- (1) Federal airways, holding patterns, or approach patterns within 3.22 kilometers (2 miles) of the nuclear facility
- (2) all airports located within 8.05 kilometers (5 statute miles) of the site
- (3) airports with projected operations greater than $193d^2$ ($500d^2$) movements per year located within 16.10 kilometers (10 statute miles) of the site and greater than $386d^2$ ($1000d^2$) outside 16.10 kilometers (10 statute miles) of the site, where d is the distance in kilometers (statute miles) from the site
- (4) military installations or any airspace usage that might present a hazard to the site

Regarding item (4) above, for some uses, such as practice bombing ranges, it may be necessary to evaluate uses as far as 32.19 kilometers (20 statute miles) from the site.

Hazards to the plant may be divided into accidents resulting in structural damage and accidents involving fire. Applicants should base these analyses on the projected traffic for the facilities, the aircraft accident statistics provided in Section 2.2 of the FSAR, and the critical areas described in Section 3.5.2 of the FSAR.

The aircraft hazard analysis should provide an estimate of the total aircraft hazard probability per year. If aircraft accidents that could lead to radiological consequences in excess of the exposure guidelines of 10 CFR 50.34(a)(1) have a probability of occurrence of an order of magnitude of 10^{-7} per year, demonstrate by some other means (e.g., reanalyzing or redesigning the proposed facility) that the proposed facility is acceptable at the proposed site. Provide and justify the aircraft selected as the design-basis impact event, including its dimensions, mass (including variations along the length of the aircraft), energy, velocity, trajectory, and energy density. Section 3.5.3 of the FSAR should provide resultant loading curves on structures.

Applicants should explicitly justify all parameters used in these analyses. Wherever a range of values is obtained for a given parameter, it should be plainly indicated and the most conservative value used. Applicants should also clearly state the justification for all assumptions.

Chapter 4. Reactor

The information in this chapter is identical to the information in Chapter 4 of Section C.III.1 of this guide. COL applicants referencing a certified design and an ESP should refer to Chapter 4 of Section C.III.1 for the information needed to prepare their COL applications.

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Preliminary Use

Chapter 5. Reactor Coolant System Component and Subsystem Design

The information in this chapter is identical to the information in Chapter 5 of Section C.III.1 of this guide. COL applicants referencing a certified design and an ESP should refer to Chapter 5 of Section C.III.1 for the information needed to prepare their COL applications.

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Preliminary Use

Chapter 6. Engineered Safety Features

The information in this chapter is identical to the information in Chapter 6 of Section C.III.1 of this guide. COL applicants referencing a certified design and an ESP should refer to Chapter 6 of Section C.III.1 for the information needed to prepare their COL applications.

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Preliminary Use

Chapter 7. Instrumentation and Controls

The information in this chapter is identical to the information in Chapter 7 of Section C.III.1 of this guide. COL applicants referencing a certified design and an ESP should refer to Chapter 7 of Section C.III.1 for the information needed to prepare their COL applications.

Issued for
Preliminary Use

Chapter 8. Electric Power

The information in this chapter is identical to the information in Chapter 8 of Section C.III.1 of this guide. COL applicants referencing a certified design and an ESP should refer to Chapter 8 of Section C.III.1 for the information needed to prepare their COL applications.

Issued for
Preliminary Use

Chapter 9. Auxiliary Systems

The information in this chapter is identical to the information in Chapter 9 of Section C.III.1 of this guide. COL applicants referencing a certified design and an ESP should refer to Chapter 9 of Section C.III.1 for the information needed to prepare their COL applications.

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Preliminary Use

Chapter 10. Steam and Power Conversion System

The information in this chapter is identical to the information in Chapter 10 of Section C.III.1 of this guide. COL applicants referencing a certified design and an ESP should refer to Chapter 10 of Section C.III.1 for the information needed to prepare their COL applications.

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Preliminary Use

Chapter 11. Radioactive Waste Management

The information in this chapter is identical to the information in Chapter 11 of Section C.III.1 of this guide. COL applicants referencing a certified design and an ESP should refer to Chapter 11 of Section C.III.1 for the information needed to prepare their COL applications.

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Chapter 12. Radiation Protection

With the exception of the information requested in Section 12.3.5 of Section C.III.1 of this guide, the information in this chapter is identical to the information in Chapter 12 of Section C.III.1. An application for an ESP should address the information requested in Section 12.3.5 of Section C.III.1 (i.e., an estimate of annual doses to construction workers in a new construction area from the existing operating plant(s)). COL applicants referencing a certified design and an ESP should refer to Chapter 12 of Section C.III.1 for the information needed to prepare their COL applications.

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Preliminary Use

Chapter 13. Conduct of Operations

The information in this chapter is identical to the information in Chapter 13 of Section C.III.1 of this guide. COL applicants referencing a certified design and an ESP should refer to Chapter 13 of Section C.III.1 for the information needed to prepare their COL applications.

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Preliminary Use

Chapter 14. Verification Programs

The information in this chapter is identical to the information in Chapter 14 of Section C.III.1 of this guide. COL applicants referencing a certified design and an ESP should refer to Chapter 14 of Section C.III.1 for the information needed to prepare their COL applications.

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Chapter 15. Transient and Accident Analyses

The information in this chapter is identical to the information in Chapter 15 of Section C.III.1 of this guide. COL applicants referencing a certified design and an ESP should refer to Chapter 15 of Section C.III.1 for the information needed to prepare their COL applications.

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Chapter 16. Technical Specifications

The information in this chapter is identical to the information in Chapter 16 of Section C.III.1 of this guide. COL applicants referencing a certified design and an ESP should refer to Chapter 16 of Section C.III.1 for the information needed to prepare their COL applications.

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Preliminary Use

Chapter 17. Quality Assurance and Reliability Assurance

The information in this chapter is identical to the information in Chapter 17 of Section C.III.1 of this guide. COL applicants referencing a certified design and an ESP should refer to Chapter 17 of Section C.III.1 for the information needed to prepare their COL applications.

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Preliminary Use

Chapter 18. Human Factors Engineering

The information in this chapter is identical to the information in Chapter 18 of Section C.III.1 of this guide. COL applicants referencing a certified design and an ESP should refer to Chapter 18 of Section C.III.1 for the information needed to prepare their COL applications.

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Preliminary Use

Chapter 19. Probabilistic Risk Assessment

The information in this chapter is identical to the information in Chapter 19 of Section C.III.1 of this guide. COL applicants referencing a certified design and an ESP should refer to Chapter 19 of Section C.III.1 for the information needed to prepare their COL applications.

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