WordPerfect Document Compare Summary

Original document: P:\RG 1.206 draft\C.I.13.wpd
Revised document: @PFDesktop\:MyComputer\C:\ADAMS\Cache\ML0624903281.wpd
Deletions are shown with the following attributes and color:
~~Strikeout~~, Blue RGB(0,0,255).
Deleted text is shown as full text.
Insertions are shown with the following attributes and color:
Double Underline, Redline, Red RGB(255,0,0).

The document was marked with 699 Deletions, 776 Insertions, 0 Moves.

C.I.13~~.~~ Conduct of Operations

~~The~~Title 10, Section 52.79, "Contents of Applications; Technical Information," of the *Code of Federal Regulations* (10 CFR 52.79) provides the regulatory requirements for the content of an application for a combined license (COL) pursuant to ~~10 CFR Part 52,~~ Subpart C, ~~are provided in §52.79. Section 52.79(b) specifies further that~~"Combined Licenses." of 10 CFR Part 52, "Early Site Permits; Standard Design Certifications; and Combined Licenses for Nuclear Power Plants." As specified in 10 CFR 52.79(b), the application must contain the technically relevant information required of applicants for an operating license by 10 CFR 50.34, "Contents of Applications; Technical Information." The requirements contained in 10~~-~~ CFR~~-~~ 50.34 specify that each application ~~shall~~must include a final safety analysis report (FSAR) that provides information concerning facility design, construction, and operation. This chapter provides guidance on the information necessary in a ~~combined license~~COL application for the U.S. Nuclear Regulatory Commission (NRC) to perform its review of proposed facility design, construction, and operation in accordance with the regulatory requirements above.

This chapter of the FSAR should provide information relating to the preparations and plans for design, construction, and operation of the plant. Its purpose is to provide adequate assurance that the ~~combined license~~COL applicant will establish and maintain a staff of adequate size and technical competence and that operating plans to be followed by the licensee are adequate to protect public health and safety. Applicants have the choice of including information which is site specific or different from a generic FSAR Section 13.1 in this section or an appendix to this section. Applicants may use a table or appendix to facilitate the update of information in Section C.I.13.

Issued for Preliminary Use

C.I.13.1 *Organizational Structure of Applicant*

C.I.13.1.1 Management and Technical Support Organization

A ~~combined license~~COL applicant should provide a description ~~in this section~~ of the corporate or home office organization, its functions and responsibilities, and the number and the qualifications of personnel and should be directed to activities that include facility design, design review, design approval, construction management, testing, and operation of the plant. This information can be contained in this section or an appendix to this section.

The descriptions of the design and construction and preoperational responsibilities should include the following:

(1) how these responsibilities are assigned by the ~~h~~Headquarters staff and implemented within the organizational units

(2) the responsible working- or performance-level organizational unit

(3) the estimated number of persons to be assigned to each unit with responsibility for the project

(4) the general educational and experience requirements for identified positions or classes of positions

~~(5) education and experience required for management and supervisory positions~~

~~(6) for identified positions or classes of positions that have functional responsibilities other than for the COL application, the expected proportion of time assigned to the other activities~~

(5) early plans for providing technical support for the operation of the facility

The following sections discuss the specific information that should be included.

C.I.13.1.1.1 *Design, Construction, and Operating Responsibilities*

The ~~combined license~~application should describe the COL applicant's past experience in the design, construction, and operation of nuclear power plants and past experience in activities of similar scope and complexity~~ should be described~~. The ~~applicant's~~applicant should also describe its management, engineering, and technical support organizations~~ should also be described~~. The description should include organizational charts for the current headquarters and engineering structure and planned modifications and additions to those organizations to reflect the added functional responsibilities with the nuclear plant as identified below:

(1) Design and Construction Responsibilities

The extent and assignment of these activities, which the COL applicant determines, are generally contractual in nature~~ and determined by t~~. The ~~combined license applicant. The~~application should describe the following aspects of the implementation or delegation of design and construction responsibilities (Chapter 17 should~~ be~~ describe~~d (~~quality assurance aspects~~ should be described in Chapter 17~~):

(a) principal site-related engineering studies such as meteorology, geology, seismology, hydrology, demography, and environmental effects

(b) design of plant and ancillary systems, including fire protection systems

(c) review and approval of plant design features, including human factors engineering ~~(HFE)~~ considerations

(d) site layout with respect to environmental effects and security provisions

(e) development of safety analysis reports

(f) review and approval of material and component specifications

~~(2) Pre-Operational Responsibilities~~

~~A description of the proposed plans for the development and implementation of staff training programs should be included and should be substantially accomplished before preoperational testing begins.~~

(~~3~~2) Technical Support for Operations

Technical services and backup support for the operating organization should be available before the preoperational and startup testing program begins and continue throughout the life of the plant. The following ~~are~~ special capabilities~~ that~~ should be included:

(a) nuclear, mechanical, structural, electrical, thermal-hydraulic, metallurgy and materials, and instrumentation and controls engineering

(b) plant chemistry

(c) health physics

(d) fueling and refueling operations support

(e) maintenance support

(f) operations support

(g) quality assurance

(h) training

(i) safety review

Issued for Preliminary Use

(j) fire protection

(k) emergency coordination

(l) outside contractual assistance

C.I.13.1.1.2 ***Organizational Arrangement***

In the FSAR, the description should include organization charts reflecting the current headquarters and engineering structure and any planned modifications and additions to reflect the added functional responsibilities (as described in Section 13.1.1.1) associated with the addition of the nuclear plant to the applicant's power generation capacity. The description should show 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.

In the FSAR, the description should include organizational charts reflecting the current corporate structure and the specific working- or performance-level organizational units that will provide technical support for operation (see Section 13.1.1.1, item 3). If these functions are to be provided from outside the corporate structure, the contractual arrangements should be described.

The information submitted should include a description of the activity (including its scope), an organizational description, with chart lines of authority and responsibility for the project, the number of persons assigned to the project, and qualification requirements for principal management positions for the project. For NSSSNuclear steam supply system and AEarchitect-engineer organizations with extensive experience, may provide a detailed description of this experience may be provided in lieu of the details of their organization as evidence of technical capability. However, the applicant should describe how it will apply this experience will be applied to the project.

The FSAR should provide the following information:

(1) organizational charts of the applicant's corporate-level management and technical support organizations

(2) the relationship of the nuclear-oriented part of the organization to the rest of the corporate organization

(3) a description of the provisions for technical support for operations

For new, multi-unit plant sites, the combined licenseCOL applicant should describe the organizational arrangement and functions to meet the needs of the multiple units. The applicant should include in this discussion the extent to which the organizational arrangement and functions are shared between or among the units addressed in the application and describe the organizational arrangement and functional divisions or controls that have been established to preserve integrity between individual units and/or programs.

For plant sites with existing, operating nuclear units, the applicant should include in this discussion the extent to which the organizational arrangement and functions are shared between the new and existing units. In addition, the applicant should include a discussion of the organizational arrangement and functional divisions or controls that have been established to preserve integrity between the new and existing, operational units and/or programs.

C.I.13.1.1.3 ***Qualifications***

Issued for Preliminary Use

The FSAR should describe general qualification requirements in terms of educational background and experience requirements for positions or classes of positions identified in ~~13~~Section 13.1.1.2. For identified positions or classes of positions that have functional responsibilities for other than the identified application, the application should describe the expected proportion of time assigned to the other activities ~~should be described~~.

The FSAR should identify qualification requirements for ~~h~~Headquarters staff personnel, which should be described in terms of educational background and experience requirements, for each identified position or class of positions providing headquarters technical support for operations. In addition, the FSAR should include qualification requirements for individuals assigned to fulfill responsibilities identified in item 3 of Section 13.1.1.1, including the job position that corresponds most closely to that identified as "engineer in charge."

The FSAR should (1) give the approximate numbers of and describe educational and experience requirements for, each identified position or class of positions providing technical support for plant operations~~;~~ and (2) include specific educational and experience requirements for individuals holding the management and supervisory positions in organizational units providing support in the areas identified below:

Issued for Preliminary Use

(1) nuclear, mechanical, structural, electrical, thermal-hydraulic, metallurgical, materials, and instrumentation and controls engineering

(2) plant chemistry

(3) health physics

(4) fueling and refueling operations support

(5) maintenance support

(6) operations support

(7) quality assurance (addressed in Section 17.5)

(8) training

(9) safety review

(10) fire protection

(11) emergency coordination

(12) outside contractual assistance

C.I.13.1.2 Operating Organization

This section of the FSAR should describe the structure, functions, and responsibilities of the onsite organization established to operate and maintain the plant. It is recognized that during the early stages of plant design and construction, many details of the plant organization and staffing have not been finalized and may be modified following issuance of a ~~combined license~~COL, during construction, or in preparation for plant operation. The organizational information provided as part of a ~~combined license~~COL application should include the following elements:

(1) the applicant's commitment to meet the guidelines of Regulatory Guide 1.33, "Quality Assurance Program Requirements (Operations)," for its operating organization

(2) the applicant's commitment to meet the guidelines of Regulatory Guide 1.33 for onsite review and rules of practice (addressed in Section 17.5)

(3) the applicant's commitment to meet the applicable requirements for a ~~F~~fire ~~P~~protection ~~P~~program

(4) the applicant's commitment to meet the guidelines of Regulatory Guide 1.8, "Qualification and Training of Personnel for Nuclear Power Plants," for its operating organization

(5) the applicant's commitment to be consistent with one of the options in the Commission's Policy Statement on Engineering Expertise on Shift

(6) the applicant's commitment to meet ~~TMI~~Three Mile Island Action Plan ~~i~~Items I.A.1.1 and I.A.1.3 of ~~NUREG-0737~~NUREG-0737, "Clarification of TMI Action Plan Requirements," issued November 1980, for ~~shift technical advisor and~~ shift staffing

(7) a schedule, relative to fuel loading for each unit, for filling all positions

(8) the applicant's commitment to meet the applicable requirements for a physical protection program

As applicable, the applicant should provide evidence that the initial personnel selections conform to the commitments made in the application.

Issued for Preliminary Use

C.I.13.1.2.1 ***Plant Organization***

~~P~~The applicant should provide an organization chart showing the title of each position, the minimum number of persons to be assigned to duplicate positions (e.g., technicians, shift operators, repair technicians), the number of operating shift crews, and the positions for which reactor operator and senior reactor operator licenses are required. For multi~~-~~unit stations, the organization chart (or additional charts) should clearly reflect planned changes and additions as new units are added to the station. The application should provide the schedule, relative to the fuel loading date for each unit, for filling all positions ~~should be provided~~.

C.I.13.1.2.2 ***Plant Personnel Responsibilities and Authorities***

In addition, the applicant should provide the following organizational information:

(1) The application should describe the functions, responsibilities, and authorities of the following plant positions or their equivalents:

(a) plant managers
(b) operations supervisors
(c) operating shift crew supervisors
(d) shift technical advisors
(e) licensed operators
(f) non~~-~~licensed operators
(g) technical supervisors
(h) radiation protection supervisors
(i) instrumentation and controls maintenance supervisors
(j) equipment maintenance supervisors
(k) fire protection supervisors
(l) quality assurance supervisors (when part of the plant staff) (addressed in Section 17.5)

~~F~~The application should describe for each position, where applicable, required interfaces with offsite personnel or positions identified in Section 13.1.1 ~~should be described~~. Such interfaces include defined lines of reporting responsibilities (e.g., from the plant manager to the immediate supervisor), lines of authority, and communication channels.

(2) The application should describe the line of succession of authority and responsibility for overall station operation in the event of unexpected contingencies of a temporary nature, and the delegation of authority that may be granted to operations supervisors and to shift supervisors, including the authority to issue standing or special orders.

(3) If the station contains, or there are plans that it contain, power generating facilities other than those specified in the application ~~and~~, including non~~-~~nuclear units, this section should also describe interfaces with the organizations operating the other facilities. The description should include any proposed sharing of personnel between the units, a description of their duties, and the proportion of their time that they will routinely be assigned to non~~-~~nuclear units.

C.I.13.1.2.3 *Operating Shift Crews*

The application should describe the position titles, applicable operator licensing requirements for each, and the minimum numbers of personnel planned for each shift ~~should be described~~ for all combinations of units proposed to be at the station in either operating or cold shutdown mode. ~~A~~The applicant should also describe shift crew staffing plans unique to refueling operations. In addition, the application should describe the proposed means of assigning shift responsibility for implementing the radiation protection and fire protection programs on a round-the-clock basis ~~should be described~~.

Issued for Preliminary Use

C.I.13.1.3 Qualifications of Nuclear Plant Personnel

C.I.13.1.3.1 *Qualification Requirements*

This section of the FSAR should describe the education, training, and experience requirements (qualification requirements) established for each management, operating, technical, and maintenance position category in the operating organization described in Section C.I.13.1.2. This includes personnel who will do the preoperational and startup tests. Regulatory Guide 1.8~~, "Qualification and Training of Personnel for Nuclear Power Plants,"~~ contains guidance on selection and training of personnel. The FSAR should specifically indicate a commitment to meet the regulatory position stated in this guide or provide an acceptable alternative. Where a clear correlation cannot be made between the proposed plant staff positions and those referenced by Regulatory Guide 1.8, this section should list each position on the plant staff ~~should be listed~~ along with the corresponding position referenced by Regulatory Guide 1.8~~,~~ or with a detailed description of the proposed qualifications for that position.

C.I.13.1.3.2 *Qualifications of Plant Personnel*

As applicable, the application should present the qualification requirements of the initial appointees to (or incumbents of) plant positions ~~should be presented~~ for key plant managerial and supervisory personnel through shift supervisory level. The qualification requirements should be identified by position, title and, as a minimum, formal education, training, and experience (including NRC licensing).

C.I.13.1.4 References

(1) 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities."

(2) Regulatory Guide 1.8, "Qualification and Training of Personnel for Nuclear Power Plants."

(3) Regulatory Guide 1.33, "Quality Assurance Program Requirements (Operation)."

(4) Regulatory Guide 1.68, "Initial Test Programs for Water-Cooled Nuclear Power Plants."

(5) Regulatory Guide 1.114, "Guidance to Operators at the Controls and to Senior Operators in the Control Room of a Nuclear Power Unit."

(6) NUREG-0694, "TMI-Related Requirements for New Operating Licenses."

(7) NUREG-0711, "Human Factors Engineering Program Review Model."

(8) NUREG-0718, "Licensing Requirements for Pending Applications for Construction Permits and Manufacturing License."

(9) NUREG-0737, "Clarification of TMI Action Plan Requirements."

(10) NUREG/CR-6838, "Technical Basis for Regulatory Guidance for Assessing Exemption Requests from the Nuclear Power Plant Licensed Operator Staffing Requirements Specified in 10 CFR 50.54(m)."

(11) Generic Letter 86-04, "Policy Statement on Engineering Expertise on Shift," February 1986.

C.I.13.2 *Training*

Issued for Preliminary Use

This section of the FSAR should contain the description and schedule of the training program for reactor operators and senior reactor operators. The licensed operator training program also includes the requalification programs as required in 10 CFR 50.54(i)(I-1) and 5510 CFR 55.59, "Requalification." Within 3 months after either the issuance of an operating license or the date the Commission makes the finding under 10 CFR 52.103(g) of this chapter for a COL, as applicable, the licensee must have in effect an operator requalification program.

In addition, this section of the FSAR should contain the description and schedule of the training program for nonlicensed plant staff.

C.I.13.2.1 Plant Staff Training Program

The FSAR should provide a description of the proposed training program in nuclear technology and other subjects important to safety for the entire plant staff. Regulatory Guide 1.8, "Qualification and Training of Personnel for Nuclear Power Plants," provides guidance on an acceptable basis for relating training programs to plant staff positions. The FSAR should indicate whether this guidance will be followed. If such guidance will not be followed, the FSAR should describe the specific alternative methods that will be used should be described along with a justification for their use. ASection C.I.13.2.2 of this regulatory guide provides a list of Commission regulations, guides, and reports pertaining to training of licensed and unlicensed nuclear power plant personnel is provided in Section 13.2.3.

C.I.13.2.1.1 *Program Description*

The program description should include the following information with respect to the formal training program in nuclear technology and other subjects important to safety (related technical training) for all plant management and supervisory personnel, Llicensed Ssenior Ooperator (SRO) and Llicensed Ooperator (RO) candidates, technicians, and general employees.

The training program descriptions for licensed plant staff should contain the following elements:

(1) A

C.I.13.2.1.1.1 Licensed Plant Staff Training Program

(1) The applicant should provide a description of the proposed training program, including the subject matter of each initial licensed operator training course, the duration of the course (approximate number of weeks personnel are in full-time attendance), the organization teaching the course or supervising instruction, and the titles of the positions for which the course is given. The program descriptions should include a chart showing the proposed schedule for licensing personnel prior to criticality. The schedule should be relative to expected fuel loading and should display the

~~preoperational test period. The submittal should contain a commitment to conduct formal licensed operator, on-the-job training, and simulator training before initial fuel load. The program should distinguish between formal instruction, on-the-job, and simulator training, before and after the initial fuel loading and it should include provisions for training on modifications to plant systems or functions.~~

~~Contingency plans for additional training (i.e., requalification and/or retraining) for individuals to be licensed prior to criticality should be described in the event fuel loading is subsequently delayed until after the date indicated in the FSAR~~ (to be verified during construction).

(2) The subjects covered in the training programs should include, as a minimum, the subjects in 10 CFR 55.31 ~~(how~~, "How to ~~apply), 55.41 (written examination: operators), 55.43 (written examination: senior operators), 55.45 (operating tests),~~Apply"; 10 CFR 55.41, "Written Examination: Operators"; 10 CFR 55.43, "Written Examination: Senior Operators"; 10 CFR 55.45, "Operating Tests"; and Regulatory Guide 1.8 for reactor operators and senior reactor operators as appropriate. The training program should also include provisions for upgrading reactor operator licenses and for licensing senior reactor operators who have not been licensed as reactor operators ~~per~~in accordance with Regulatory Guide 1.8. The training should be based on the use of the systems approach to training (SAT) as defined in 10~~-~~ CFR~~-~~ 55.4, "Definitions."

(3) The licensed operator requalification program should include the content described in 10~~-~~ CFR ~~-~~55.59 or ~~should~~ be based on the use of a ~~systems approach to training (~~SAT~~)~~ as defined in 10 CFR 55.4 (to be verified during construction).

(4) The applicant should describe its program for providing simulator capability for its plants as described in ~~10 CFR 55.31 (how to apply), 55.45 (operating tests), 55.46 (simulation facilities), 50~~10 CFR 55.31, 10 CFR 55.45, 10 CFR 55.46, "Simulation Facilities," 10 CFR 50.34(f)(2)(I), and Regulatory Guide 1.149, "Nuclear Power Plant Simulation Facilities for Use in Operator Training and Licensing Examinations," and how its program meets these requirements and regulatory guidance. In addition, the applicant should describe how it will ensure that its proposed simulator will correctly model its control room (to be verified during construction).

(5) The applicant should describe the means for evaluating training program effectiveness for all licensed operators, in accordance with a ~~systems approach to training~~SAT.

(6) COL applicants should provide implementation milestones for the reactor operator training program~~.~~

~~The training program description for nonlicensed plant staff should include the following elements:~~

~~(1) A~~ (to be verified during construction).

C.I.13.2.1.1.2 Nonlicensed Plant Staff Training Program (to be verified during construction)

(1) The application should include a detailed description of the training programs for nonlicensed personnel and the applicant's commitment to meet the guidelines of Regulatory Guide 1.8 for nonlicensed personnel.

(2) ~~A~~The application should include a detailed description of the training programs developed using a ~~systems approach to training~~SAT, as defined in 10~~-~~ CFR~~-~~ 55.4, for all positions covered by ~~10 CFR 50.120, and a commitment to meet the requirements of 10 CFR 50.120 at least 18 months before fuel load.~~

~~(3) For programs not covered under 10 CFR 50.120, the subject matter of each course, including a syllabus or equivalent course description, the duration of the course (approximate number of weeks personnel are in full-time attendance), the organization teaching the course or supervising~~

Issued for Preliminary Use

~~instruction, and the titles of the positions for which the course is given.~~ 10 CFR 50.120, "Training and Qualification of Nuclear Power Plant Personnel."

(3) The program is verified to distinguish between formal instruction and on-the-job training, before and after fuel loading. The description should include contingency plans for additional training (i.e., requalification and/or retraining) in the event that fuel loading is significantly delayed until after the date indicated in the FSAR. The program should also include provisions for training on modifications to plant systems or functions.

The COL applicant should identify any difference in the training programs for individuals based on the extent of previous nuclear power plant experience. The structuring of training based on experience groups should appropriately address the following categories of personnel experience:

(a) individuals with no previous experience
(b) individuals who have had nuclear experience at facilities not subject to licensing
(c) individuals who have had experience at comparable nuclear facilities

The program should include a commitment to conduct an onsite formal training program and on-the-job training such that sufficient plant staff to ensure safe plant operations will be qualified before the initial fuel loading.

Issued for Preliminary Use

(4) ~~A~~The application should include a detailed description of the fire protection training and retraining for the initial plant staff and replacement personnel and a commitment to conduct an initial fire protection training program. The program should address the following:

(a) the training planned for each member of the fire brigade

(b) the type and frequency of periodic firefighting drills, including during construction

(c) the training provided for all remaining staff members, including personnel responsible for maintenance and inspection of fire protection equipment

(d) the indoctrination and training provided for people temporarily assigned onsite duties during shutdown and maintenance outages, particularly persons allowed unescorted access

(e) the training provided for the fire protection staff members~~. T~~ and verification of the program description ~~is verified to include~~of the course of instruction, the number of hours of each course, and the organization conducting the training~~.~~

(f) provisions for indoctrination of construction personnel, as necessary

(g) a commitment to verify that initial fire protection training will be completed prior to receipt of fuel at the site~~.~~

(5) The applicant's plans for conducting a position task analysis to verify that the tasks performed by persons in each position are defined, and ~~that~~ the training, in conjunction with education and experience, is identified to provide assurance that the tasks can be effectively carried out.

(6) For all plant personnel identified in FSAR Section 13.1.2, the application should include the proposed subject matter of each course~~, the duration of the course (approximate number of weeks personnel are in full-time attendance), the organization teaching the course or supervising instruction,~~ and the titles of the positions for which the course is given.

(7) ~~A~~The application should include a description of the provisions for training employees and nonemployees whose assistance may be needed in a radiological emergency, as required by ~~10 CFR 50, Appendix E, Section II.F.~~

~~(8) A~~Section II.F of Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities," to 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities."

(8) The application should include a description of the training program for the individual(s) responsible for the formulation and assurance of the implementation of the fire protection program.

(9) The application should identify the proposed means for evaluating the training program effectiveness for all employees and personnel covered by 10 CFR 50.120 in accordance with the ~~systems approach to training~~SAT.

(10) ~~A description of~~The application should describe the training program for employees and non~~-~~employees to ~~assure~~ensure the effective implementation of the physical protection program.

C.I.13.2.1.2 ***Coordination with Preoperational Tests and Fuel Loading***

The FSAR should 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 ~~following plant criticality~~. In addition, the applicant should include contingency plans for individuals applying for licenses prior to criticality in the event fuel loading is substantially delayed from the date indicated in the FSAR.

C.I.13.2.2 Applicable NRC Documents

The NRC regulations, regulatory guides, and reports listed below provide information pertaining to the training of nuclear power plant personnel. The FSAR should indicate the extent to which the applicable portions of the guidance provided will be used and should justify any exceptions. ~~M~~The applicant may reference in this section material discussed elsewhere in the FSAR ~~may be referenced~~.

(1) 10 CFR Part 19, "Notices, Instructions and Reports to Workers: Inspections and ~~Investigations."~~Investigations"

(2) 10 CFR Part 26, "Fitness for Duty ~~Programs."~~Programs"

(3) 10 CFR Part 50, "Domestic Licensing of Production and Utilization ~~Facilities."~~Facilities"

Issued for Preliminary Use

(4) 10 CFR Part 50, Appendix E, "Emergency Planning and Preparedness for Production and Utilization ~~Facilities."~~Facilities"

(5) 10 CFR Part 52, "Early Site Permits; Standard Design Certifications; and Combined Licenses for Nuclear Power ~~Plants."~~Plants"

(6) 10 CFR Part 55, "Operators' ~~Licenses."~~Licenses"

(7) Regulatory Guide 1.8, "Qualification and Training of Personnel for Nuclear Power ~~Plants."~~Plants"

(8) Regulatory Guide 1.149, "Nuclear Power Plant Simulation Facilities for Use in Operator Training and Licensing ~~Examinations."~~Examinations"

(9) NUREG-0711, "Human Factors Engineering Program Review ~~Model."~~Model"

(10) NUREG-1021, "Operator Licensing Examination Standards for Power ~~Reactors."~~Reactors"

(11) NUREG-1220, "Training Review Criteria and ~~Procedures."~~Procedures"

(12) Generic Letter 86-04, "Policy Statement on Engineering Expertise on Shift," ~~February 1986.~~

~~(13) Regulatory Guide 1.134, "Medical Evaluation of Licensed Personnel at Nuclear Power Plants."~~

issued February 1986

Issued for Preliminary Use

C.I.13.3 *Emergency Planning*

This section of the FSAR should describe the applicant's plans for coping with emergencies pursuant to Subpart C, "Combined Licenses," of 10 CFR Part 52, which sets out the requirements applicable to issuance of ~~combined licenses (~~COLs~~)~~ for nuclear power facilities. Specifically, ~~10 CFR 52.77, 10 CFR 52.79, and 10 CFR 52~~10 CFR 52.77, "Contents of Applications; General Information," 10 CFR 52.79, and 10 CFR 52.80 identify the requirements related to emergency plans that ~~should be addressed in~~ the COL application should address. The NRC's standards for review of applications and issuance of COLs are provided in ~~10 CFR 52.81, 10 CFR 52.83, and 10 CFR 52.97.~~10 CFR 52.81, "Standards for Review of Applications"; 10 CFR 52.83, "Finality of Referenced NRC Approvals"; and 10 CFR 52.97, "Issuance of Combined Licenses." The COL application, which includes the FSAR and other information (e.g., State and local emergency plans), should also address the emergency planning requirements contained in 10 CFR 50.33(g), 10 CFR 50.34(f), and 10 CFR 52.79(a)(21). In addition, the COL application should address 10 CFR 50.54(t)(1), as it relates to implementation of the emergency preparedness (EP) program.

In addition, the application should address the requirements of 10 CFR 50.47, "Emergency Plans," including the ~~sixteen~~16 standards in 10 CFR 50.47(b), 10 CFR 50.72(a)(3), 10 CFR 50.72(a)(4), 10 CFR 50.72(c)(3), 10 CFR 73.71, the requirements in Appendix E ~~of~~to 10 CFR Part 50, and the Commission Orders of February 25, 2002, relating to security events, ~~in order for~~so that the staff ~~to~~can make a positive finding that there is reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency, including a security event. NUREG-0654/FEMA-REP-1, ~~Rev.~~Revision 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," issued November 1980 (supplemented by a March 2002 addenda), which is a joint NRC and ~~Department of Homeland Security~~the Federal Emergency Management Agency (~~DHS~~FEMA) document, establishes an acceptable basis for NRC licensees and State and local governments to develop integrated radiological emergency plans and improve their overall EP state~~ of emergency preparedness~~. Regulatory Guide 1.101, "Emergency Planning and Preparedness for Nuclear Power Reactors," endorses the criteria and recommendations in NUREG-0654/FEMA-REP-1, ~~Rev.~~Revision

1, as methods acceptable to the NRC staff for complying with the standards in 10 CFR 50.47. The applicant should specify the revision number and date of Regulatory Guide 1.101 used.

As required by 10 CFR 50.47(b)(4) requires, an applicant must have a standard emergency classification and action level scheme. Section IV.C, "Activation of Emergency Organization," of Appendix E to 10 CFR Part 50 identifies the four emergency classes. Section C.IV.B, "Assessment Actions," of Appendix E to 10 CFR Part 50 also requires emergency action levels. The emergency plan should include the emergency classification level scheme described in Appendix 1 and Supplement 3, "Criteria for Protective Action Recommendations for Severe Accidents," to NUREG-0654NUREG-0654/FEMA-REP-1, Revision 1, issued July 1996. It is expected that any new application will use an emergency action level scheme similar to that described in Revision 4 of Nuclear Energy Institute (NEI) 99-01, "Methodology for Development of Emergency Action Levels," datedissued January 2003, which was endorsed in Revision 4 of Regulatory Guide 1.101, "Emergency Planning and Preparedness for Nuclear Power Reactors," dated October 2003. However, Revision 4 of NEI 99-01 is not considered to be entirely applicable to advanced light-water reactor designs. Even thought the majority of Revision 4 of NEI 99-01 may be applicable to any reactor design and should be used, the unique characteristics of the new reactor should be addressed in the development of emergency action levels specific to the new plant and the site. Section IV.B, "Assessment Actions," of Appendix E to 10 CFR Part 50 also requires that the initial emergency actions be discussed and agreed on by the State and local governmental authorities. The applicant should provide some form of confirmation of the agreement, such as a letter signed by State and local governmental authorities, in the emergency plan, if the applicant provides emergency action levels different from those for the existing reactor(s) on the site.

Issued for
Preliminary Use

As addressed in Section C.I.2, the information provided in the application should also contribute to a determination that the exclusion area and the low-population zone (LPZ) for the site comply with 10 CFR Part 100, "Reactor Site Criteria," and address whether there are significant impediments to the development of emergency plans, as required by 10 CFR 100.21(g).

DHS10 CFR 100.21(g). It is acceptable to satisfy this requirement by referencing the appropriate sections of the FSAR that address site characteristics.

In addition, the application should provide a projections of the population within the 10-mile EPZ throughout the requested duration of the application; including a discussion of the sources of information and methodology that supports the population projection. The application should specifically address whether the projected population creates a significant impediment to the development of emergency plans over the requested duration of the ESP application, including how it would affect the ETE. If a significant impediment is created, then the applicant should identify measures that would, when implemented, mitigate or eliminate the significant impediment.

Issued for Preliminary Use

FEMA is the Federal agency with the lead responsibility for oversight of offsite nuclear emergency planning and preparedness. These responsibilities are now executed by the Radiological Emergency Preparedness (REP) Program (formerly held by the Federal Emergency Management Agency (FEMA)). The REP Program now resides within the Preparedness Directorate of DHS. While the responsibility for evaluating the emergency plans and procedures is shared between the DHSFEMA and the NRC under a Mmemorandum of Uunderstanding (MOU), which is reflected in 44 CFR Part 353, the final decision-makingdecision making authority on the overall adequacy of emergency planning and preparedness rests with the NRC. In addition to the NRC's regulations (described above), the COL application needs to include the applicable State, Tribal, and local plans and procedures that address the relevant DHSFEMA requirements contained in 44 CFR Parts 350, 351, and 352,44 CFR Part 350, "Review and Approval of State and Local Radiological Emergency Plans and Preparedness"; 44 CFR Part 351, "Radiological Emergency Planning and Preparedness"; and 44 CFR Part 352, "Commercial Nuclear Power Plants: Emergency Preparedness Planning," as well as associated REP guidance documents.

Where an applicant is unable to make arrangements with State and local governmental agencies with emergency planning responsibilities and obtain the certifications required by 10 CFR 52.79(a)(22)(i), due to non-participation of State and/or local governments, the applicant should discuss its efforts to make such arrangements and describe any compensatory measures the applicant has taken or plans to take because of the lack of such arrangements. To the extent that State and local governments fail to participate, the application must contain information and a utility plan in accordance with 10 CFR 52.79(a)(22)(ii) and 10 CFR 50.47(c)(1). The utility plan must demonstrate compliance with the offsite emergency planning requirements, sufficient to show that the proposed plans nonetheless provide reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency at the site. Applicants should consult Supplement 1 to NUREG-0654/FEMA-REP-1, Rev. 1, "Criteria for Utility Offsite Planning and Preparedness," should be consultedto NUREG-0654/FEMA-REP-1, Revision 1, issued November 1987, to develop offsite plans and preparedness when State and/or local governments decline to participate in emergency planning and preparedness.

Pursuant to 10 CFR 52.73, "Relationship to Subparts A and B," the FSAR may reference an early site permit (ESP) for the proposed site or a certified design, or both, and thereby incorporate the emergency planning aspects approved in those prior licensing actions into the COL application. The FSAR should address any conditions or requirements in the referenced ESP or certified design that relate to emergency planning, such as COL action items, permit conditions, or inspection, test, analysis, and acceptance criterion/criteria (ITAAC).+ For a referenced ESP, 10 CFR 52.79(b)(4) requires that the applicant must

include any new or additional information that updates or corrects the information that was provided under 10 CFR 52.17(b), and discuss whether the new or additional information materially changes the bases for compliance with the applicable requirements. If the proposed facility emergency plans incorporate existing emergency plans or major features of emergency plans, the application must identify changes to the emergency plans or major features of emergency plans, following issuance of the ESP, that have been incorporated into the proposed facility emergency plans, and that constitute a decrease in effectiveness under 10 CFR 50.54(q). As stated in 10 CFR 52.79(b)(5), if complete and integrated emergency plans are approved as part of the ESP, new certifications meeting the requirements of 10 CFR 52.79(a)(22) are not required; however, ~~updates are required~~the NRC does require updates to incorporate new and significant information.

C.I.13.3.1 Combined License Application and Emergency Plan Content

At the COL application stage, the applicant should submit a comprehensive (i.e., complete and integrated) emergency plan ~~should be submitted~~. This plan should be a physically separate document identified as Section 13.3 of the FSAR, and may incorporate by reference various State and local emergency plans or other relevant materials. The application should include a copy of all referenced plans or other materials that serve to establish compliance with the emergency planning standards and requirements, including an analysis of the time required to evacuate and for taking other protective actions for various sectors and distances within the plume exposure pathway emergency planning zone (EPZ) for transient and permanent populations~~;~~ (i.e., an evacuation time estimate (ETE)). The application should also include a table of contents and a cross-reference to applicable regulatory requirements, guidance documents, generic communications, and other criteria that are used to develop the application and emergency plan. The cross-reference should indicate where the applicant's plans address specific criteria in 10 CFR 50.72(a)(3), 10 CFR 50.72(a)(4), 10 CFR 50.72(c)(3), Appendix E to 10 CFR Part 50, 10 CFR 73.71~~(a)~~, and NUREG-0654/FEMA-REP-1, ~~Rev. 1 are addressed in the applicant's plans~~Revision 1. The intent of this cross-reference is to ~~be an~~ aid in the review process~~,~~ and facilitate the coordinated development and review of emergency plans that are part of the application.

Issued for Preliminary Use

The emergency plan, including implementing procedures (if applicable), should address the standards and requirements of 10 CFR 50.47 and Appendix E to 10 CFR Part 50. Ordinarily, lower tier documents such as emergency planning implementing procedures (EPIPs) are not considered to be part of the emergency plan. However, any relocation from an emergency plan of an ~~emergency preparedness (~~EP~~)~~ requirement to a lower tier document must be explained.[1] The plan should describe the location of relocated information; the applicant should ~~be described in the plan, and~~ administratively ~~controlled~~control the plan to ensure that subsequent changes to those documents are reviewed in accordance with 10 CFR 50.54(q). If detailed EPIPs are not submitted at the time of the COL application, the applicant may address the requirement in Part V of Appendix E for the submission of detailed emergency plan implementing procedures ~~may be addressed~~ as either a proposed license condition or an emergency planning ITAAC (see ~~s~~ Section C.I.13.3.3~~, below,~~ of this guide and ITAAC 1~~5~~7.1 in Table B1 of Section C.II.~~2~~1, Appendix B).

The applicant should address the various generic communications and Commission ~~O~~orders that are in effect and applicable to emergency planning in support of an ~~O~~operating ~~L~~license (see the list of Generic Communications identified in ~~Subsection~~ Section C.I.13.3.4~~, below~~ of this guide).[2] The emergency plan

---

[1] See Regulatory Issue Summary (RIS) 2005-02, "Clarifying the Process for Making Emergency Plan Changes," dated February 14, 2005.

[2] See also 10 CFR 52.79(a)(37), which requires that a COL application contain information that demonstrates how operating experience insights from generic letters and bulletins

should address any subsequently issued ~~G~~generic ~~L~~letters and Commission ~~O~~orders that pertain to emergency planning and preparedness. Sections C.I.1 and C.IV.8 provide additional guidance associated with generic safety issues and generic communications.

Under 10~~-~~ CFR~~-~~ 50.34(f), an application for a ~~combined license~~COL must demonstrate compliance with the technically relevant portions of the requirements in 10~~-~~ CFR~~-~~ 50.34(f)(1) through 10~~-~~ CFR ~~-~~50.34(f)(3). For those applicants that are subject to 10~~-~~ CFR~~-~~ 50.34(f), the application must address the TMI-related requirements in 10~~-~~ CFR~~-~~ 50.34(f)(2)(iv), 10 CFR 50.34(f)(2)(viii), 10 CFR 50.34(f)(2)(xvii), and 10 CFR 50.34(f)(2)(xxv). These requirements may be met by satisfying the comparable requirements in 10~~-~~ CFR~~-~~ 50.47 and Appendix E ~~of~~to 10~~-~~ CFR~~-~~ Part 50. The applicant should consult Supplement 1~~ to NUREG-0737~~, "Requirements for Emergency Response Capability," ~~should be consulted~~to NUREG-0737, issued January 1983, regarding TMI-related items.

The FSAR should also address an emergency classification and action level scheme, as required by 10~~-~~ CFR~~-~~ 50.47(b)(4). ~~T~~Revisions 2, 3, and 4 of Regulatory Guide 1.101 address the various emergency action level schemes that ~~have been found~~the staff finds acceptable ~~by the NRC staff~~ for complying with NRC's regulations~~ are addressed Revisions 2, 3, and 4 of Regulatory Guide 1.101~~. The applicant may propose means other than those specified in Regulatory Guide 1.101. The proposal should describe and justify how the proposed method meets the applicable regulations.

The applicant should address the NRC ~~O~~orders issued February 25, 2002, as well as any subsequent NRC guidance (or any NRC endorsed industry guidance developed in response to issues related to implementation of the ~~O~~orders), to determine what security-related aspects of emergency planning and preparedness must be addressed in the emergency plan. Any information submitted to the NRC that is proprietary, sensitive, or safeguards ~~information~~related should be marked appropriately as required by 10 CFR 2.390. (~~Security-based~~Section C.I.13.6 also addresses security-based events and considerations~~ are also addressed in Section C.I.13.6~~.)

In accordance with 10~~-~~ CFR~~-~~ 52.79(a)(41), the application must include an evaluation of the facility against the Standard Review Plan (SRP) (i.e., NUREG-0800, "Standard Review Plan for the Review of Safety Analyses for Nuclear Power Plants") revision in effect ~~six~~6 months prior to the docket date of the application. For those aspects of the emergency plan that differ from the SRP acceptance criteria, the applicant must identify and describe the differences~~-~~, and discuss how the proposed alternative provides an acceptable method of complying with the applicable rules or regulations that underlie the corresponding SRP acceptance criteria.

Emergency planning information (including supporting organization agreements) submitted in support of a COL application, as well as incorporated elements of an existing emergency plan for multi~~-~~unit sites (discussed below), should (1) be applicable to the proposed site, (2) be ~~up-to-date~~up to date when the application is submitted, and (3) reflect use of the proposed site for possible construction of a new reactor (or reactors). The application should include adequate justification (e.g., an appropriate explanation or analysis) in support of the use of such information. The application should also address how the proposed plan incorporates existing elements~~ have been incorporated into the proposed plan~~, as it relates to expanding the existing program to include one or more additional reactors, and identify any impact on the adequacy of the existing ~~emergency preparedness~~EP program for the operating reactor(s).

---

issued up to 6 months before the docket date of the application, or comparable international operating experience, have been incorporated into the plant design.

Issued for Preliminary Use

~~C~~The application should include copies of letters of agreement (or other certifications) from the State and local governmental agencies with emergency planning responsibilities~~ should be included in the application~~. The agreements should clearly address the future presence of an additional reactor (or reactors) at the site. The application should discuss any ambiguous or incomplete language in the agreements. If an existing letter of agreement is broad enough to cover an expanded site use and does not need to be revised, the application should also include a separate correspondence (or other form of communication with the organization) that addresses the new reactor(s) and the organization's acceptance of expanded responsibilities.

C.I.13.3.2 Emergency Plan Considerations for Multi-~~U~~unit Sites

If the new reactor will be located on, or near, an operating reactor site with an existing emergency plan (i.e., multi~~-~~unit site), and the emergency plan for the new reactor will include various elements of the existing plan, the application should do the following:

(1) Address the extent to which the existing site's emergency plan will be credited for the new unit(s), including how the existing plan would be able to adequately accommodate an expansion to include one or more additional reactors~~,~~ and include any required modification of the existing emergency plan for staffing, training, ~~EALs~~emergency action levels, ~~etc~~and the like.

(2) Include a review of the proposed extension of the existing site's emergency plan pursuant to 10 CFR 50.54(q), to ensure that the addition of a new reactor(s) would not decrease the effectiveness of the existing plans and the plans, as changed, would continue to meet the standards of 10~~-~~ CFR~~-~~ 50.47(b) and the requirements of Appendix E to 10~~-~~ CFR~~-~~ Part 50.

(3) Describe any required updates to existing emergency facilities and equipment, including the ~~A~~alert ~~N~~notification ~~S~~system~~ (ANS)~~.

(4) Incorporate any required changes to the existing onsite and offsite emergency response arrangements and capabilities with State and local authorities~~,~~ or private organizations.

(5) Justify the applicability of the existing 10-mile plume exposure EPZ and 50-mile ingestion control EPZ.

(6) Address the applicability of the existing ETE or provide a revised ETE, if appropriate~~;~~.

(7) If applicable, address the exercise requirements for co~~-~~located licensees, in accordance with Section IV.F.2.c of Appendix E to 10~~-~~ CFR~~-~~ Part 50, and the conduct of ~~emergency preparedness~~EP activities and interactions discussed in Regulatory Guide 1.101, ~~Rev.~~Revision 5.

(8) If applicable, include ~~inspections, tests, analyses, and acceptance criteria (~~ITAAC~~)~~ which will address any changes to the existing emergency plans, facilities and equipment, and programs that are to be implemented, along with a proposed schedule.

(9) Describe how emergency plans, to include security, will be integrated and coordinated with emergency plans of adjacent sites.

C.I.13.3.3 Emergency Planning Inspections, Tests, Analyses, and Acceptance Criteria

~~10 CFR 52.80(b)~~As require~~s that~~d by 10 CFR 52.80(a), an application for a ~~combined license~~COL must include proposed emergency planning ITAAC ~~which~~that are necessary and sufficient to provide reasonable assurance that, if the licensee performs inspections, tests, and analyses a~~re performed (by the licensee) and~~nd meets the acceptance criteria~~ met~~, the facility has been constructed and will operate in

Issued for Preliminary Use

conformity with the ~~combined license~~COL, the provisions of the Atomic Energy Act, and the NRC's regulations.

The ~~combined license~~COL applicant ~~shall~~must develop emergency planning ITAAC to address implementation of elements of the emergency plan, in accordance with the guidance provided in Sections C.I.14 and C.II.~~2~~1 of this ~~R~~regulatory ~~G~~guide. ~~A~~This section of the FSAR should reference ~~to~~ the emergency planning ITAAC developed for the ~~combined license application should be provided in this section of the FSAR. Table C.II.2-B1~~COL application. Table C.II.1-B1 of Section C.II.~~2~~1, Appendix B, provides an acceptable set of generic emergency planning ITAAC that an applicant may use to develop application-specific ITAAC tailored to the specific reactor design and emergency planning program requirements. A ~~smaller~~shorter set of ITAAC is acceptable if the application contains information that fully addresses ~~emergency preparedness~~EP requirements associated with any of the generic ITAAC in Table C.II.~~2-B1~~1-B1 of Section C.II.~~2~~1, Appendix B, that are not used.[3] Table~~-~~ C.II.~~2-B1~~1-B1 is not ~~all-inclusive,~~all inclusive or exclusive of other ITAAC an applicant may propose. Additional plant-specific emergency planning ITAAC (i.e., beyond those listed in Table B1) may be proposed, and ~~they~~the NRC staff will ~~be examined~~ examine them to determine their acceptability on a case-by-case basis.

Issued for Preliminary Use

Section C.I.14.3 provides a discussion on ITAAC proposed in a COL application. The COL applicant should also refer to the guidance provided in Section C.II.~~2~~1 for development of ITAAC proposed for a COL application.

C.I.13.3.4 References

(1) 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities."

(2) 10 CFR 50.33, "Contents of Applications; General Information."

(3) 10 CFR 50.34, "Contents of Applications; Technical Information."

(4) 10 CFR 50.47, "Emergency Plans."

(5) 10 CFR 50.54, "Conditions of Licenses."

(6) 10 CFR 50.72, "Immediate Notification Requirements for Operating Nuclear Power Reactors."

(7) 10 CFR Part 50, Appendix A, "General Design Criteria for Nuclear Power Plants."

(8) 10 CFR Part 50, Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities."

(9) 10 CFR Part 52, "Early Site Permits; Standard Design Certifications; and Combined Licenses for Nuclear Power Plants."

(10) 10 CFR Part 52, Subpart C, "Combined Licenses."

(11) 10 CFR 52.77, "Contents of Application; General Information."

(12) 10 CFR 52.79, "Contents of Application; Technical Information."

(13) 10 CFR 52.81, "Standards for Review of Applications."

---

[3] See SECY-05-0197, "Review of Operational Programs in a Combined License Application and Generic Emergency Planning Inspections, Tests, Analyses, and Acceptance Criteria," dated October 28, 2005~~;~~, and ~~SRM SECY-05-0197,~~its associated staff requirements memorandum dated February 22, 2006. The generic emergency planning ITAAC in SECY-05-0197 formed the basis for Table C.II.~~2-B1.~~1-B1.

(14) 10 CFR 52.83, ~~"Applicability~~"Finality of ~~Part 50 Provisions~~Referenced NRC Approvals."

(15) 10 CFR 52.97, "Issuance of ~~c~~Combined ~~l~~Licenses."

(16) 10 CFR 73.71, "Reporting of Safeguards Events."

(17) 10 CFR Part 100, "Reactor Site Criteria."

(18) 10 CFR ~~Part~~ 100.21, "Non-Seismic Siting Criteria."

(19) 44 CFR Part 350, "Review and Approval of State and Local Radiological Emergency Plans and Preparedness."

(20) 44 CFR Part 351, "Radiological Emergency Planning and Preparedness."

(21) 44 CFR Part 352, "Commercial Nuclear Power Plants: Emergency Preparedness Planning."

(22) 44 CFR Part 353, Appendix A, "Memorandum of Understanding ~~B~~between NRC and FEMA Relating to Radiological Emergency Planning and Preparedness."

(23) Regulatory Guide 1.23, ~~Second proposed r~~Revision 1~~, "Meteorological Measurement Program for Nuclear Power Plants," April 1986 [Draft Regulatory Guide DG-XXXX~~, "Meteorological Monitoring Requirements for Nuclear Power Plants," ~~August 17, 2006](ADAMS Accession No. ML003739962)~~March 2007.

(24) Regulatory Guide 1.97, Rev. 3, "Instrumentation for Light-Water-Cooled Nuclear Power Plants to Assess Plant and Environs Conditions During and Following an Accident," May 1983 (ADAMS Accession No. ML003740281).

(25) Regulatory Guide 1.70, Rev. 3, "Standard Format and Content of Safety Analysis Report for Nuclear Power Plants," November 1978 (ADAMS Accession Nos. ML003740072~~-~~; ML003740108~~-~~ ~~&~~; and ML003740116).

(26) Regulatory Guide 1.101, Rev. 2, "Emergency Planning and Preparedness for Nuclear Power Reactors," October 1981.

(27) Regulatory Guide 1.101, Rev. 3, "Emergency Planning and Preparedness for Nuclear Power Reactors," August 1992.

(28) Regulatory Guide 1.101, Rev. 4, "Emergency Planning and Preparedness for Nuclear Power Reactors," July 2003.

(29) Regulatory Guide 1.101, Rev. 5, "Emergency Planning and Preparedness for Nuclear Power Reactors," September 2004 (ADAMS Accession No. ML050730286).

(30) Regulatory Guide 4.7, Rev. 2, "General Site Suitability Criteria for Nuclear Power Stations," April 1998 (ADAMS Accession No. ML003739894).

(31) Regulatory Guide 5.62, Rev. 1, "Reporting of Safeguards Events," November 1987 (ADAMS Accession No. ML003739271).

(32) NUREG-0396, EPA 520/1-78-016, "Planning Basis for the Development of State and Local Government Radiological Emergency Response Plans in Support of Light Water Nuclear Power Plants," December 1978.

(33) 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~~—~~ Final Report," November 1980 (supplemented by the March 2002 addenda).

Issued for Preliminary Use

(34) Supplement 1 to NUREG-0654/FEMA-REP-1, Rev. 1, "Criteria for Utility Offsite Planning and Preparedness," November 1987.

(35) Supplement 2 to NUREG-0654/FEMA-REP-1, Rev. 1, "Criteria for Emergency Planning in an Early Site Permit Application," April 1996 (ADAMS Accession No. ML050130188).

(36) Supplement 3 to NUREG-0654/FEMA-REP-1, Rev. 1, "Criteria for Protective Action Recommendations for Severe Accidents," July 1996.

(37) NUREG-0660, "NRC Action Plan Development as a Result of the TMI-2 Accident," May 1980.

(38) NUREG-0696, "Functional Criteria for Emergency Response Facilities," February 1981.

(39) NUREG-0711, Human Factors Engineering Review Model, February 2004.

(~~39~~40) NUREG-0718, Rev. 2, "Licensing Requirements for Pending Applications for Construction Permits and Manufacturing Licenses," January 1982.

(4~~0~~1) NUREG-0737, "Clarification of TMI Action Plan Requirements," October 30, 1980.

(4~~1~~2) Supplement 1 to NUREG-0737, "Requirements for Emergency Response Capability," January 1983.

(4~~2~~3) NUREG-0800, "Standard Review Plan for the Review of Safety Analyses for Nuclear Power Plants," ~~[~~March 2007~~]~~.

(4~~3~~4) NUREG-0814, "Methodology for Evaluation of Emergency Response Facilities," August 1981.

(4~~4~~5) NUREG-0835, "Human Factors Acceptance Criteria for the Safety Parameter Display System," October 1981.

(4~~5~~6) NUREG-0933, "A Prioritization of Generic Safety Issues," August 2004.

(4~~6~~7) NUREG-1022, Rev. 2, "Event Reporting Guidelines~~—~~10 CFR 50.72 and 50.73," October 2000.

(4~~7~~8) NUREG-1394, Rev. 1, "Emergency Response Data System (ERDS) Implementation," June 1991.

(4~~8~~9) NUREG-1793, Vol. 2, "Final Safety Evaluation Report Relating to Certification of the AP1000 Standard Design," Section 13.3, "Emergency Planning," September 2004.

(~~49~~50) NUREG/CR-4831 (PNL-7776), "State of the Art in Evacuation Time Estimate Studies for Nuclear Power Plants," March 1992.

(5~~0~~1) NUREG/CR-6863 (SAND2004-5900), "Development of Evacuation Time Estimate Studies for Nuclear Power Plants," January 2005.

(5~~1~~2) NUREG/CR-6864, Vol. 1 (SAND2004-5901), "Identification and Analysis of Factors Affecting Emergency Evacuations~~—~~Main Report," January 2005.

(5~~2~~3) SECY-91-041, "Early Site Permit Review Readiness," February 13, 1991 (ADAMS Accession No. ML003781623).

(5~~3~~4) SECY-05-0197, "Review of Operational Programs in a Combined License Application and Generic Emergency Planning Inspections, Tests, Analyses, and Acceptance Criteria," October 28, 2005 (ADAMS Accession No. ML052770225).

(5~~4~~5) SRM on SECY-05-0197, "Review of Operational Programs in a Combined License Application and Generic Emergency Planning Inspections, Tests, Analyses, and Acceptance Criteria," February 22, 2006 (ADAMS Accession No. ML060530316).

Issued for Preliminary Use

(5~~5~~6) SECY-06-0098, "Licensee Response to Demand for Information Regarding Mitigation Strategies Required ~~U~~under Section B.5.b of the Orders Dated February 25, 2002, and Staff Recommendations for Follow-up Action," May 2, 2005 (~~S~~safeguards document).

(5~~6~~7) NRR Review Standard, RS-002, "Processing Applications for Early Site Permits," May 3, 2004 (ADAMS Accession No. ML040700236).

(5~~7~~8) NRC Office Procedure LIC-101, Rev. 3, "License Amendment Review Procedures," February 9, 2004 (ADAMS Accession No. ML040060258).

(5~~8~~9) NRC Office Procedure LIC-200, Rev. 1, "Standard Review Plan (SRP) Process," May 8, 2006 (ADAMS Accession No. ML060300069).

(~~59~~60) H.R. 5005, "Homeland Security Act of 2002," P.L. 107-296, enacted November 25, 2002.

(6~~0~~1) H.R. 6, "Energy Policy Act of 2005," P.L. 109-58, enacted August 8, 2005.

(6~~1~~2) FEMA "Interim Radiological Emergency Preparedness (REP) Program Manual," August 2002. (See also DHS successor document (under development)~~, "REP~~ entitled "REP Program Planning Guidance Document: ~~"Radiological~~"Radiological Emergency Preparedness: Planning ~~Guidance,"~~"Guidance"" (~~see~~ 68 FR 9669, February 28, 2003).)

(6~~2~~3) NRC Commission Orders of February 25, 2002, to all operating commercial nuclear power plants, relating to terrorist threats.

Generic Communications

(6~~3~~4) Administrative Letter (AL) 94-04, "Change of the NRC Operations Center Commercial Telephone ~~&~~and Facsimile Numbers," April 11, 1994.

(6~~4~~5) AL 94-07, "Distribution of Site-Specific and State Emergency Planning Information," May 6, 1994.

(6~~5~~6) AL 94-16, "Revision of NRC Core Inspection Program for Annual Emergency Preparedness Exercise," November 30, 1994.

(6~~6~~7) Bulletin (BL) 79-18, "Audibility Problems Encountered on Evacuation of Personnel from High-Noise Areas," August 7, 1979.

(6~~7~~8) BL 80-15, "Possible Loss of Emergency Notification System (ENS) with Loss of Offsite Power," June 18, 1980.

(6~~8~~9) BL 05-02, "Emergency Preparedness and Response Actions for Security-Based Events," July 18, 2005 (ADAMS Accession No. ML051740058).

(~~69~~70) Generic Letter (GL) 82-33, "Supplement 1 to NUREG-0737~~—~~ —Requirements for Emergency Response Capability (Generic Letter 82-33)," December 17, 1982.

(7~~0~~1) GL 91-14, "Emergency Telecommunications," September 23, 1991 (ADAMS Accession No. ML031140150).

(7~~1~~2) Information Notice (IN) 81-34, "Accidental Actuation of Prompt Public Notification System," November 16, 1981.

(7~~2~~3) IN 85-41, "Scheduling of Pre-Licensing Emergency Preparedness Exercises," May 25, 1985.

(7~~3~~4) IN 85-44, "Emergency Communication System Monthly Test," May 30, 1985.

(7~~4~~5) IN 85-52, "Errors in Dose Assessment Computer Codes and Reporting Requirements ~~U~~under 10 CFR~~-~~ Part 21," July 10, 1985.

Issued for Preliminary Use

(7~~5~~6) IN 85-80, "Timely Declaration of an Emergency Class, Implementation of an Emergency Plan, and Emergency Notifications," October 15, 1985.

(7~~6~~7) IN 86-18, "NRC On-Scene Response ~~D~~during a Major Emergency," March 26, 1986.

(7~~7~~8) IN 86-43, "Problems with Silver Zeolite Sampling of Airborne Radioiodine," June 10, 1986.

(7~~8~~9) IN 86-55, "Delayed Access to Safety-Related Areas and Equipment ~~D~~during Plant Emergencies," July 10, 1986.

(~~79~~80) IN 86-98, "Offsite Medical Services," December 2, 1986.

(8~~0~~1) IN 87-54, "Emergency Response Exercises (Off-Year Exercises)," October 23, 1987.

(8~~1~~2) IN 87-58, "Continuous Communications Following Emergency Notification," November 16, 1987.

(8~~2~~3) IN 88-15, "Availability of U.S. Food and Drug Administration (FDA)-Approved Potassium Iodide for Use in Emergencies Involving Radioactive Iodine," April 18, 1988.

(8~~3~~4) IN 89-72, "Failure of Licensed Senior Operators to Classify Emergency Events Properly," October 24, 1989.

(8~~4~~5) IN 90-74, "Information on Precursors to Severe Accidents," December 4, 1990.

(8~~5~~6) IN 91-64, "Site Area Emergency Resulting from a Loss of Non-Class 1E Uninterruptible Power Supplies," October 9, 1991.

(8~~6~~7) IN 91-64, Supplement 1, "Site Area Emergency Resulting from a Loss of Non-Class 1E Uninterruptible Power Supplies," October 7, 1992.

(8~~7~~8) IN 91-77, "Shift Staffing at Nuclear Power Plants," November 26, 1991.

(8~~8~~9) IN 92-32, "Problems Identified with Emergency Ventilation Systems for Near-Site (~~W~~within 10 Miles) Emergency Operations Facilities and Technical Support Centers," April 29, 1992.

(~~89~~90) IN 92-38, "Implementation Dat~~e~~a for the Revision to the EPA Manual of Protective Action Guides and Protective Actions for Nuclear Incidents (EPA-400-R-92-001)," May 12, 1992.

(9~~0~~1) IN 93-53, "Effect of Hurricane Andrew on Turkey Point Nuclear Generating Station and Lessons Learned," July 20, 1993.

(9~~1~~2) IN 93-81, "Implementation of Engineering Expertise on Shift," October 12, 1993.

(9~~2~~3) IN 93-94, "Unauthorized Forced Entry into the Protected Area at Three Mile Island Unit 1 on February 7, 1993."

(9~~3~~4) IN 94-27, "Facility Operating Concerns Resulting from Local Area Flooding," March 31, 1994.

(9~~4~~5) IN 95-23, "Control Room Staffing Below Minimum Regulatory Requirements," April 24, 1995.

(9~~5~~6) IN 95-48, "Results of Shift Staffing Study," October 10, 1995.

(9~~6~~7) IN 96-19, "Failure of Tone Alert Radios ~~t~~To Activate When Receiving a Shortened Activation Signal," April 2, 1996.

(9~~7~~8) IN 97-05, "Offsite Notification Capabilities," February 27, 1997.

(9~~8~~9) IN 98-20, "Problems with Emergency Preparedness Respiratory Programs," June 3, 1998.

(~~99~~100) IN 02-14, "Ensuring a Capability to Evacuate Individuals, Including Members of the Public, from the Owner-Controlled Area," April 8, 2002.

Issued for Preliminary Use

(10~~0~~1) IN 02-25, "Challenges to Licensees' Ability to Provide Prompt Public Notification and Information ~~D~~during an Emergency Preparedness Event," August 26, 2002.

(10~~1~~2) IN 04-19, "Problems Associated with Back-~~u~~Up Power Supplies to Emergency Response Facilities and Equipment," November 4, 2004.

(10~~2~~3) IN 05-06, "Failure to Maintain Alert and Notification System Tone Alert Radio Capability," March 30, 2005.

(10~~3~~4) IN 05-19, "Effect of Plant Configuration Changes on the Emergency Plan," July 18, 2005.

(10~~4~~5) Regulatory Issue Summary (RIS) 2000-08, "Voluntary Submission of Performance Indicator Date~~e~~a," March 29, 2000 (ADAMS Accession No. ML003685821).

(10~~5~~6) RIS 2000-11, "NRC Emergency Telecommunications System," June 30, 2000 (ADAMS Accession No. ML003727812).

(10~~6~~7) RIS 2000-11, Supp. 1, "NRC Emergency Telecommunications System," March 22, 2001 (ADAMS Accession No. ML010570103).

(10~~7~~8) RIS 2001-16, "Update of Evacuation Time Estimates," August 1, 2001 (ADAMS Accession No. ML012070310).

(10~~8~~9) RIS 2002-01, "Changes to NRC Participation in the International Nuclear Event Scale," January 14, 2002 (ADAMS Accession No. ML013200502).

(~~109~~110) RIS 2002-16, "Current Incident Response Issues," September 13, 2002 (ADAMS Accession No. ML022560256).

(11~~0~~1) RIS 2002-21, "National Guard and Other Emergency Responders Located in the Licensee's Controlled Area," November 8, 2002 (ADAMS Accession No. ML023160020).

(11~~1~~2) RIS 2003-12, "Clarification of NRC Guidance for Modifying Protective Actions," June 24, 2003 (ADAMS Accession No. ML031680611).

(11~~2~~3) RIS 2003-18, "Use of NEI 99-01, ~~"Methodology~~'Methodology for Development of Emergency Action Levels,~~"~~' Revision 4, Dated January 2003," October 8, 2003 (ADAMS Accession No. ML032580518).

(11~~3~~4) RIS 2003-18, Supp. 1, "Supplement 1, Use of Nuclear Energy Institute (NEI) 99-01, ~~"Methodology~~'Methodology for Development of Emergency Action Levels,~~"~~' Revision 4, Dated January 2003," July 13, 2004 (ADAMS Accession No. ML041550395).

(11~~4~~5) RIS 2003-18, Supp. 2, "Supplement 2, Use of Nuclear Energy Institute (NEI) 99-01, ~~"Methodology~~'Methodology for Development of Emergency Action Levels,~~"~~' Revision 4, Dated January 2003," December 12, 2005 (ADAMS Accession No. ML051450482).

(116) RIS-2004-07, "Release of Final Review Standard (RS)-002, Processing Applications for Early Site Permits," May 19, 2004.

(11~~5~~7) RIS 2004-13, "Consideration of Sheltering in Licensee's Range of Protective Action Recommendations," August 2, 2004 (ADAMS Accession No. ML041210046).

(11~~6~~8) RIS 2004-13, Supp. 1, "Consideration of Sheltering in Licensee's Range of Protective Action Recommendations, Dated August 2004," March 10, 2005 (ADAMS Accession No. ML050340531).

(11~~7~~9) RIS 2004-15, "Emergency Preparedness Issues: Post ~~9/11,"~~9/11" (Official Use Only~~—~~—See RIS 2006-02), October 18, 2004.

Issued for Preliminary Use

(1~~18~~20) RIS 2004-15, Supp. 1, "Emergency Preparedness Issues: Post-9/11," May 25, 2006 (ADAMS Accession No. ML053000046).

(~~119~~121) RIS 2005-02, "Clarifying the Process for Making Emergency Plan Changes," February 14, 2005 (ADAMS Accession No. ML042580404).

(12~~0~~2) RIS 2005-08, "Endorsement of Nuclear Energy Institute (NEI) Guidance ~~"Range~~'Range of Protective Actions for Nuclear Power Plant Incidents~~",~~'" June 6, 2005 (ADAMS Accession No. ML050870432).

(12~~1~~3) RIS 2006-02, "Good Practices for Licensee Performance ~~D~~during the Emergency Preparedness Components of Force-On-Force Exercises," February 23, 2006 (ADAMS Accession No. ML052970294).

(12~~2~~4) RIS 2006-03, "Guidance on Requesting an Exemption from Biennial Emergency Preparedness Exercise Requirements," February 24, 2006 (ADAMS Accession No. ML053390039).

(12~~3~~5) RIS 2006-12, "Endorsement of Nuclear Energy Institute Guidance ~~"Enhancements~~'Enhancements to Emergency Preparedness Programs for Hostile Action~~",~~'" July 19, 2006 (ADAMS Accession No. ML061530290).

(12~~4~~6) Emergency Preparedness Position (EPPOS) No. 1, Rev. 0, "Acceptable Deviations from Appendix 1 of NUREG-0654 Based ~~U~~upon the Staff's Regulatory Analysis of NUMARC/NESP-007, ~~"Methodology~~'Methodology for Development of Emergency Action Levels~~",~~'" June 1, 1995 (ADAMS Accession No. ML022970165).

~~(125) EPPOS No. 1, Rev. 0, "Acceptable Deviations from Appendix 1 of NUREG-0654 Based Upon the Staff's Regulatory Analysis of NUMARC/NESP-007, "Methodology for Development of Emergency Action Levels"," June 1, 1995.~~

(12~~6~~7) EPPOS No. 2, Rev. 0, "Timeliness of Classification of Emergency Condition," August 1, 1995.

(12~~7~~8) EPPOS No. 3, Rev. 0, "Requirement for Onshift Dose Assessment Capability, November 8, 1995.

(12~~8~~9) EPPOS No. 5, Rev. 0, "Emergency Planning Information Provided to the Public," December 4, 2002.

(1~~29~~30) Circular (CR) 80-09, "Problems with Plant Internal Communications Systems," ~~April, 28~~April 28, 1980.

C.I.13.4 *Operational Program Implementation*

Operational programs are specific programs that are required by regulations. ~~F~~Section C.IV.4 of this regulatory guide provides further guidance on programs that are classified as operational programs~~ is provided in Section C.IV.4 of this regulatory guide. Operational~~. The COL applications should fully describe operational programs~~ should be fully described~~, as defined in SECY-05-0197, ~~in an application for a combined license~~dated October 28, 2005. In accordance with Commission direction in ~~SRM-SECY-05-0197~~the staff requirements memorandum associated with SECY-05-0197, COL applicants should also provide schedules for implementation of these operational programs, as discussed below.

The ~~combined license~~COL applicant should provide commitments for implementation of operational programs that are required by regulation. ~~An example,~~This regulatory guide provides Table 13.4-~~X, has been provided on the following page~~1 as an example to demonstrate a suitable method of providing this information. The ~~attached table is an example only and COL applicants should provide specific information relative to their operational programs. Descriptions of operational programs, consistent with the definition of "fully described" as discussed in Section C.IV.4, should be provided in this chapter of~~

Issued for Preliminary Use

~~the FSAR or in other, more~~ applicable sections of the FSAR should provide descriptions of the operational programs in the attached table. The implementation milestone commitments for these operational programs (e.g., prior to fuel load, at fuel load, prior to exceeding ~~5%~~5-percent power~~, etc.~~) should be provided in a table similar to the example table provided. In some instances, programs may be implemented in phases, where practical, and the applicant should include the phased implementation milestones ~~should also be provided~~ in the attached table ~~by the applicant~~. For example, radiation protection program implementation milestones may be based on radioactive sources on site, fuel on site, fuel load, and first shipment of radioactive waste.

I~~n lieu of providing~~f these programs and their implementation ~~milestone commitments for operational programs required by regulations, the combined license applicant may propose ITAAC for implementation, using the guidance contained in C.IV.4. Guidance~~are fully described, they will not require inclusion of ITAAC in the COL application. Non-programmatic aspects of EP, security, and the fire protection program (e.g., fire detection/suppression systems and fire barriers), will be subject to ITAAC. The review of ITAAC is performed under SRP Section 14.3, "Inspections, Tests, Analyses, and Acceptance Criteria."

Issued for

In this context, "fully described" indicates that the program is clearly and sufficiently described in terms of the scope and level of detail to allow a reasonable assurance finding of acceptability. Applicants should always describe required programs at a functional level and at an increased level of detail when implementation choices could materially and negatively affect the program effectiveness and acceptability.

Preliminary Use

Section C.II.1 of this regulatory guide provides guidance on ITAAC development ~~is provided in C.II.2 of this regulatory guide~~.

Sample FSAR Table 13.4–~~X~~1
Operational Programs Required by NRC Regulation and Program Implementation

Item	Program Title	Program Source (Required By)	FSAR ~~Section~~ (SRP) Section[1]	Implementation	
				Milestone	Requirement
1.	Inservice Inspection Program	10 CFR 50.55a(g)	~~3~~5.~~9~~2.4 6.6	Commercial ~~S~~service	10 CFR 50.55a(g)~~2~~ ASME Section XI IWA 2430(b)
2.	Inservice Testing Program	10 CFR 50.55a(f) 10 CFR Part 50, App. A	3.9.6 5.2.4	~~Commercial Service~~After generator online on nuclear heat	10 CFR 50.55a(f) ASME OM Code
3.	Environmental Qualification Program	10 CFR 50.49(a)	3.11	~~Authorization for Fuel load10 CFR 50.49(a)~~None specified	License Condition
4.	Preservice Inspection Program	10 CFR 50.55a(g)	5.2.4 6.6	~~Fuel loadLicense Condition~~Completion prior to initial plant startup	10 CFR 50.55a(g) ASME Code Section XI IWB-2200(a)
5.	Reactor Vessel Material Surveillance Program	10 CFR 50.60~~;~~ 10 CFR ~~50.61;~~ ~~10 CFR 50, App. A (GDC 32);~~ ~~10 CFR 50, App. G~~ ~~10 CFR~~Part 50, App. H	5.3.1~~.6~~	None specified	License Condition
6.	Preservice Testing Program	10 CFR 50.55a(f)	~~5~~3.~~4~~9.~~8~~6	~~Fuel load~~None specified	License Condition
7.	Containment Leakage Rate Testing Program	10 CFR 50.54(o)~~;~~ 10 CFR 50, App. A (GDC 32)~~;~~ 10 CFR 50, App. J 10 CFR 52.47(a)(1)	6.2.6	Fuel load	10 CFR Part 50, ~~Appendix~~App. J Option A-Section III Option B-Section III.A
8.	Fire Protection Program	10 CFR 50.48	9.5.1	~~Prior to fuel being onsite~~None specified	License Condition
9.	Process and Effluent Monitoring and Sampling Program:			~~Fuel load~~	
	Radiological Effluent Technical Specifications/Standard Radiological Effluent Controls	10 CFR 20.1301 and 20.13.2 10 CFR 50.34a 10 CFR 50.36a 10 CFR 50, App. I, Sect. II and IV	11.5	None specified	License Condition
	Offsite Dose Calculation Manual	Same as above	11.5	None specified	License Condition
	Radiological Environmental Monitoring Program	Same as above	11.5	None specified	License Condition
	Process Control Program	Same as above	11.4	None specified	License Condition

Issued for Preliminary Use

Item	Program Title	Program Source (Required By)	FSAR ~~Section~~ (SRP) Section[1]	Implementation	
				Milestone	Requirement
10.	Radiation Protection Program	10 CFR 20.1101	12.5	~~1. Radioactive sources onsite~~ ~~2. Fuel onsite~~ ~~3. Fuel load~~ ~~4. First shipment of radioactive waste~~None specified	License Condition
11.	Nonlicensed Plant Staff Training Program	10 CFR 50.120 10 CFR 52.78	13.2.~~1~~2	18 mos. prior to scheduled fuel load	10 CFR 50.120(b)
12.	Reactor Operator Training Program	10 CFR 55.13~~;~~ 10 CFR 55.31~~;~~ 10 CFR 55.41~~;~~ 10 CFR 55.43~~;~~ 10 CFR 55.45	13.2.1	~~Within 3 mos. after COL issuance~~ None specified	License Condition
13.	Reactor Operator Requalification Program	10 CFR 50.34(b)~~;~~ 10 CFR 50.54(~~f~~i); 10 CFR 55.59	13.2.~~2~~1	Within 3 mos. after ~~authorization for fuel load~~issuance of an operating license or the date, the Commission makes the finding under 10 CFR 52.103(g)	Proposed 10 CFR 50.54 (~~f~~i-1)~~.~~
14.	Emergency ~~Plan~~Planning	10 CFR 50.47~~;~~ 10 CFR Part 50, App. E	13.3	~~f~~Full participation exercise conducted within 2 yrs before the issuance of first full power operating license Onsite exercise conducted within 1 yr before issuance of full power operating license Applicants detailed implementing procedures for its emergency plan submitted no less than 180 days prior to scheduled issuance of an operating license Full participation exercise conducted within 2 y~~ea~~rs of scheduled date for initial ~~fuel load~~ loading of fuel Onsite exercise conducted within 1 yr before the schedule date for initial loading of fuel Applicant's detailed implementing procedures for its emergency plan submitted no less than within 180 days prior to ~~authorization~~scheduled date for initial loading of fuel ~~load~~.	Proposed 10 CFR Part 50, App. E.IV.F.~~2.a~~ ~~10 CFR 50, Appendix E.V~~2a(i) (10 CFR Part 50 applicant) Proposed 10 CFR Part 50, App. E.IV.F.2a(i) (10 CFR Part 50 applicant) Proposed 10 CFR Part 50, App. E.V (10 CFR Part 50 applicant) Proposed 10 CFR Part 50, App. E.IV.F.2a(ii) (10 CFR Part 52 applicant) Proposed 10 CFR Part 50, App. E.IV.F.2a(ii) (10 CFR Part 52 applicant) Proposed 10 CFR Part 50, App. E.V (10 CFR Part 52 applicant)

Issued for Preliminary Use

Item	Program Title	Program Source (Required By)	FSAR ~~Section~~ (SRP) Section[1]	Implementation	
				Milestone	Requirement
15.	Security Program:		13.6		
	Physical Security Program	10 CFR 50.34(c) 10 CFR 73.55		~~Prior to fuel being onsite~~	License Condition
	Safeguards Contingency Program	10 CFR 73.56 10 CFR 73.57		~~Prior to fuel being onsite~~	License Condition
	Training and Qualification Program	10 CFR Part 26 10 CFR 50.34(d) 10 CFR Part 73, ~~Appendix~~App. C 10 CFR Part 73, ~~Appendix~~App. B		~~Prior to fuel being onsite~~None specified	License Condition
16.	Quality Assurance Program~~-~~—Operation	10 CFR 50.54(a)~~;~~ 10 CFR Part 50, App. A (GDC 1); 10 CFR Part 50, App. B	17.~~2~~5	30 days prior to scheduled ~~fuel load~~date for the initial loading of fuel	Proposed 10 CFR 50.54(a)(1)
17.	~~Monitoring the Effectiveness of~~ Maintenance ~~at Nuclear Power Plants~~Rule	10 CFR 50.65	17.6	~~No later than 30 days prior to scheduled date for initial f~~Fuel load~~10 CFR~~ authorization per 10 CFR 52.103(g)	Proposed 10 CFR 50.65(a)(1)
18.	Motor-Operated Valve Testing	10 CFR 50.55a(b)(3)(ii)	3.9.6	~~Fuel load~~None specified	License Condition
19.	Initial Test Program	10 CFR 50.34 10 CFR 52.79(a)(28)	14.2	None specified	License Condition

[1] Additional FSAR (SRP) sections may be identified under broad operational programs required by regulation (e.g., ISI, IST, etc.).

C.I.13.4.5 References

(1) 10 CFR 50~~, 50~~.40(b), "Common Standards."

(2) Regulatory Guide 1.33, "Quality Assurance Program Requirements (Operation)."

(3) Regulatory Guide 1.8, "Qualification and Training of Personnel for Nuclear Power Plants."

(4) NUREG-0737, "Clarification of TMI Action Plan Requirements," November 1980.

(5) NUREG-0660, "NRC Action Plan Developed as a Result of the TMI 2 Accident," revised August 1980.

Issued for Preliminary Use

(6) ANSI N18.7-1976/ANS 3.2-1976, "Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants," February 19, 1976.

(7) ANSI/ANS-3.1, "Selection and Training of Nuclear Power Plant Personnel."

(8) Generic Letter 83-28, "Required Actions Based on Generic Implications of Salem ATWS Event,"" July 8, 1983.

(9) SRM-SECY-05-0197, "Review of Operational Programs in a Combined License Application and Generic Emergency Planning Inspections, Tests, Analyses, and Acceptance Criteria."

C.I.13.5 *Plant Procedures*

This section of the FSAR should describe administrative and operating procedures that will be used by the operating organization (plant staff) will use to ensure that routine operating, off-normal, and emergency activities are conducted in a safe manner. In general, the FSAR is not expected to include detailed written procedures. The FSAR should provide a brief description of the nature and content of the procedures and a schedule for the preparation of appropriate written administrative procedures (see Section 13.5.1.1). The FSAR should delineate in the description of administrative procedures the functional position for procedural revision and approval prior to implementation.

Issued for Preliminary Use

C.I.13.5.1 Administrative Procedures

This section of the FSAR should describe administrative procedures that provide administrative control over activities that are important to safety for operation of the facility. Regulatory Guide 1.33, "Quality Assurance Program Requirements (Operation)," contains guidance on facility administrative policies and procedures. The FSAR should specifically indicate whether the applicable portions of Regulatory Guide 1.33 concerning plant procedures will be followed. If such guidance will not be followed, the FSAR should describe specific alternative methods that will be used and the manner of implementing them.

C.I.13.5.1.1 *Administrative Procedures General*

This section of the FSAR should describe (1) those procedures whichthat provide the administrative controls with respect to procedures and (2) those procedures whichthat define and provide controls for operational activities of the plant staff as described below:

Category A Controls

(1) procedures review and approval
(2) equipment control procedures
(3) control of maintenance and modifications
(4) fire protection procedures
(5) crane operation procedures
(6) temporary changes to procedures
(7) temporary procedures
(8) special orders of a transient or self-cancelling character

Category B Specific Procedures

(1) standing orders to shift personnel including the authority and responsibility of the shift supervisor, licensed senior reactor operator in the control room, control room operator, and shift technical advisor

(2) assignment of shift personnel to duty stations and definition of "surveillance area"

(3) shift relief and turnover

(4) fitness for duty

(5) control room access

(6) limitations on work hours

(7) feedback of design, construction, and applicable important industry and operating experience

(8) shift supervisor administrative duties

(9) verification of correct performance of operating activities

Issued for Preliminary Use

C.I.13.5.2 Operating and Maintenance Procedures

C.I.13.5.2.1 *Operating and Emergency Operating Procedures*

This section should describe primarily the procedures that ~~are performed by~~ licensed operators perform in the control room. ~~These~~The application should identify these operating ~~procedure should be identified~~procedures by types and ~~included~~include them in a described classification system. The general format and content for each class should be described (to be verified during construction). The following categories should be included, but need not necessarily form the basis for classifying these procedures:

(1) Procedure Classification

The FSAR or other submittal should describe the different classifications of procedures the operators will use in the control room and locally in the plant for plant operations. ~~The~~This section should identify the group within the operating organization responsible for maintaining the procedures and should ~~be identified and~~describe the general format and content of the different classifications ~~should be described~~. It is not necessary that each applicant's procedures conform precisely to the same classification since the objective is to ensure that procedures will be available to the plant staff to accomplish the functions contained in the listing of Regulatory Guide 1.33. For example, some licensees prefer a classification of abnormal operating procedures, whereas others may use off-normal condition procedures. ~~E~~The following are examples of classifications ~~are as follows~~:

(a) System Procedures. Procedures that provide instructions for energizing, filling, venting, draining, starting up, shutting down, changing modes of operation, returning to service following testing or maintenance (if not given in the applicable procedure), and other instructions appropriate for operation of systems important to safety.

(b) General Plant Procedures. Procedures that provide instructions for the integrated operation of the plant~~,~~ (e.g., startup, shutting down, shutdown, power operation and load changing, process monitoring, ~~and~~ fuel handling, maintenance, surveillance, and periodic testing).

(c) Off-~~n~~Normal Condition Procedures. Procedures that specify operator actions for restoring an operating variable to its normal controlled value when it departs from its normal range or to restore normal operating conditions following a transient. Such actions are invoked following an operator observation or an annunciator alarm indicating a condition which, if not corrected, could degenerate into a condition requiring action under an emergency operating procedure (EOP).

(d) Emergency Operating Procedures. Procedures that direct actions necessary for the operators to mitigate the consequences of transients and accidents that cause plant parameters to exceed reactor protection system or engineered safety features actuation setpoints.

(e) Alarm Response Procedures. Procedures that guide operator actions for responding to plant alarms.

(2) Operating Procedure Program

The FSAR or other submittal should describe the applicant's program for developing operating procedures (~~A~~1.~~1–5~~a–e, above).

(3) Emergency Operating Procedure Program

The FSAR or other submittal (e.g., the procedures generation package ~~f~~(PGP~~)~~) should describe the applicant's program for developing EOPs (item A.4 above) as well as the required content of the EOPs~~)~~.

The applicant should submit the procedure development program, as described in the PGP for EOPs, ~~should be submitted~~ to the NRC at least 3 months prior to the date the applicant plans to begin formal operator training on the EOPs. The PGP should include the following:

(1) Plant-specific technical guidelines (P-STGs), which are guidelines based on analysis of transients and accidents that are specific to the applicant's plant design and operating philosophy~~. The P-STGs~~, will provide the basis for, and include reference to, generic guidelines if used.

For plants not referencing generic guidelines, this section of the submittal should contain the action steps necessary to mitigate transients and accidents in a sequence that allows mitigation without prior diagnosis of the specific event, along with all supporting analyses, to meet the requirements of TMI Action Plan ~~i~~Item I.C.1 (see NUREG~~-~~-0737 and Supplement 1 to NUREG~~-~~-0737).

For plants referencing generic guidelines, the submitted documentation should include (~~1~~a) a description of the process used to develop plant-specific guidelines from the generic guidelines, (~~2~~b) identification of significant deviations from the generic guidelines (including identification of additional equipment beyond that identified in the generic guidelines), along with all necessary engineering evaluations or analyses to support the adequacy of each deviation, and (~~3~~c) a description of the process used for identifying operator information and control requirements.

Issued for Preliminary Use

(2) A plant-specific writer's guide ~~(P-SWG)~~ that details the specific methods to be used by the applicant in preparing EOPs based on P-STGs should be included.

(3) A description of the program for verification and validation ~~(V&V)~~ of EOPs should be included.

(4) A description of the program for training operators on EOPs should be included.

C.I.13.5.2.2 ***Maintenance and Other Operating Procedures***

This section should describe how other operating and maintenance procedures are classified, what 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. The categories of procedures listed below should be included~~. If~~ (if their general objectives and character are described elsewhere in the FSAR or the application, they may be described by specific reference thereto~~.~~):

(1) plant radiation protection procedures
(2) ~~emergency preparedness~~EP procedures
(3) instrument calibration and test procedures
(4) chemical-radiochemical control procedures
(5) radioactive waste management procedures
(6) maintenance and modification procedures
(7) material control procedures
(8) plant security procedures

C.I.13.5.3 References

(1) 10 CFR 50.40, "Common Standard."

(2) 10 CFR 50.54, "Conditions of Licenses."

(3) 10 CFR 26.20, "Written Policy and Procedures."

(4) NRC Policy Statement, "Nuclear Plant Staff Working Hours" (46 FR 23836), June 1, 1982.

(5) Regulatory Guide 1.33, "Quality Assurance Program Requirements (Operation)."

(6) Regulatory Guide 1.114, "Guidance to Operators at the Controls and to Senior Operators in the Control Room of a Nuclear Power Unit."

(7) Generic Letter 82-02, "Nuclear Plant Staff Working Hours," February 8, 1982.

(8) Generic Letter 82-12, "Nuclear Plant Staff Working Hours," June 15, 1982.

(9) Generic Letter 83-14, "Definition of 'Key Maintenance Personnel' (Clarification of Generic Letter 82-12)," March 7, 1983.

(10) Generic Letter 89-23, "NRC Staff Responses to Questions Pertaining to Implementation of 10 CFR Part 26," October 23, 1989.

(11) Generic Letter 90-03, "Relaxation of Staff Position in Generic Letter 83-28, Item 2.2 Part 2 'Vendor Interface for Safety-Related Components' (Generic Letter 90-03)," March 20, 1990.

(12) Generic Letter 91-16, "'Licensed Operators' and other Nuclear Facility Personnel Fitness for Duty," October 3, 1991.

(13) NUREG-0578, "TMI-2 Lessons Learned Task Force Status Report and Short-Term Recommendations."

Issued for Preliminary Use

(14) NUREG-0694, "TMI-Related Requirements for New Operating Licenses."

(15) NUREG-0737, "Clarification of TMI Action Plan Requirements."

(16) NUREG-1385, "Fitness-for-Duty in the Nuclear Power Industry: Responses to Implementation Questions," October 1989.

(17) ANS 3.2-1976, "Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants."

(18) 10 CFR Part 50, Appendix A, Criterion I, "Quality Standards and Records."

(19) 10 CFR Part 50, Appendix B, Criterion XI, "Test Control."

C.I.13.6 *Security*

C.I.13.6.1 Security Assessments

Issued for Preliminary Use

In 2003, the NRC staff proposed to the Commission various options for establishing security requirements for new power reactors and recommended requirements to incorporate security design and siting features at the design certification and ~~combined license~~COL phases. The Commission responded by directing the staff to seek ways to codify security requirements related to the design~~-~~-basis threat as part of the licensing and design regulations applicable to future power reactor applications.

Subsequently, in SECY-05-0120, "Security Design Expectations for New Reactor Licensing Activities," dated July 6, 2005~~ (ADAMS No. ML051100233)~~, the NRC staff proposed to initiate rulemaking ~~to~~under 10~~ CFR Parts 50, "Domestic Licensing of Production and Utilization Facilities," and 52, "Early Site Permits, Standard Design Certifications, and Combined Licenses for Nuclear Power Plants,"~~ CFR Part 50 and 10 CFR Part 52 requiring applicants for new reactor licensing activities to submit a security assessment. In response to SECY-05-0120, the Commission issued on September 9, 2005, a ~~S~~staff ~~R~~requirements ~~M~~memorandum~~ (ADAMS No. ML052520334)~~ directing the staff, in part, to conduct a rulemaking to require applicants to submit a safety and security assessment.

The Commission is publishing this proposed rule as a supplement to the proposed rule,~~"Power~~ "Power Reactor Security Requirements," published on September XX, 2006 (XX FR XXXX) that would amend the current security regulations and add new security requirements pertaining to nuclear power reactors. These requirements supplement the provisions of the ~~"Power~~Power Reactor Security Requirements~~"~~ rulemaking by requiring applicants for new nuclear power reactors to conduct a security assessment and include it with their application. COL applicants should anticipate this requirement and consider providing the subject security assessment with their application in accordance with the proposed rulemaking, when it is issued. In addition, applicants should consider providing an implementation schedule and milestones for the security programs in the table provided in Section 13.4.

C.I.13.6.2 Security Plans

This section of the ~~combined license~~COL application should include a discussion indicating that a ~~S~~security ~~P~~plan has been prepared and submitted separately to the NRC. The details of ~~the S~~a plant's overall security ~~P~~plan should include a description of the elements of the ~~S~~individual security ~~P~~plans (e.g., physical security, training and qualification, and safeguards contingency~~ - collectively the Security Plan~~) proposed by a ~~combined license~~COL applicant, as required by ~~10 CFR 73.55.~~10 CFR 73.55, "Requirements for Physical Protection of Licensed Activities in Nuclear Power Reactors against Radiological Sabotage." In addition, the ~~S~~security ~~P~~plan for a ~~combined license~~COL applicant should describe the proposed site security provisions

that will be implemented during construction of a new plant that is either inside an existing protected area, owner-controlled area, or is a greenfield site.

Licensees of nuclear power plants that are licensed to 10 CFR Part 50 requirements have implemented security requirements based on a generic security plan template provided in NEI 03-12. The NRC considers the guidance provided in NEI 03-12 is considered to be acceptable and has been endorsed by the NRCit (Ref. 12). Combined licenseCOL applicants should provide information regarding their Ssecurity Pplan that is consistent with NEI 03-12. In addition, NEI 03-01 provides guidance acceptable to the NRC has been provided in NEI 03-01 for Aaccess Aauthorization and Ffitness for Dduty programs, and in NEI 03-09 provides acceptable guidance for Ssecurity Oofficer Ttraining Pprograms (Ref. 12). The guidance provided in the above referenced NEI documents are not requirements and combined licenseCOL applicants may follow alternative approaches to provide security information suitable for complying with the applicable regulations, however, applicants must describe and provide justification for the suitability of any alternative approaches.

The combined licenseCOL applicant should refer to their Sits security Pplan and the security assessment in Chapter 13 of the FSAR and incorporate it by reference in the combined licenseCOL application. The Sapplicant should submit the security Pplan and security assessment information referenced in the combined licenseCOL application should be submitted separately to the NRC. The combined licenseNRC will withhold the COL applicant's security plan information will be withheld from public disclosure in accordance with the provisions of 10 CFR 73.21.

The combined license10 CFR 73.21, "Requirements for Protection of Safeguards Information."

The COL applicant should identify the schedule implementation requirements associated with the elements of their Sits security Pplan and security assessment, as discussed in Section 13.4, Operational Program Implementation.

In addition, the combined licenseCOL applicant should address, in this section, any COL action items or information items applicable to the Ssecurity Pplan and security assessment that may have been established for early site permitsESPs and/or certified designs that are referenced in the COL application.

The COL applicant should also submit the following information:

- a proposed schedule for implementing the site's operational security programs, security systems and equipment, and physical barriers, and
- proposed ITAAC for physical security hardware (Sections C.I.14.3 and C.II.1 of this regulatory guide provide guidance on development of ITAAC is provided in sections C.I.14.3 and C.II.2 of this regulatory guide)

C.I.13.6.23 References

(1) 10 CFR 73.21, "Requirements for the Protection of Safeguards Information."

(2) 10 CFR 8.5, "Interpretation by the General Counsel of §73.55 of this Chapter; Illumination and Physical Search Requirements."

(3) 10 CFR Parts 73.56 and 10 CFR 73.57, "Access Authorization for Licensed Personnel."

(4) 10 CFR Part 26, "Fitness for Duty."

(5) 10 CFR 50.34(c), "Physical Security Plan."

Issued for Preliminary Use

(6) 10 CFR 50.34(d), "Safeguards Contingency Plan."

(7) 10 CFR 50.54(p), "Conditions of Licenses."

(8) 10 CFR 50.70(b)(3), "Inspections."

(9) 10 CFR Part 73, "Physical Protection of Plants and Materials."

(10) 10 CFR Part 73, Appendices A, B, C, G and H.

(11) ~~Federal Register 50 FR 32138, 10 CFR 50~~U.S. Nuclear Regulatory Commission, "Policy Statement on Severe Reactor Accidents ~~in~~ Regarding Future Designs and Existing Plants," *Federal Register*, Vol. 50, August 8, 1985, p. 32138.

(12) NRC Letter to Mr. Stephen D. Floyd, Vice President, Regulatory Affairs, Nuclear Generation Division, NEI, dated April 5, 2004, NRC Staff Review of NEI 03-12: Template for the Security Plan, Training and Qualification Plan, Safeguards Contingency Plan, ~~[~~(and Independent Spent Fuel Storage Installation Security Program~~]~~) (Revision 1, March 2004) (ADAMS ~~ML033640038~~Accession No. ML033640038).

(13) NUREG-1226, "Development and Utilization of the NRC Policy Statement on the Regulation of Advanced Nuclear Power Plants."

Issued for Preliminary Use