U.S. NUCLEAR REGULATORY COMMISSION

# STANDARD REVIEW PLAN

## 13.2.1 REACTOR OPERATOR REQUALIFICATION PROGRAM; REACTOR OPERATOR TRAINING

### REVIEW RESPONSIBILITIES

**Primary** - Organization responsible for the review of operator licensing

**Secondary** - Organization responsible for the review of human performance

### I. AREAS OF REVIEW

The organization responsible for the review of operator licensing reviews the operator training program of applicants (e.g., for a construction permit (CP), an operating license (OL), a standard design certification (DC), or a combined license (COL)) as described in its technical submittal. This section of the technical submittal should contain the description and scheduling of the licensed operator training program for reactor operators and senior reactor operators. The licensed operator training program includes the licensed operator requalification program. The objective of this review is to ensure that the proposed licensed operator training program description contains an adequate format, attributes, and level of detail, that the training

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program shall be able to provide qualified personnel to operate and to maintain the facility in a safe and efficient manner, as well as to keep the facility in compliance with its license, technical specifications, and applicable regulations. In addition, the review is to ensure that sufficient technical resources have been, are being, and will continue to be provided to adequately accomplish these objectives.

The areas of review, based on the type of application, are as follows:

1. Design Certification

   The DC review is focused on the evaluation of combined-license action items pertaining to licensed operator training and requalification.

2. Construction Permit or Combined License

   The CP/COL review is focused on the applicant's licensed operator training program description. The licensed operator training program is to be established, implemented, and maintained 18 months prior to fuel load. The application includes the following:

   a. A commitment to meet the guidelines of Regulatory Guide (RG) 1.8, "Qualification and Training of Personnel for Nuclear Power Plants."

   b. A commitment to meet the guidelines of RG 1.149, "Nuclear Power Plant Simulation Facilities for Use in Operator Training and License Examinations," for its simulation facilities.

   c. A commitment to conduct formal licensed operator classroom, on-the-job training, and simulator training before and after initial fuel load.

   d. For COL applicants, a commitment to meet the guidelines of Nuclear Energy Institute (NEI) 06-13A, "Template for an Industry Training Program Description."

   e. The licensed operator training program description should contain the following elements:

      (i) The subject matter of each licensed operator training course.

      (ii) The duration (approximate number of weeks) of each licensed operator training course.

      (iii) The organization teaching the course or supervising instruction of each licensed operator training course, and the qualifications of the instructors and supervisors.

(iv) The titles of the positions for which each licensed operator training course is intended.

(v) A chart showing the proposed schedule for licensing personnel prior to criticality. The schedule should be relative to the expected fuel load date and should also display the preoperational test period.

(vi) To the extent applicable to the facility, the subjects in the reactor operator training program will include the following:

(a) Fundamentals of reactor theory, including fission process, neutron multiplication, source effects, control rod effects, criticality indications, reactivity coefficients, and poison effects.

(b) General design features of the core, including core structure, fuel elements, control rods, core instrumentation, and coolant flow.

(c) Mechanical components and design features of the reactor primary system.

(d) Secondary coolant and auxiliary systems that affect the facility.

(e) Facility operating characteristics during steady-state and transient conditions, including coolant chemistry, causes and effects of temperature, pressure and reactivity changes, effects of load changes, and operating limitations, and ~~the~~ reasons for these operating characteristics.

(f) Design, components, and functions of reactivity control mechanisms and instrumentation.

(g) Design, components, and functions of control and safety systems, including instrumentation, signals, interlocks, failure modes, and automatic and manual features.

(h) Components, capacity, and functions of emergency systems.

(i) Shielding, isolation, and containment design features, including access limitations.

(j) Administrative, normal, abnormal, and emergency operating procedures for the facility.

(k) Purpose and operation of radiation-monitoring systems, including alarms and survey equipment.

(l) Radiological safety principles and procedures.

(m) Procedures and equipment available for handling and disposal of radioactive materials and effluents.

(n) Principles of heat transfer thermodynamics and fluid mechanics.

(vii) To the extent applicable to the facility, in addition to those subjects identified for reactor operators (Section I.2.e.(vi)), the subjects in the senior reactor operator training program will include the following:

(a) Conditions and limitations in the facility license.

(b) Facility operating limitations in the technical specifications and their bases.

(c) Facility procedures required to obtain authority for design and operating changes in the facility.

(d) Radiation hazards that may arise during normal and abnormal situations, including maintenance activities and various contamination conditions.

(e) Assessment of facility conditions and selection of appropriate procedures during normal, abnormal, and emergency situations.

(f) Procedures and limitations involved in initial core loading, alterations in core configuration, control rod programming, and determination of various internal and external effects on core reactivity.

(g) Fuel-handling facilities and procedures.

(viii) To the extent applicable to the facility, reactor operators and senior reactor operators are required to demonstrate an understanding of and the ability to perform the following:

(a) Performance of pre-startup procedures, including operating those controls associated with plant equipment that could affect reactivity.

(b) Manipulation of console controls as required to operate the facility between shutdown and designated power levels.

(c) Identification of annunciators and condition-indicating signals and, where appropriate, performance of necessary remedial actions.

(d) Identification of the instrumentation systems and a description the

significance of the instrument reading.

(e) Safe control of the facility.

(f) Performance of control manipulations to obtain desired operating results during normal, abnormal, and emergency situations.

(g) Safe operation of the ~~facility's~~facility heat-removal systems and identification of the relationship of the proper operation of these systems to the operation of the facility.

(h) Safe operation of the ~~facility's~~facility auxiliary and emergency systems, including operation of those controls associated with plant equipment that could affect reactivity or the release of radioactive materials to the environment.

(i) Demonstration or description of the use and function of the ~~facility's~~facility radiation-monitoring systems, including fixed radiation monitors and alarms, portable survey instruments, and personnel monitoring equipment.

(j) Demonstration of knowledge of significant radiation hazards, including permissible exposure levels and performance of the procedures necessary to reduce radiation levels and to minimize personnel exposure.

(k) Demonstration of knowledge of the facility emergency plan, including the operator's or senior operator's responsibility to decide whether the plan should be executed, and knowledge of his assigned duties.

(l) Demonstration of knowledge and ability, as appropriate to the assigned position, to assume the responsibilities associated with the safe operation of the facility.

(m) Demonstration of the ability to function within the control room team, as appropriate to the assigned position, in such a way that the facility procedures are adhered to and that license limitations and amendments are not violated.

(ix) A description of the procedure for upgrading reactor operator licenses and for licensing senior reactor operators who have not been previously licensed as reactor operators.

(x) A description of the procedures to meet licensed operator experience requirements.

f. The licensed operator requalification program must be conducted for a continuous period not to exceed two years and followed immediately by successive requalification programs. In accordance with 10 CFR 55.59(c), in lieu of paragraphs f.(1) and f.(ii) below, the Commission may approve a program developed using a systems approach to training.

(i) The requalification program must include preplanned lectures in those areas where operator and senior operator examinations and operating experience indicate that emphasis is needed in the following subjects:

(a) Theory and principles of operation.

(b) General and specific plant operating characteristics.

(c) Plant instrumentation and control systems.

(d) Plant protection systems.

(e) Engineered safety systems.

(f) Normal, abnormal, and emergency operating procedures.

(g) Radiation control and safety.

(h) Technical specifications.

(i) Applicable portions of Title 10 of the *Code of Federal Regulations* (10 CFR), Chapter 1~~.~~, "Energy."

(ii) The requalification program must include on-the-job training so that each licensed operator of the facility manipulates the plant controls and each licensed senior operator either manipulates the controls or directs the activities of individuals during plant control manipulations during the term of the licensed operator's or senior operator's license.

The control manipulations and plant evolutions will consist of the following control manipulations and plant evolutions: activities described in (a) through (l) below must be performed annually. The remaining control manipulations and plant evolutions ((m) through (aa)) must be performed on a two-year cycle.

The requalification program must contain a commitment that each operator will perform or participate in a combination of reactivity-control manipulations based on the availability of plant equipment and systems.

Those control manipulations and plant evolutions that are not performed on the actual plant may be performed on the plant-referenced simulator.

The use of the technical specifications should be maximized during the simulator control manipulations. Senior operator licensees are credited with these activities if they directly control manipulations as they are performed.

Control manipulations and plant evolutions to be performed:

(a) Plant or reactor startups to include a range that reactivity feedback from nuclear heat addition is noticeable and heatup rate is established.

~~(c)~~(b) Plant shutdown.

~~(d)~~(c) Manual control of steam generators or feedwater or both during startup and shutdown.

~~(e)~~(d) Boration or dilution during power operation.

~~(f)~~(e) Significant (≥10 percent) power changes in manual rod control or recirculation flow.

~~(g)~~(f) Reactor power change of 10 percent or greater where load change is performed with load limit control or where flux, temperature, or speed control is on manual (for high-temperature gas-cooled reactors ~~(HTGR)).~~).

~~(h)~~(g) Loss of coolant, including:

(1) Significant Pressurized Water Reactor (PWR) steam generator leaks.

(2) Inside and outside primary containment.

(3) Large and small, including leak-rate determination.

(4) Saturated reactor coolant response (PWR).

~~(i)~~(h) Loss of instrument air (if simulated, plant specific).

~~(j)~~(i) Loss of electrical power (or degraded power sources).

~~(k)~~(j) Loss of core coolant flow/natural circulation.

~~(l)~~(k) Loss of feedwater (normal and emergency).

~~(m)~~(l) Loss of service water, if required for safety.

~~(n)~~(m) Loss of shutdown cooling.

~~(o)~~(n) Loss of component cooling system or cooling to an individual component.

~~(q)~~(o) Loss of normal feedwater or normal feedwater system failure.

~~(r)~~(p) Loss of condenser vacuum.

~~(s)~~(q) Loss of protective system channel.

~~(t)~~(r) Mispositioned control rod or rods (or rod drops).

~~(u)~~(s) Inability to drive control rods.

~~(v)~~(t) Conditions requiring use of emergency boration or standby liquid control system.

~~(w)~~(u) Fuel cladding failure or high activity in reactor coolant or offgas.

~~(x)~~(v) Turbine or generator trip.

~~(y)~~(w) Malfunction of an automatic control system that affects reactivity.

~~(z)~~(x) Malfunction of reactor coolant pressure/volume control system.

~~(aa)~~(y) Reactor trip.

~~(bb)~~(z) Main steam line break (inside or outside containment).

~~(cc)~~(aa) Nuclear instrumentation failure.

(iii) On-the-job training must ensure that:

(1) Each licensed operator and senior operator demonstrates satisfactory understanding of the operation of the apparatus, the procedures and mechanisms associated with the Items I.2.(f)(ii)(a) through (aa) from Section I.2.

(2) Each licensed operator and senior operator is cognizant of facility design changes, procedure changes, and facility license changes.

(3) Each licensed operator and senior operator reviews the contents of all abnormal and emergency procedures on a regularly scheduled basis.

(iv) To determine areas where retraining is needed, the requalification program must include (10 CFR 55.59~~):~~, "Requalification").

(1) ~~(1)~~ Annual operating tests.

(2) Written examinations that provide a basis for determining operator knowledge of the subjects covered in the requalification program.

(3) Systematic observation and evaluation of operator performance and competency by supervisors or training staff, including evaluation of operator actions during actual or simulated implementation of abnormal and emergency procedures.

(4) Operating conditions may be simulated using facility control panels or the plant-referenced simulator. When facility control panels are used for the simulation, actual manipulation of the plant-controls is not required, and actions may be discussed.

(v) The requalification program must contain provisions for licensed operators to participate in an accelerated requalification program where performance evaluations conducted pursuant to Items I.2.(f)(iv)(1) through (4) from Section I.2 clearly indicate the need (10 CFR 55.59).

(vi) Per 10 CFR 55.59, the requalification program documentation must include:

(1) Records documenting the participation of each licensed operator and senior operator in the requalification program shall be maintained by the facility licensee. The facility licensee shall retain these records until the operator's or senior operator's license is renewed. The records to be retained include:

(a) Copies of written examinations administered.

(b) Answers provided by the licensed operator.

(c) Results of evaluations and documentation of operating tests.

(d) Any additional training administered in areas in which an operator or senior operator has exhibited deficiencies.

(2) Records must be legible throughout the retention period. The record may be the original, a reproduced copy, or a microform, provided ~~that~~ the copy or microform is authenticated by authorized personnel and ~~that~~ the microform is capable of producing a clear copy throughout the retention period.

3. Operating License (Construction Permit holder) or Combined License Holder

For the OL applicant, during the later stages of plant design, construction, and licensing, the applicant should provide evidence that the initial licensed operator training program conforms to the commitments made in the CP stage of licensing.

For COL holders, implementation of commitments made by the applicant during the COL application process will be evaluated as part of the Construction Inspection Program.

The OL/COL holder review is focused on the applicant's detailed licensed operator training program description, which is verified as part of the Costruction Inspection Program.

The licensed operator training program development process relies on review and feedback as an integral activity throughout program development and the implementation process. A system should be in place for periodically monitoring the program by individuals other than those directly responsible for providing the training. This monitoring includes an assessment of program effectiveness in developing the trainees' abilities to meet the performance requirements of the job. The program should be periodically updated, as appropriate, to reflect the results of program evaluations, industry experience, and changes to the facility, procedures, regulations, and quality requirements. In addition:

a. At a minimum, the licensed operator training program description contains the elements listed for CP/COL review in Section I.2.

b. At a minimum, the licensed operator initial training program description contains the elements listed for CP/COL review in Section I.2.

c. At a minimum, the licensed operator requalification training program description contains the elements listed for CP/COL review in Section I.2.

## II. REVIEW PROCEDURES

The review procedures described below are for the areas of review identified in Section I. The review procedures are based on the acceptance criteria. For deviations from the acceptance criteria, the staff should review the applicant's explanation describing the proposed alternatives to the acceptance criteria and how the alternatives provide an acceptable method of complying with the relevant ~~NRC~~U.S. Nuclear Regulatory Commission (NRC) requirements.

In preparing to review the application, the reviewer should become familiar with the references for this Standard Review Plan (SRP) section.

The application submitted is to be reviewed against this SRP section. The reviewer's evaluation is based on an inspection of the material presented in the application, on whether items of special safety significance are involved, and on the magnitude and uniqueness of the project.

Any exceptions or alternatives presented in the application should be carefully reviewed to ensure that they are clearly defined and that an adequate basis for acceptance is provided.

The applicant will identify the references, RGs, and codes and standards revision numbers used in the application. The reviewer should identify the version of the references, RGs, and codes and standards used in the review.

1. In reviewing and evaluating the information related to the licensed operator training program, the following points should be considered:

    a. The applicant's plans for initial and requalification licensed operator training may not be fully developed and staffed. It is acceptable if these plans are not fully developed, provided that the applicant either makes an ~~FSAR~~Final Safety Analysis Report commitment or includes a license condition to ensure that the responsibility will be met. The licensed operator training program can be verified during the Construction Inspection Program.

    b. If the applicant has experience in the operation of a previously licensed nuclear power plant, the reviewer may seek independent information about licensed operator training through the appropriate NRC regional office.

2. The review procedures for this section consist of the following:

    a. An examination of the information submitted to determine that all areas identified in Section I, "Areas of Review," have been addressed.

    b. A comparison of the information submitted with the acceptance criteria of Section~~-~~ III, "Acceptance Criteria."

    c. A review of the information provided by the NRC regional office position statement on the applicant's licensed operator training program and commitments made in the ~~SAR~~Safety Analysis Report, if applicable.

    d. Verification, through the Construction Inspection Program, of the licensed operator training and requalification program.

Based on the ~~procedures described~~ above, the reviewer will determine the overall acceptability of the applicant's initial and requalification licensed operator training programs.

## III. ACCEPTANCE CRITERIA

1. Acceptance criteria are based on meeting the relevant requirements of the following Commission regulations:

    - 10 CFR 50.34(a)(6) and (9)
    - 10 CFR 50.34(b)(6)(i), (ii), (iii), and (iv)
    - 10 CFR 50.34(f)(2)(i)

- 10 CFR 50.40(a) and (b)
- 10 CFR 50.~~54(a)(i-1)~~48
- 10 CFR 50.54(a)(i-1)
- 10 CFR 50.120(b~~)(1), (b)(2) and (b)(3~~)
- 10 CFR 52.47(a)(7)
- 10 CFR 52.79(a)(14), (33), (34), (39), (40) and (44)
- 10 CFR 55.31(a)(4) and (5)
- 10 CFR 55.41~~, Written Examination: Operators~~
- 10 CFR 55.43~~, Written Examination: Senior Operators~~
- 10 CFR 55.45~~, Operating Tests~~
- 10 CFR 55.46~~, Simulation Facilities~~
- 10 CFR 55.59~~, Requalification~~

The acceptance criteria are designed to meet 10 CFR 50.40(a) and (b) for all CP, OL, and COL reviews. As necessary for COL reviews, implementation of methods designed to meet the acceptance criteria may be verified through the Consruction Inspection Program.

Specific criteria are as follows:

a. The applicant has committed to RG 1.8, "Qualification and Training of Personnel for Nuclear Power Plants." RG 1.8 endorses American National Standards Institute ~~(ANSI)/~~/American Nuclear Society (ANSI/ANS)-3.1-1993, "Selection, Qualification, and Training of Personnel for Nuclear Power Plants."

b. The COL applicant has committed to NEI 06-13A, "Template for an Industry Training Program Description." NEI 06-13A describes a training program that the staff has found ~~is~~as a way to decribe an acceptable ~~example of a~~ licensed operator training program.

c. The applicant has committed to RG 1.149, "Nuclear Power Plant Simulation Facilities for Use in Operator Training and License Examinations." RG 1.149 endorses ANSI/ANS-3.5-1998, "Nuclear Power Plant Simulators for Use in Operator Training and Examination."

d. Initial and requalification licensed operator training shall be developed, established, implemented, and maintained using a systems approach to training, as defined in 10 CFR 55.4, "Definitions."

e. For nuclear power plant license applicants, the technical submittal shall demonstrate that a licensed operator training program will be established, implemented, and maintained by 18 months prior to fuel load by means of the following:

   (1) The applicant has described how the licensed operator training program conforms to RG 1.8, "Qualification and Training of Personnel for Nuclear Power Plants."

(2) The subjects covered in the licensed operator training program should include, as a minimum, the subjects in 10 CFR 55.31, "How to Apply~~;~~;," 10 CFR 55.41~~;~~, "Written examination: Operators"; 10 CFR 55.43~~;~~, "Written examination: Senior operators"; 10 CFR 55.45~~;~~, "Operating tests"; and RG~~-~~ 1.8 for reactor operators and senior reactor operators, as appropriate.

(3) For COL reviews, the applicant has described how the licensed operator training program conforms to NEI 06-13A, "Template for an Industry Training Program Description."

For DC reviews, the development of licensed operator training program will be designated as a COL applicant action item.

f. The submittal shall demonstrate that a requalification program for operators and senior operators that conforms to 10 CFR 55.59 will be in effect within 3 months of either the issuance of an OL or the date that the Commission makes the 10~~-~~ CFR 52.103(g) finding.

g. A system is in place to periodically evaluate the licensed operator training program by individuals other than those directly responsible for the training. This evaluation should include an assessment of program effectiveness in developing the trainees' ~~abilities~~ability to meet performance requirements of the job. The program should be periodically revised and updated, to reflect the ~~results~~result of program evaluations, industry experience, and changes to the facility, procedures, regulations, and quality requirements.

2. Review Interfaces

Other SRP sections interface with this section as follows:

a. The structure, functions, and responsibilities of the onsite organizations to operate and maintain the plant are reviewed in SRP Section 13.1.2, "Operating Organization."

b. ~~Addition~~Additional guidance for identifying operational programs is provided in SRP, Section 13.4, "Operational Programs."

c. Procedure adequacy is reviewed in SRP Section 13.5.1, "Administrative Procedures" and SRP Section 13.5.2, "Operating and Emergency Operating Procedures."

d. Human factors engineering practices and guidelines are evaluated in SRP Section 18.0, "Human Factors Engineering."

3. Technical Rationale

Compliance with the relevant requirements of 10 CFR 50.34~~, "Contents of Applications; Technical Information";~~ 10 CFR 50.40, "Common Standards~~";~~," 10 CFR 50.54, "Conditions of Licenses~~";~~," 10 CFR 50.120, "Training and Qualification ~~of~~Of Nuclear Power Plant Personnel~~";~~," 10 CFR 55.31~~;~~, "How to Apply"; 10 CFR 55.41; 10 CFR 55.43; 10 CFR 55.45~~;~~, "Operating Tests"; 10 CFR 55.46~~;~~, "Simulation Facilities,"; and 10 CFR 55.59 ~~requires~~require the applicant to be technically qualified in order to engage in the personnel training activities associated with the design, construction, and operation of a nuclear power plant, in accordance with the regulations in 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities."

Compliance with the relevant requirements of 10 CFR 52.47, "Contents of ~~Applications; Technical Information";~~applications; technical information," 10~~-~~ CFR 52.79, "Contents of Applications; Technical Information ~~in a~~In Final Safety Analysis Report~~";~~," 10 CFR 55.31; 10 CFR 55.41; 10 CFR 55.43; 10 CFR 55.45; 10 CFR 55.46; and 10 CFR 55.59 ~~requires~~require the applicant to be technically qualified in order to engage in the personnel training activities associated with the design, construction, and operation of a nuclear power plant, in accordance with the regulations in 10 CFR Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants~~.~~"," 

Meeting the requirements of 10 CFR 50.34, 10 CFR 50.40, 10 CFR 50.54, 10 CFR 50.120, 10 CFR 52.47, 10 CFR 52.79, 10 CFR 55.31, 10 CFR 55.41, 10 CFR 55.43, 10 CFR 55.45, 10 CFR 55.46, and 10 CFR 55.59, as applicable, provides assurance that the applicant is technically qualified to engage in the proposed activities and has established the necessary licensed operator training program to safely ~~design, construct,~~ operate~~,~~ and maintain the facility.

## IV. EVALUATION FINDINGS

The reviewer verifies that the applicant has provided sufficient information and that the staff's technical review and analysis support conclusions to be included in the staff's Safety Evaluation Report. The reviewer also states the bases for those conclusions.

The staff concludes that the licensed operator training and requalification program for licensed operators and senior operators is acceptable and meets the requirements of 10 CFR 50.34(b), 10 CFR 50.34(f), 10 CFR 50.54(i-1), 10 CFR 50.120, 10 CFR 52.79(a), 10 CFR 55.31(a), 10 CFR 55.41, 10 CFR 55.43, 10 CFR 55.45, 10 CFR 55.46, and 10 CFR 55.59. This conclusion is based on the following:

1. Construction Permit or Combined License

The applicant has stated that a training program will be established [for COL, in accordance with the implementation milestones] to provide licensed operators with sufficient knowledge and operating experience to start up, operate, shut down, and maintain the plant in a safe manner. The licensed operator training program is derived

from a systems approach to training and will conform to the regulatory requirements of 10 CFR Part 55, "Operators' Licenses," and, for COL applicants, the guidance of NEI 06-13A. Licensed operators and senior operators will receive the technical and administrative training required to operate the facility during normal, abnormal, and emergency conditions, as well as training in security procedures, radiological emergency plans, administrative procedures, radiation protection, fire protection, and fitness for duty. Simulation facilities used for the licensed operator training program shall meet 10 CFR 55.46 and be consistent with the guidance of RG 1.149, which endorses ANSI/ANS-3.5, "Nuclear Power Plant Simulators for Use in Operator Training and Examination."

The information submitted relative to these subjects is satisfactory for the preoperational test program, for operator licensing, and for fuel loading.

2. Operating License or Combined License holders

Verification of the licensed operator training program will be accomplished through the Consruction Inspection Program by reviewing the items included in Section I.1. The licensed operator training program is designed to meet the individual needs of the participants, depending upon their backgrounds, previous training, and expected job assignments. The program is derived from a systems approach to training and will conform to the regulatory requirements of 10 CFR Part 55 and, for COL applicants, the guidance of NEI 06-13A. Simulation facilities used for the licensed operator training program shall meet 10 CFR 55.46 and be consistent with the guidance of RG 1.149, which endorses ANSI/ANS-3.5, "Nuclear Power Plant Simulators for Use in Operator Training and Examination."

The licensed operator requalification training program conforms to the requirements of 10 CFR 50.54(i-1), 10 CFR 52.79(a)(34), 10 CFR 55.59 and, for COL applicants, the guidance of NEI 06-13A.

3. Design Certification

For DC reviews, the findings will summarize the staff's evaluation of COL action items relevant to this SRP section.

## V. IMPLEMENTATION

The staff will use this SRP section in performing safety evaluations of DC applications and license applications submitted by applicants pursuant to 10 CFR Part 50 or 10 CFR Part 52. Except when the applicant proposes an acceptable alternative method for complying with specified portions of the Commission's regulations, the staff will use the method described herein to evaluate conformance with Commission regulations.

Implementation schedules for conformance to parts of the review plan discussed herein are contained in the referenced regulatory guides and NUREGs.

## VI. REFERENCES


1. ~~10 CFR Part 19,~~ *U.S. Code of Federal Regulations,* "Notices, Instructions, and Reports to Workers: Inspection and Investigations," Part 19, Chapter 1, Title 10, "Energy."

2. ~~10 CFR Part 26,~~ *U.S. Code of Federal Regulations,* "Fitness for Duty Programs," Part 26, Chapter 1, Title 10, "Energy."

3. ~~10 CFR Part 50,~~ *U.S. Code of Federal Regulations,* "Licensing of Production and Utilization Facilities," Part 50, Chapter 1, Title 10, "Energy."

4. ~~10 CFR Part 50,~~ *U.S. Code of Federal Regulations,* Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities," Part 50, Chapter 1, Title 10, "Energy."

5. ~~10 CFR Part 52,~~ *U.S. Code of Federal Regulations,* "Licenses, Certifications, and Approvals for Nuclear Power Plants," Part 52, Chapter 1, Title 10, "Energy."

6. *U.S. Code of Federal Regulations,* 10 CFR Part 55, "Operators' Licenses," Part 55, Chapter 1, Title 10, "Energy."

7. American National Standards Institute/American Nuclear Society, ANSI/ANS-3.5, "Nuclear Power Plant Simulators for Use in Operator Training and Examination~~."~~," ANS, LaGrange Park, IL.

8. ~~ISG, DC/COL-ISG-011~~Nuclear Energy Institute, NEI 06-13A, "Template for an Industry Training Program Description," Palo Alto, CA.

~~8.~~9. U.S. Nuclear Regulatory Commission, "Finalizing Licensing-Basis Information~~."~~," Interim Staff Guidance, DC/COL-ISG-011.

~~9.~~10. ~~ISG, DC/COL-ISG-015~~U.S. Nuclear Regulatory Commission, "Post-Combined License Commitments~~."~~," Interim Staff Guidance, DC/COL-ISG-015.

~~10. NEI 06-13A, "Template for an Industry Training Program Description."~~

~~12.~~11. ~~NRC Inspection Manual Chapter IMC-2504,~~ U.S. Nuclear Regulatory Commission, "Construction Inspection Program – Inspection of Construction and Operational Programs," NRC Inspection Manual Chapter IMC-2504, October 15, 2009.

~~13.~~ U.S. Nuclear Regulatory Commission, NUREG-0711, "Human Factors Engineering Program Review Model~~."~~

12. ," NUREG-~~0718~~0711.

~~15.~~13. U.S. Nuclear Regulatory Commission, "Licensing Requirements for Pending Applications for Construction Permits and Manufacturing License~~."~~," NUREG-0718.

~~16.~~14. ~~NUREG-1021~~U.S. Nuclear Regulatory Commission, “Operator Licensing Examination Standards for Power Reactors~~.”~~,” NUREG-1021.

~~17.~~15. ~~NUREG-1220~~U.S. Nuclear Regulatory Commission, “Training Review Criteria and Procedures~~.”~~,” NUREG-1220.

~~18.~~16. ~~NUREG-0737 and Supplement 1~~U.S. Nuclear Regulatory Commission, “Clarification of TMI Action Plan ~~requirements.”~~Requirements,” NUREG-0737 and Supplement 1.

~~19.~~17. ~~RG 1.8~~U.S. Nuclear Regulatory Commission, "Qualification and Training of Personnel for Nuclear Power Plants~~.”~~,” Regulatory Guide 1.8.

~~20.~~18. ~~RG 1.149~~U.S. Nuclear Regulatory Commission, “Nuclear Power Plant Simulation Facilities for Use in Operator Training and License Examinations~~."~~," Regulatory Guide 1.149.

~~21.~~19. ~~RG 1.189~~U.S. Nuclear Regulatory Commission, “Fire Protection for Nuclear Power Plants~~.”~~,” Regulatory Guide 1.189.

~~22.~~20. ~~RG 1.206~~U.S. Nuclear Regulatory Commission, "Combined License Applications for Nuclear Power Plants (LWR Edition~~).”~~),” Regulatory Guide 1.206.

**PAPERWORK REDUCTION ACT STATEMENT**

The information collections contained in the draft Standard Review Plan are covered by the requirements of 10 CFR Part 50, 10 CFR Part 52 and 10 CFR Part ~~52~~55, and were approved by the Office of Management and Budget, approval number 3150-0011, 3150-0151 and 3150-~~0151~~0018.

**PUBLIC PROTECTION NOTIFICATION**

The NRC may not conduct or sponsor, and a person is not required to respond to, a request for information or an information collection requirement unless the requesting document displays a currently valid OMB control number.

## SRP Section 13.2.1
## Description of Changes

## Section 13.2.1 – Reactor Operator Requalification Program; Reactor Operator Training

This revision of SRP Section 13.2.1 has been restructured and reorganized to clarify staff guidance. To this end, while this guidance has been significantly revised, it does not contain new staff positions. A listing of detailed changes to this section from its previous revision has thus been omitted.