

THIS PRELIMINARY PROPOSED RULE LANGUAGE AND ACCOMPANYING DISCUSSION IS BEING RELEASED TO SUPPORT INTERACTIONS WITH STAKEHOLDERS AND THE ADVISORY COMMITTEE ON REACTOR SAFEGUARDS (ACRS). THIS LANGUAGE HAS NOT BEEN SUBJECT TO COMPLETE NRC MANAGEMENT OR LEGAL REVIEW, AND ITS CONTENTS SHOULD NOT BE INTERPRETED AS OFFICIAL AGENCY POSITIONS.

SUBPART F – PRELIMINARY RULE LANGUAGE (2nd Iteration - June 2022)

SUBPART F: REQUIREMENTS FOR OPERATION

Preliminary Language	Discussion
<p>§ 53.700 Operational objectives.</p> <p>Each licensee shall define(a) <u>Each holder of an operating license or combined license under this part must develop</u>, implement, and maintain controls for plant SSCs, responsibilities of plant personnel, and plant programs during the operating life of each commercial nuclear plant such that the safety criteria<u>requirements</u> defined in Subpart B are satisfied.</p> <p>(b) Each licensee shall<u>holder of an operating license or combined license under this part must</u> maintain the capabilities and reliabilities of facility<u>plant</u> structures, systems, and components to ensure that the safety functions identified in § 53.230 will be performed if called upon during normal operations and licensing basis events.</p> <p>(c) Each licensee shall<u>holder of an operating license or combined license must</u> ensure that plant personnel have adequate knowledge and skills to perform their assigned duties that support the performance of the safety functions identified in § 53.230. Each licensee shall implement plant programs during operations sufficient to ensure that the safety functions identified in § 53.230 will be performed if called upon during normal operations and licensing basis events.</p> <p>(d) Each licensee shall<u>holder of an operating license or combined license must implement plant programs sufficient to ensure that the safety functions identified in § 53.230 will be performed if called upon during</u></p>	<p>Changes to §§ 53.700 through 73.720 are primarily to improve consistency and alignment with previously released iterations of preliminary rule text for Framework A, Subparts A through K</p>

<p><u>normal operations and licensing basis events.</u></p>	
<p>§ 53.710 Maintaining capabilities and availability of structures, systems, and components.</p> <p>Controls must be provided for each commercial nuclear plant such that the capabilities and reliability of <u>plant</u> SSCs, when combined with associated programmatic controls and human actions, provide reasonable assurance that the safety criteria defined in §§ 53.210 and 53.220 will be met.</p> <p>(a) Technical specifications must be developed and implemented, <u>and maintained</u> that define conditions or limitations on plant operations that are necessary to provide reasonable assurance that SR SSCs fulfill the safety functions identified in § 53.230 and that satisfy the safety criteria of § 53.210. The technical specifications must describe the following requirements:</p> <p>(1) Limits on the inventory of radioactive materials within the reactor system and supporting systems with the potential, individually or collectively, to cause a release exceeding the safety criteria in § 53.210 as a result of a design basis accident analyzed in accordance with § 53.450(f).</p> <p>(2) Operating limits for the facility that if exceeded could lead to a failure to perform a required safety function necessary to meet the safety criteria in § 53.210.</p> <p>(3) For each SSC classified as SR in accordance with § 53.460, technical specifications must define:</p> <p>(i) <i>Limiting conditions for operation</i>. Limiting conditions for operation are the lowest functional capability or performance levels of SR SSCs required to provide reasonable assurance that the design basis accidents analyzed in accordance with § 53.450 <u>§ 53.450(e)</u> would not give rise to an immediate threat to the public health and safety as represented by the safety criteria of § 53.210. When a limiting condition for operation is not met, the licensee must shut down the plant or follow any remedial action permitted by the technical specifications until the condition</p>	

~~will~~can be met.

(ii) *Surveillance requirements.* Surveillance requirements ~~relate~~are requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained and that the limiting conditions for operation will be met.

(4) *Design attributes.* ~~Design attributes~~ to be included are those attributes of the ~~facility~~plant such as materials of construction and geometric arrangements, which, if altered or modified, would have a significant effect on safety and are not covered in categories described in paragraphs (a)(1)-(3) of this section.

(5) *Administrative controls.* ~~Administrative controls~~ are the provisions relating to organization and management, procedures, recordkeeping, review and audit, and reporting necessary to assure operation of the ~~facility~~plant in a safe manner. Each licensee must submit any reports to the Commission pursuant to approved technical specifications as specified in § 53.40.

~~(6) Decommissioning-related requirements apply only to commercial nuclear plants that have submitted the certifications required by subpart G of this part. Technical specifications involving limiting conditions for operation; surveillance requirements; design features; and administrative controls will be developed on a case-by-case basis.~~

(b) Controls on plant operations, including availability controls, must be developed and implemented to provide ~~reasonable~~appropriate confidence that the configurations and special treatments for NSRSS SSCs provide the capabilities and reliabilities required to satisfy the ~~safety~~ criteria of ~~§§§ 53.220- and 53.450(e)~~. The controls must:

(1)(i) Identify who within the commercial nuclear plant has authority to make configuration changes;

(ii) Establish processes to make configuration changes to ~~the commercial nuclear plant's system; and NSRSS SSCs; and~~

(iii) Establish processes to ensure that all departments of the

<p>commercial nuclear plant affected by the configuration changes are formally notified and approve of the change.</p> <p>(2) Describe the means by which<u>how</u> the special treatments for each NSRSS SSC will be provided<u>established</u> and maintained over the operating life of the commercial nuclear plant.</p>	
<p>§ 53.715 Maintenance, repair, and inspection programs.</p> <p>(a) A program to control maintenance activities and monitor the performance or condition of SR and SS<u>NSRSS</u> SSCs must be developed and<u> implemented, and maintained</u> to provide reasonable assurance that the safety criteria defined in §§ 53.210 and 53.220 of this part will be met.</p> <p>(b) Whenever a licensee determines through activities related to maintenance, repair, and inspection of SSCs;<u>;</u> the activities under § 53.710;<u>;</u> or otherwise that the performance or condition of an<u>an</u> NSRSS SSC does not meet established special treatment requirements<u>treatments</u> or performance goals related to capabilities or reliabilities, the licensee must take appropriate corrective action.</p> <p>(c) Performance and condition monitoring activities and associated goals and preventive maintenance activities must be evaluated at least every 24 months. The evaluations must take into account, where practical, industry-wide operating experience. Adjustments must be made where necessary to ensure that the objective of preventing failures of SSCs through maintenance is appropriately balanced against the objective of minimizing unavailability of SSCs due to monitoring or preventive maintenance.</p> <p>(d) Before performing maintenance activities (including but not limited to surveillance, post-maintenance testing, and corrective and preventive maintenance), the licensee must assess and manage the increase in risk that may result from the proposed maintenance activities. The scope of the assessment may be limited to SSCs that a risk-informed evaluation process determines are necessary to provide reasonable assurance that the performance measures<u>criteria</u> defined in §§ 53.210, <u>53.220</u>, and 53.220<u>450(e)</u> of this part will be met.</p>	

<p>§ 53.720 Response to <u>naturalseismic</u> events.</p> <p>———If vibratory ground motion exceeding that of the Operating Basis Earthquake Ground Motion or significant plant damage <u>due to vibratory ground motion</u> occurs, the licensee must shut down the commercial nuclear plant. If systems, structures, or components <u>If SSCs</u> necessary for the safe shutdown of the commercial nuclear plant are not available after the occurrence of the Operating Basis Earthquake Ground Motion <u>this vibratory ground motion</u>, the licensee must consult with the Commission and must propose a plan for the timely, safe shutdown of the commercial nuclear power plant. Prior to resuming operations, the licensee must demonstrate to the Commission that no functional damage has occurred to those features necessary for continued operation without undue risk to the health and safety of the public and <u>that</u> the licensing basis is maintained.</p>	
<p>§ 53.725 General staffing, training, personnel qualifications, and human factors requirements</p> <p>(a) <i>Purpose and applicability.</i> The regulations in §§ 53.725 through 53.840 address areas related to staffing, training, personnel qualifications, and human factors for applicants for or holders of operating licenses or combined licenses under <u>Framework A of</u> this part. These regulations are organized as follows:</p> <p>(1) Sections 53.725 through 53.755 address general requirements for operator staffing, training, personnel qualifications, and human factors. The regulations within these sections are applicable to all applicants for <u>and/or</u> holders of operating licenses or combined licenses for commercial nuclear plants under this part, except where specifically stated otherwise.</p> <p>(2) Sections 53.760 through 53.795 address operator <u>and</u></p>	<p>Commercial nuclear plants licensed under this part will have licensed operator staffing consisting of either specifically licensed operators (ROs) and senior licensed operators (SROs) or generally licensed reactor operators (GLROs).</p> <p>Under the revised framework of subpart F, operator licenses consist of general licenses and specific licenses. A specific license is issued to a named person and is effective upon approval by the Commission of an application filed pursuant to the regulations in this part and issuance of licensing documents to the applicant. Specific licenses are issued to ROs and SROs under the requirements of §§ 53.760 through 53.795. In contrast, a general license</p>

<p><u>senior operator</u> licensing requirements. The regulations within this section<u>these sections</u> are applicable to those applicants for and/or holders of operating licenses or combined licenses for commercial nuclear plants under this part who<u>that</u> do not meet the criteria provided under § 53.740(b)800 and have not yet certified the <u>permanent cessation of operations and</u> permanent removal of fuel from the reactor vessel as described under § 53.1070.</p> <p>(3) Sections 53.800 through 53.830 address certified<u>generally licensed</u> operator requirements. The regulations within this section<u>these sections</u> are provided as an alternative to<u>in lieu of</u> §§ 53.760 through 53.795 for those applicants for or holders of operating licenses or combined licenses for commercial nuclear plants under this part who<u>that</u> meet the criteria provided under § 53.740(b)800 and have not yet certified the <u>permanent cessation of operations and</u> permanent removal of fuel from the reactor vessel as described under § 53.1070.</p> <p>(4) Sections 53.835 through 53.840 address<u>provide</u> general personnel training requirements. The regulations within this section<u>these sections</u> are applicable to all applicants for and/or holders of operating licenses or combined licenses for commercial nuclear plants under this part.</p>	<p>is effective without the filing of an application with the Commission or the issuance of licensing documents to a particular person. The general licensing of GLROs is addressed by the requirements of §§ 53.800 through 53.830.</p> <p>For clarity, it should be noted that only a single license level exists within the GLRO framework. Plants meeting the criteria for using GLROs would have to use GLROs in lieu of specifically licensed ROs and SROs within their staffing models. GLROs, when used, would be licensed under the general license provision of this part and would take on those administrative duties that would have otherwise been performed by SROs and, furthermore, would be allowed to perform reactivity manipulations (§§ 53.800 through 53.830 addresses the requirements associated with GLROs). The requirements for GLROs would be relaxed compared to those for specifically licensed ROs and SROs but would be more rigorous than those currently required for non-licensed auxiliary operators.</p>
<p>(b) Definitions. As<u>(b) Definitions. When used in §§ 53.725 through 53.840, applicant refers to an applicant for an operator or senior operator license; licensee refers to the holder of an operator, senior operator, or generally licensed operator license; and facility licensee refers to the licensee for the commercial nuclear plant where the applicant would be licensed or the licensee is licensed. As also</u> used in §§ 53.725 through 53.840:</p> <p><i>Automation</i> means a device or system that accomplishes (partially or fully) a function or task.</p> <p><i>Auxiliary operator</i>, as used within this part, means those staff any individual who operates components of a commercial nuclear plant who operate but does not manipulate controls or direct the manipulation of controls of the plant components but are and is not</p>	<p>The definition section now clarifies the meanings of applicant, licensee, and facility licensee within the context of this section.</p> <p>A new definition has been added to address GLROs.</p> <p>The definition of load following has been modified to generically address plant output. The objective of this is to allow for load following in the contexts of electrical generation as well as for process heat output for applications such as hydrogen production, desalination, and district heating.</p>

required to be licensed ~~or certified~~ under the provisions of this part.

~~*Certified*~~ *Generally licensed operator* means ~~any~~ individual ~~certified~~licensed under the provisions of §§ 53.800 through 53.830810 to manipulate controls of a ~~control of a facility~~. ~~*Certified commercial nuclear plant and to direct the licensed activities of generally licensed operators are not licensed by the Commission.*~~

Controls when used with respect to a nuclear reactor means apparatus and mechanisms the manipulation of which directly affects the reactivity or power level of the reactor.

~~*Licensed operator*~~*Operator* means any individual licensed under the provisions of §§ 53.760 through 53.795 to manipulate ~~a control~~controls of a ~~facility~~commercial nuclear plant.

~~*Load following, as used within this subpart,*~~ means a commercial nuclear ~~power~~ plant automatically changing its ~~generation of electricity~~output to match expected ~~electrical~~ demand in response to externally originated instructions or signals.

Performance testing means testing conducted to verify a simulation facility's performance as compared to actual or predicted reference plant performance.

Reference plant means the specific commercial nuclear ~~power~~ plant on which a simulation facility's configuration, system control arrangement, and design data are based. The reference plant may or may not be actually constructed.

~~*Senior licensed operator*~~ means any individual licensed under the provisions of §§ 53.760 through 53.795 to manipulate ~~the~~ controls of a ~~facility~~commercial nuclear plant and to direct the licensed activities of ~~licensed~~ operators.

Simulation facility means an interface designed to provide a realistic imitation of the operation of a ~~facility~~commercial nuclear plant, used for ~~either the conduct~~administration of examinations, ~~for operator licensing or operator certification, training, and/or to establish on the job training and meet~~ experience ~~prerequisites~~requirements for ~~operator licensing applicants or licensees. The reference plant itself, in whole or operator certification eligibility, in part, may serve as the simulation facility.~~

The definition of simulation facility has been modified to clarify that the plant itself may potentially serve as a simulation facility.

<p><i>Systems approach to training</i> means a training program that includes the following five elements:</p> <ol style="list-style-type: none"> (1) Systematic analysis of the jobs to be performed. (2) Learning objectives derived from the analysis which describe desired performance after training. (3) Training design and implementation based on the learning objectives. (4) Evaluation of trainee mastery of the objectives during training. (5) Evaluation and revision of the training based on the performance of trained personnel in the job setting. 	
<p>§ 53.726 Communications</p> <p><u>An applicant or licensee or facility licensee shall submit any communication or report concerning the regulations contained within §§ 53.725 through 53.840 and shall submit any application filed under these regulations to the Commission.</u></p>	<p>Adapted from § 55.5</p>
<p>§ 53.727 Information Collection Requirements</p> <p><u>(a) The Nuclear Regulatory Commission has submitted the information collection requirements contained within §§ 53.725 through 53.840 to the Office of Management and Budget (OMB) for approval as required by the Paperwork Reduction Act (44 U.S.C. 3501 et seq.). The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. OMB has approved the information collection requirements contained within §§ 53.725 through 53.840 under control number XXXX-XXXX.</u></p> <p><u>(b) The approved information collection requirements appear in §§ 53.766, 53.775, 53.780, 53.785, and 53.792.</u></p> <p><u>(c) §§ 53.725 through 53.840 contain information collection requirements in addition to those approved under the control number specified in paragraph (a) of this section. These information collection</u></p>	<p>Adapted from § 55.8</p>

<p><u>requirements and the control numbers under which they are approved are as follows:</u></p> <p><u>(1) In §§ 53.766, 53.775, 53.780, and 53.792, NRC Form 396 is approved under control number XXXX-XXXX.</u></p> <p><u>(2) In §§ 53.780 and 53.792, NRC Form 398 is approved under control number XXXX-XXXX.</u></p> <p><u>(3) In §§ 53.785, clearance is approved under control number XXXX-XXXX.</u></p>	
<p>§ 53.730 Defining, fulfilling, and maintaining the role of personnel in ensuring safe operations</p> <p>Each licensee or applicant for <u>or holder of</u> an operating license or combined license <u>for a commercial nuclear plant</u> under this part shall<u>must</u> develop, implement, and maintain the following measures to ensure that human actions needed to fulfill<u>fulfill</u> safety functions <u>required in § 53.230</u>, prevent or mitigate licensing basis events, or otherwise meet the safety criteria in §§ 53.210 and 53.220 and, if applicable, any alternative criteria used in accordance with § 53.470, are satisfied:</p>	
<p>(a) <i>Human factors engineering design requirements.</i> The facility<u>plant</u> design must reflect state-of-the-art human factors principles for safe and reliable performance in all settings<u>locations</u> that human activities are expected for performing or supporting the continued availability of plant safety or emergency response functions.</p>	<p>Paragraph (a) adapted from § 50.34(f)(2)(iii).</p>
<p>(b) <i>Human system interface design requirements.</i> The facility<u>plant</u> design must provide for the following to support operators<u>operating personnel</u> in monitoring plant conditions and responding to plant events:</p>	
<p>(1) features for displaying to operators<u>operating personnel</u> a minimum set of parameters that define the safety status of the plant</p>	<p>Paragraph (b)(1) adapted from § 50.34(f)(2)(iv).</p>

<p>and are capable of displaying both the full range of important plant parameters and data trends on demand, as well as indicating when process limits are being approached or exceeded;</p>	
<p>(2) automatic indication of the bypassed and operable status of safety systems;</p>	<p>Paragraph (b)(2) adapted from § 50.34(f)(2)(v).</p>
<p>(3) direct indication of SSC status that relates to the ability of the SSC to perform its safety function. <u>Examples include, such as (1) relief and safety valve position (i.e., open or closed) for barriers important to fulfilling the safety functions of § 53.230</u> with such devices, and (2) ultimate heat sink and cooling system status and availability;</p>	<p>Paragraph (b)(3) adapted from §§ 50.34(f)(2)(xi), 50.34(f)(2)(xii), and 50.34(f)(2)(xxi).</p>
<p>(4) instrumentation to measure, record, and <u>readout/display</u> key plant parameters related to the performance of SSCs and the integrity of barriers important to fulfilling the safety functions of § 53.230. Examples include temperatures and pressures within important systems or structures, core or fuel system conditions (including possible damage states), temperatures and levels associated with cooling functions, combustible gas concentrations, radiation levels in systems and within structures, and radioactive effluent releases;</p>	<p>Paragraph (b)(4) adapted from §§ 50.34(f)(2)(xvii), 50.34(f)(2)(xviii), 50.34(f)(2)(xix), and 50.34(f)(2)(xxiv).</p>
<p>(5) leakage control and detection in the design of systems that pass-through barriers <u>important to fulfilling the safety functions of § 53.230</u> to the release of radionuclides. An example is an SSC that penetrates a containment structure that might contain radioactive materials that could contribute to the source term during an accident, and;</p>	<p>Paragraph (b)(5) adapted from § 50.34(f)(2)(xxvi).</p>
<p>(6) monitoring of in-plant radiation and airborne radioactivity as appropriate for a broad range of <u>routinenormal operating</u> and accident conditions; and</p>	<p>Paragraph (b)(6) adapted from § 50.34(f)(2)(xxvii).</p>

<p><u>(7) For holders of an operating license or combined license subject to the provisions of §§ 53.800 through 53.830, the plant design must also provide the generally licensed operators with the capability to do the following:</u></p> <ul style="list-style-type: none"> <u>(i) receive plant operating data, including reactor parameters and information needed for the evaluation of emergency conditions.</u> <u>(ii) immediately initiate a reactor shutdown from his or her location.</u> <u>(iii) promptly dispatch operations and maintenance personnel.</u> <u>(iv) immediately implement responsibilities under the facility emergency plan, as applicable.</u> 	<p>These design requirements apply to GLRO plants only. It is important to note that GLRO plants are not expected to have an operator role in the fulfillment of safety functions and, as such, 53.730(a) will not require the same degree of HFE depth and scope from an operations standpoint on the part of GLRO facilities. In recognition of this, these requirements establish minimal design features to ensure that the GLRO role is supported.</p>
<p>(c) <i>Concept of operations.</i> A concept of operations that is of sufficient scope and detail to address how the <u>facilityplant</u> and <u>operating</u> personnel will achieve the safety requirements of Subpart B must be provided. The concept of operations <u>willmust</u>, at a minimum, address the following:</p> <ul style="list-style-type: none"> (1) <u>facilityplant</u> goals, (2) the roles and responsibilities of <u>operating</u> personnel and automation (or any combination thereof) that are responsible for completing plant functions, (3) staffing, qualifications, and training, (4) the management of normal operations, (5) the management of off-normal conditions and emergencies, (6) the management of maintenance and modifications, and (7) the management of tests, inspections, and surveillance tasks. 	
<p>(d) <u>Functional requirements analysis and function allocation.</u> A functional requirements analysis and <u>a</u> function allocation must be provided that are sufficient to satisfy the following:</p> <ul style="list-style-type: none"> (1) the functional requirements analysis must address how safety functions and functional safety criteria are satisfied, and (2) the function allocation must describe how the safety functions will be assigned to human action, automation, active safety 	

<p>features, passive safety features, or inherent safety characteristics.</p>	
<p>(e) <i>Programmatic requirements.</i> (1) A program, to begin during construction and follow <u>inteduring</u> operation, <u>as applicable</u>, for evaluating and applying operating experience must be developed and, implemented, <u>and maintained</u>.</p> <p>(2) A program, to begin during construction and follow <u>inteduring</u> operation, <u>as applicable</u>, for developing and maintaining plant procedures must be developed and implemented. The scope of the program must include emergency procedures, reliability analyses, human factors engineering, crisis management, and operator <u>operating personnel</u> training, <u>as applicable</u>.</p>	<p>Paragraph (e)(1) adapted from § 50.34(f)(3)(i).</p> <p>Paragraph (e)(2) adapted from § 50.34(f)(2)(ii).</p>
<p>(f) <i>Staffing plan.</i> A staffing plan must be developed to include the numbers, positions, and qualifications of licensed operators and senior licensed operators or, if applicable, certified <u>generally licensed</u> operators across all modes of plant operations, and the numbers, positions, and responsibilities of personnel providing support in areas such as plant operations, equipment surveillance and maintenance, radiological protection, chemistry control, fire brigades, engineering, security, and emergency response.</p>	
<p>(1) Applicants and licensees <u>(1) The staffing plan must include a description of how engineering expertise will be available to the on-shift operating personnel during all plant conditions, to assist in the event that they encounter a situation not covered by procedures or training. Engineering expertise includes familiarity with the operation of the plant for which the expertise is provided and one of the following:</u></p> <p><u>(i) a bachelor's degree in engineering from an institution accredited by a U.S. Government recognized accrediting body or equivalent; or</u></p> <p><u>(ii) a Professional Engineer's license from a U.S. state or territory; or</u></p> <p><u>(iii) a bachelor's degree in engineering technology or physical science from an institution accredited by a U.S. Government</u></p>	<p>A new requirement for engineering expertise to be available to support the on-shift operators has been added here. A key driver behind this requirement is the need to provide support to operators during circumstances that fall outside of procedural guidance and training, as well as to address uncertainties that may be associated with the implementation of new technologies. This requirement is applicable to all facilities, whether staffed by specifically licensed ROs and SROs or by GLROs. This requirement represents a revision to the traditional Shift Technical Advisor role and balances providing greater flexibilities to facilities while also ensuring that degreed engineering expertise</p>

recognized accrediting body or equivalent, including course work in the physical, mathematical, or engineering sciences.

(2) Applicants for or holders of operating licenses or combined licenses subject to the provisions of §§ 53.760 through 53.795 must also include within their staffing plans a description of how the proposed numbers, positions, and qualifications of ~~licensed~~ operators and senior ~~licensed~~ operators across all modes of plant operations will be sufficient to provide assurance that plant safety functions ~~can~~will be maintained. This description must be supported by human factors engineering analysis and assessments.

~~(2) Applicants and licensees~~(3) Applicants for or holders of operating licenses or combined licenses subject to the provisions of §§ 53.800 through 53.830 must also include within their staffing plans a description of how generally licensed operator staffing that is both sufficient to continually monitor the operations of fueled reactors and to provide for a continuity of responsibility for facility operations at all times during the operating phase will be maintained.

(4) Applicants for or holders of operating licenses or combined licenses under this part must include within their staffing plans the numbers, positions, and responsibilities of personnel providing support in areas such as plant operations, equipment surveillance and maintenance, radiological protection, chemistry control, fire brigades, engineering, security, and emergency response. The numbers, positions, and responsibilities of the personnel not directly addressed by the requirements for operators, senior operators, or generally licensed ~~or certified~~ operators must reflect the evaluations of human factors engineering design requirements and concept of operations in paragraphs (a) and (c) of this section as well as other requirements within this part and Part 73 for security-related matters.

(5) The staffing plan must be approved by the NRC as part of its approval of the operating license or combined license for the plant. The approved staffing plan shall be subject to the requirements of § 53.1565.

is promptly available to operators when needed. It should be noted that there is no requirement for the engineering expertise requirement to be met by an individual who is co-located with the operations staff, thereby permitting the potential for this requirement to be met by an individual who is located remotely and in an on-call status, provided that factors such as communications and real-time plant information are accounted for.

Specific staffing plan requirements for GLRO plants are also covered by these requirements as well. In lieu of the human factors engineering based analyses and assessments needed to support the staffing plans of facilities staffed by ROs and SROs, a relatively simple set of requirements for what the staffing plans of GLRO plants must accomplish are provided.

Throughout this preliminary proposed rule language, reference is now made to the change evaluation process of § 53.1565 with respect to a number of the programs and plans described here.

<p>(g) <i>Training and examination programs.</i> Develop and implement proposed programs capable of satisfying the following requirements. <u>These programs must be approved by the NRC as part of its approval of the operating license or combined license for the plant:</u></p> <p>(1) For those applicants <u>for or holders of operating licenses or combined licenses under this part</u> subject to the provisions of §§ 53.760 through 53.795:</p> <p>(i) The operator licensing initial training program required under § 53.785(a),</p> <p>(ii) The operator licensing <u>initial</u> examination program required under § 53.785(b), and</p> <p>(iii) The operator licensing requalification program required under § 53.785(c).</p> <p>(2) For those applicants <u>for or holders of operating licenses or combined licenses under this part</u> subject to the alternative provisions of §§ 53.800 through 53.830:</p> <p>(i) The certified, the generally licensed operator initial training program required under § 53.815(a),</p> <p>(ii) The certified operator and examination program programs required under § 53.815.</p> <p><u>(3) The operator licensing requalification programs required under § 53.785(c) or 53.815(b), and</u></p> <p>(iii) The certified) must be implemented upon commencing the administration of initial examinations under the operator continuing training/licensing examination program required under § 53.785(b) or 53.815(e)-b), as applicable.</p>	
<p>§ 53.735 General exemptions</p> <p>The regulations in §§ 53.725 through 53.840<u>830</u> do not require a license or certification for an individual who –</p> <p>(a) Under the direction and in the presence of a certified<u>an</u> operator, licensed operator, or senior <u>operator or a generally</u> licensed operator, <u>as appropriate</u>, manipulates the controls of a</p>	<p>Adapted from § 55.13.</p>

<p><u>facility commercial nuclear plant</u> as a part of the individual's training in a facility licensee's training program as approved by the Commission to qualify for an operator <u>or senior operator</u> license or certification <u>generally licensed operator license, as appropriate</u>, under this part <u>these regulations</u>; or</p> <p>(b) Under the direction and in the presence of a certified <u>senior</u> operator or senior <u>generally</u> licensed operator, <u>as appropriate</u>, manipulates the controls of a <u>facility commercial nuclear plant</u> to load or unload the fuel into, out of, or within the reactor vessel.</p>	
<p>§ 53.740 Conditions for operations staffing for operating or combined licenses under this part.</p> <p><u>§ 53.740 Facility licensee requirements – General</u></p> <p>(a) Facility licensees must meet the requirements of either §§ 53.760 through 53.795 or §§ 53.800 through 53.830. In order to exercise the option to comply with the requirements of §§ 53.800 through 53.830 in lieu of §§ 53.760 through 53.795, facility licensees must meet all the criteria contained in paragraph (b) of this section, as appropriate.</p>	
<p><u>(b) The facility licensee must maintain the staffing complement described under its approved facility staffing plan until such time as the permanent cessation of operations and permanent removal of fuel from the reactor vessel has been certified as described under § 53.1070. The approved staffing plan shall be subject to the requirements of § 53.1565.</u></p> <p>(b) Facility licensees may comply with the requirements of §§ 53.800 through 53.830 in lieu of §§ 53.760 through 53.795 upon demonstrating the following:</p> <p><i>[It should be noted that the staff continues to work on the development and refinement of the criteria listed under § 53.740(b). Two options (A and B, below) for possible criteria are provided in the preliminary proposed rule language to support feedback from stakeholders.]</i></p>	

<p><i>[Option A]</i></p> <p>(1) The safety criteria of §§ 53.210 and 53.220 and, if applicable, any alternative criteria used in accordance with § 53.470, will be met without reliance on human actions for event mitigation;</p> <p>(2) The safety functions of § 53.230 can be achieved without reliance on human actions for event mitigation;</p> <p>(3) The requirements associated with defense in depth, as described under § 53.250, can be met without reliance on human actions for event mitigation;</p> <p>(4) The analysis of licensing basis events in accordance with § 53.450 demonstrates that the evaluation criteria for each event sequence can be met without reliance on human actions for event mitigation; and</p> <p>(5) The plant response to licensing basis events is not reliant on human actions to guarantee the performance of structures, systems and components. Compliance with this paragraph may be achieved through the use of structures, systems, and components that function through inherent characteristics or have engineered protections against human failures (e.g., system misalignments).</p> <p><i>[Option B]</i></p> <p>The safety criteria of § 53.210 and, if applicable, any alternative criteria used in accordance with § 53.470, can be met without mitigation by human actions, active engineered features, or passive design features with the exception of those passive features that are expected to survive licensing basis events and which are not subject to being made unavailable (or otherwise defeated) by credible human errors of commission and omission.</p>	
<p>(c) Except as provided under § 53.735, the facility licensee may not permit the manipulation of the controls of <u>any facility commercial nuclear plant</u> by anyone who is not <u>a an operator or senior operator or generally licensed operator, senior licensed operator, or certified operator as provided within this part appropriate.</u></p>	

<p><u>(d) Facility licensees subject to the requirements of §§ 53.760 through 53.795 and that have not yet certified the permanent cessation of operations and permanent removal of fuel from the reactor vessel as described under § 53.1070 must designate senior operators to be responsible for supervising the licensed activities of operators.</u></p> <p>(d) Upon commencing the administration of licensed operator and senior licensed operator licensing examinations as provided under § 53.785(b), or of operator certification examinations as provided under § 53.815(b), the licensee must have an operator requalification program. The operator requalification program must, at a minimum, meet the requirements of § 53.785(c) for licensed operators and senior licensed operators or of § 53.815(c) for certified operators. The approved operator requalification program shall be subject to the requirements of Subpart I, "Maintaining and Revising Licensing Basis Information During Operations," of this part.</p>	
<p>(e) Apparatus and mechanisms other than controls, the operation of which may affect the reactivity or power level of a reactor must be manipulated only while plant conditions are being monitored by an individual who is <u>an operator or senior operator or a generally licensed operator</u>, senior licensed operator, or certified operator pursuant to this part as appropriate.</p>	
<p>(f) Load following, as defined by § 53.725(b), must only may be permitted <u>if and the provisions of paragraph (e) of this section do not apply during load following operations provided that</u> one of the following <u>actions</u> is immediately capable of refusing demands from the grid operator when they could challenge the safe operation of the plant or when precluded by the plant equipment conditions:</p> <ul style="list-style-type: none"> (i) the actuation of an automatic protection system; or (ii) an automated control system; or (iii) an <u>individual who is operator or senior operator or a generally licensed operator</u>, senior licensed operator, or certified operator pursuant to this part as appropriate. 	

~~(fg)(1) Facility licensees subject to the requirements of §§ 53.760 through 53.795 and that have not yet certified the permanent removal of fuel from the reactor vessel as described under § 53.1070 must designate senior licensed operators to be responsible for supervising the licensed activities of licensed operators.~~

~~(g) The facility licensee must maintain the staffing complement described under their approved facility staffing plan until such time as the permanent removal of fuel from the reactor vessel has been certified as described under § 53.1070. The approved staffing plan shall be subject to the requirements of Subpart I, "Maintaining and Revising Licensing Basis Information During Operations," of this part.~~

~~(h)(1) Notwithstanding any other provisions of this section, facility licensees subject to the requirements of §§ 53.760 through 53.795 must have present, during alteration of the core of a commercial nuclear plant unit (including fuel loading or transfer), a person) an individual holding a senior licensed operator license or a senior licensed operator license limited to fuel handling to directly supervise the activity and, during this time, the facility licensee shall not assign other duties to this person.~~

~~(2) For a holder of an operating license or combined license under this part Facility licensees subject to the requirements of §§ 53.800 through 53.830, a certified operator, must behave present during alteration of the core of a commercial nuclear plant unit (including fuel loading or transfer) an individual holding a generally licensed operator license to directly supervise the activity and, during this time, the facility licensee shall not assign other duties to this person.~~

~~(3) These requirements do not apply to those facilities capable of continuous refueling operations while operating at power.~~

~~(i) Notwithstanding any other The provisions of paragraphs (g)(1) and (g)(2) of this section, a holder of an operating license or combined license under this part subject to do not apply to the requirements of §§ 53.800 through 53.830 and that have not yet certified alteration of the permanent removal of fuel from core while the reactor vessel as described under § 53.1070 must meet the following~~

requirements:

~~(1) Licensees must maintain certified operators with responsibility for administrative tasks including compliance with technical specifications, operability determinations, implementation of maintenance and configuration controls, compliance with radioactive release limitations, responsibilities under the facility emergency plan (as applicable), and making notifications to local, state, and federal authorities as required by this part (e.g., those covered under § 53.1630 Immediate Notification Requirements for Operating Commercial Nuclear Plants) in addition to those items identified by facility-specific job task analyses conducted under § 53.815(a).~~

~~(2) The licensee must maintain a sufficient complement of certified operators to provide for the continuity of responsibility for facility operations at all times during the operating phase.~~

~~(3) The licensee must provide for a certified operator to continually monitor the operations of fueled units. At a minimum, this certified operator must have following capabilities:~~

~~(i) The ability to receive plant operating data, including reactor parameters and information needed for the evaluation of emergency conditions.~~

~~(ii) The ability to immediately initiate a reactor shutdown from his or her location.~~

~~(iii) The ability to promptly dispatch operations and maintenance personnel.~~

~~(iv) The ability to immediately implement responsibilities under the facility emergency plan, as applicable.~~

~~(4) Where reactivity manipulations require operator action, except as provided by § 53.735, an individual who plant is a certified operator under the provisions of this part must conduct those reactivity manipulations. operating.~~

~~(5) The facility technical specifications must provide the necessary administrative controls to ensure the implementation of the certified operator program. These administrative controls must, at a minimum, specify the responsibilities, organization, staffing, qualifications, and training associated with the certified operator~~

<p>program. (j) A holder of an operating license or combined license under this part</p>	
<p><u>(h) Facility licensees</u> may take reasonable action that departs from a license condition or a technical specification (contained in a license issued under this part) in an emergency situation when this action is immediately needed to protect the public health and safety and no action consistent with license conditions and technical specifications that can provide adequate or equivalent protection is immediately apparent. <u>Such facility licensee action shall be approved, as a minimum, by a senior operator or a generally licensed operator, as applicable, or, after certifying the permanent cessation of operations and permanent removal of fuel from the reactor vessel as described under § 53.1070, by a certified fuel handler, senior operator, or generally licensed operator, as applicable, prior to taking the action.</u></p>	
<p><u>§ 53.750 Violations.</u></p> <p><u>(a) The Commission may obtain an injunction or other court order to prevent a violation of the provisions of --</u></p> <p><u>(1) The Atomic Energy Act of 1954, as amended;</u> <u>(2) Title II of the Energy Reorganization Act of 1974, as amended; or</u> <u>(3) A regulation or order issued pursuant to those Acts.</u></p> <p><u>(b) The Commission may obtain a court order for the payment of a civil penalty imposed under section 234 of the Atomic Energy Act:</u></p> <p><u>(1) For violations of --</u></p> <p><u>(i) Sections 53, 57, 62, 63, 81, 82, 101, 103, 104, 107, or 109 of the Atomic Energy Act of 1954, as amended;</u> <u>(ii) Section 206 of the Energy Reorganization Act;</u> <u>(iii) Any rule, regulation, or order issued pursuant to the sections specified in paragraph (b)(1)(i) of this section;</u> <u>(iv) Any term, condition, or limitation of any license issued under the sections specified in paragraph (b)(1)(i) of this section.</u></p> <p><u>(2) For any violation for which a license may be revoked under</u></p>	

<p><u>section 186 of the Atomic Energy Act of 1954, as amended.</u></p>	
<p><u>§ 53.755 Criminal penalties</u></p> <p><u>(a) Section 223 of the Atomic Energy Act of 1954, as amended, provides for criminal sanctions for willful violation of, attempted violation of, or conspiracy to violate, any regulation issued under sections 161b, 161i, or 161o of the Act. For purposes of section 223, all the regulations in §§ 53.725 through 53.840 are issued under one or more of sections 161b, 161i, or 161o, except for the sections listed in paragraph (b) of this section.</u></p> <p><u>(b) The regulations in §§ 53.725 through 53.840 that are not issued under sections 161b, 161i, or 161o for the purposes of section 223 are as follows: §§ 53.725(b), 53.726, 53.727, 53.735, 53.750, 53.755, 53.760, 53.780, 53.785(f), 53.792, 53.795, 53.800, 53.810(e), 53.815(f) and 53.830.</u></p>	
<p>§ 53.760 Operator licensing.</p> <p>(a) <i>Applicability.</i> Sections 53.760 through 53.795 address operator licensing requirements. The regulations within this section are applicable to all applicants for, or holders of, operating licenses or combined licenses for commercial nuclear plants licensed under this part except for those who meet the criteria provided under § 53.740(b) and chooses <u>subject to follow</u> §§ 53.800 through 53.830 and <u>those that have not yet</u> certified the <u>permanent cessation of operations and</u> permanent removal of fuel from the reactor vessel as described under § 53.1070.</p> <p>(b) Reserved.</p>	<p>Under this revised framework of subpart F, operator licenses now consist of both general licenses and specific licenses. <u>A specific license is issued to a named person and is effective upon approval by the Commission of an application filed pursuant to the regulations in this part and issuance of licensing documents to the applicant.</u> Specific licenses are issued to licensed operators (ROs) and senior licensed operators (SROs) under the requirements of §§ 53.760 through 53.795. In contrast, a general license is effective without the filing of an application with the Commission or the issuance of licensing documents to a particular person. The general licensing of GLROs is addressed by the requirements of §§ 53.800 through 53.830.</p>

<p>§ 53.765 <u>License-Operator license</u> requirements.</p> <p>A person must be authorized by the holder or applicant for an operating license or the holder of a combined <u>license under this part issued by the Commission</u> to perform the function of a licensed <u>an operator or a senior licensed</u> operator as defined in this part.</p>	<p>Adapted from § 55.3.</p>
<p>§ 53.745<u>766</u> Medical requirements.</p> <p>(a)(1) An applicant for a licensed <u>an operator or senior licensed</u> operator license must have a medical examination by a physician. A licensed <u>An operator or senior licensed</u> operator must have a medical examination by a physician every two years. Operators certified under the provisions of §§ 53.800 through 53.830 must have a medical examination by a physician prior to certification and every two years thereafter.</p> <p>(4) (2) The physician must determine that <u>evaluate whether the medical condition and general health of</u> the applicant for a license, licensed <u>an operator or senior operator, senior licensed license or the operator, certified or senior operator trainee, or certified operator's</u> medical condition and general health will not adversely affect the performance of assigned operator job <u>licensed</u> duties or cause operational errors endangering public health and safety.</p> <p>(b) To certify the medical fitness of the <u>an</u> applicant for an operator or senior operator <u>license</u>, an authorized representative of the holder of an operating license or combined license under this part must complete and sign NRC Form 396, "Certification of Medical Examination by Facility Licensee," which can be obtained by writing the Office of the Chief Information Officer, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, by calling (301) 415-5877, or by visiting the NRC's Web site <u>website</u> at http <u>https</u>://www.nrc.gov and selecting forms from the index found on the home page.</p> <p>(1) Form NRC-396 must certify that a physician has conducted the medical examination of the applicant as required in paragraph (a).</p> <p>(2) When the medical certification requests a conditional</p>	<p>The medical requirements have been provided in the section for specifically licensed ROs and SROs in this iteration due to these being the only category of operators to whom these medical requirements now apply within Framework A. It should be noted that, in contrast with the requirements for SROs and ROs, there are no specific medical requirements in the GLRO framework described in §§ 53.800 through 53.830.</p>

<p>license based on medical evidence, the medical evidence must be submitted on NRC Form 396 to the Commission and the Commission then makes a determination in accordance with § 53.780(b).</p> <p>(c) The holder of an operating license or combined license under this part must <u>facility licensee must</u> document and maintain the results of medical qualifications data, test results, and each licensed operator, operator's or senior licensed operator, or certified operator's <u>licensed operator</u> medical history for either the current license period or while certified, respectively, and provide the documentation to the Commission upon request. The <u>facility licensee</u> must retain this documentation while an individual performs the functions of a licensed an operator, or senior licensed operator, or certified operator. <u>a licensed an operator</u>.</p> <p>[§§ 53.750 to 53.755 to be added to address Violations and Criminal Penalties.]</p>	
<p>§ 53.770 Completeness and accuracy of information</p> <p>Information provided to the Commission by an applicant for an operator <u>or senior operator</u> license or by a licensed operator or information required by statute or by the Commission's regulations, orders, or license conditions to be maintained by the applicant or the licensed operator <u>licensee</u> must be complete and accurate in all material respects.</p>	Adapted from § 55.9
<p>§ 53.775 Incapacitation because of disability or illness</p> <p>If, during the term of the license, the licensed operator <u>licensee</u> develops a permanent physical or mental condition that causes the licensed operator <u>licensee</u> to fail to meet the requirements of § 53.745 <u>766(a) of this part,</u> the commercial nuclear plant <u>facility licensee</u> must notify the Commission, within 30 days of learning of the diagnosis. For conditions for which a conditional license (as described in § 53.780(b) of this part)) is requested, the commercial nuclear plant <u>facility licensee</u> must provide medical certification on Form NRC 396 to the Commission (as described in § 53.745(b) of this</p>	Adapted from §§ 55.25 & 50.74(c).

<p>part)-766(b)).</p>	
<p>§ 53.780 Applications for licensed operators</p> <p>(a) <i>How to apply.</i> (1) The applicant must:</p> <p>(i) Complete NRC Form 398, "Personal Qualification Statement-- Licensee," which can be obtained by writing the Office of the Chief Information Officer, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, by calling (301) 415-5877, or by visiting the NRC's Web sitewebsite at httphttps://www.nrc.gov and selecting forms from the index found on the home page;</p>	<p>Adapted from §§ 55.31 through 55.35.</p>
<p>(ii) File an original of NRC Form 398, or an equivalent electronic submittal, together with the information required in paragraphs (a)(1)(iii), (iv), (v), and (vi) of this section, with the appropriate Regional Administrator.</p>	
<p>(iii) Provide evidence that the applicant, as a trainee, has successfully demonstrated competence in manipulating the controls of either the facility for which a license is sought or a simulation facility that meets the requirements of § 53.785(e). For licensed operators applying for a senior licensed operator license, certification that the licensed operator has successfully operated the controls of the facility as a licensedan operator shall be accepted; and</p>	
<p>(iv) Provide certification by the facility licensee of medical condition and general health on Form NRC –396, to comply with § 53.745766.</p> <p>(2) The Commission may at any time after the application has been filed, and before the license has expired, require further information under oath or affirmation in order to enable it to determine whether to grant or deny the application or whether to revoke, modify, or suspend the license.</p> <p>(3) An applicant whose application has been denied because</p>	

<p>of a medical condition or general health may submit a further medical report at any time as a supplement to the application.</p> <p>(4) Each application and statement must contain complete and accurate disclosure as to all matters required to be disclosed. The applicant must sign statements required by paragraphs (1)(i) and (ii) of this section.</p>	
<p>(b) <i>Disposition of an initial application.</i> (1) Requirements for the approval of an initial application. The Commission will approve an initial application for a license pursuant to the regulations in this part, if it finds that the following criteria are met:</p> <p>(i) <i>Health.</i> The applicant's medical condition and general health will not adversely affect the performance of assigned licensed operator or senior licensed operator job duties or cause operational errors endangering public health and safety. The Commission will base its finding upon the certification by the facility licensee as detailed in § 53.745766(b).</p> <p>(ii) <i>Examination.</i> The applicant has passed the requisite examination in accordance with § 53.785(b). These examinations determine<u>The examination determines</u> whether the applicant for a licensed operator<u>an operator's</u> or senior licensed operator's license has learned to operate a facility competently and safely, and additionally, in the case of a senior licensed operator, whether the applicant has learned to supervise the licensed activities of licensed operators competently and safely.</p> <p>(2) <i>Conditional license.</i> If an applicant's general medical condition does not meet the minimum standards under § 53.745(a)-of this part, 766(a), the Commission may approve the application and include conditions in the license to accommodate the medical condition. The Commission will consider the recommendations and supporting evidence of the facility licensee and of the examining physician (provided on Form NRC-396) in arriving at its decision.</p>	<p>Adapted from § 55.33.</p>
<p>(c) <i>Re-applications.</i></p> <p>(1) An applicant whose application for a license has been</p>	<p>Adapted from § 55.35.</p>

<p>denied because of failure to pass the examination may file a new application. The application must be submitted on Form NRC-398 and include a statement signed by an authorized representative of the facility licensee by whom the applicant will be employed that states in detail the extent of the applicant's additional training and remediation since the denial and certifies that the applicant is ready for re-examination.</p> <p>(2) An applicant who has passed a portion of the examination and failed another may request in a new application on Form NRC-398 to be excused from re-examination on the portions of the examination which the applicant has passed. The Commission may in its discretion grant the request, if it determines that sufficient justification is presented.</p>	
<p>§ 53.785 Training program</p> <p>(a) Initial<u>Operator licensing initial</u> training program. (1) A program that is based upon a systems approach to training, as defined by § 53.725(b), must be utilized for the training of applicants for licensed operator and senior licensed operator licenses. This training<u>The</u> program must ensure that license applicants at the facility will possess the knowledge, skills, and abilities necessary to protect the public health and maintain those plant safety functions specific to the facility design. This<u>The</u> program must be approved by the Commission prior to its use for training license applicants, as described under § 53.730(g). The approved initial operator licensing initial training program shall be subject to the requirements of Subpart I, "Maintaining and Revising Licensing Basis Information During Operations," of this part <u>§ 53.1565</u>.</p> <p>(2) Records. The <u>operator licensing</u> initial training program documentation must include the following:</p> <p>(i) The facility licensee must maintain records documenting the participation of each licensed operator and senior licensed operator trainee in the initial <u>operator licensing</u> training program. The records must contain documentation of the training administered. The facility</p>	

<p>licensee must retain these records during the period in which any trainees subsequently remain licensed as licensed operators or senior licensed operators at the facility.</p> <p>(ii) Each record required by this part must be legible throughout the retention period specified by each Commission regulation. The record may be the original, a reproduced copy, or an electronic copy provided that the copy is authenticated by authorized personnel.</p>	
<p>(b) Licensing<u>Operator licensing initial</u> examination <u>program</u>. (1) The facility licensee must establish and implement an examination program for testing a representative sample of the knowledge, skills, and abilities needed to safely perform licensed operator and senior licensed operator duties, to include both the examination methods and criteria to be used to assess passing performance. This<u>The</u> program must be approved by the Commission prior to its use for examining license applicants, as described under § 53.730(g). The approved initial operator licensing <u>initial</u> examination program shall be subject to the requirements of Subpart I, "Maintaining and Revising Licensing Basis Information During Operations," of this part. (2) The facility licensee must make prepared examinations available to the Commission for review and approval in advance of their administration. § 53.1565.</p> <p><u>(2) The facility licensee must submit prepared examinations to the Commission for review and approval in advance of their administration.</u></p> <p>(3) The Commission will reserve<u>reserves</u> the ability to either administer the<u>an approved</u> examination or to allow the facility licensee to administer the examination. In any event, the facility licensee must ensure that sufficient advance notification is provided to the Commission to allow for a representative of the Commission to be afforded the opportunity to be present during examination administration.</p> <p>(4) Completed<u>Graded</u> examination documentation for each applicant must be promptly forwarded to the Commission for review in making operator licensing decisions.</p>	<p>Adapted from §§ 55.40, 41, 43, & 45.</p>

<p>(5) <i>Records</i>. The initial operator licensing <u>initial examination</u> program documentation must include the following:</p> <p>(i) The facility licensee must maintain records documenting the participation of each licensed operator and senior licensed operator applicant in the initial licensing examination. The records must contain copies of examinations administered, the answers given by the applicant, and the results of evaluations and documentation of <u>the grading of</u> examinations, <u>and documentation</u> of any additional training administered in areas in which a licensed operator or senior licensed operator has an applicant exhibited deficiencies. The facility licensee must retain these records during the period in which the associated licensed operators or senior licensed operators remain licensed at the facility.</p> <p>(ii) <u>Each record required by this part must be legible throughout the retention period specified by each Commission regulation. The record may be the original, a reproduced copy, or an electronic copy provided that the copy is authenticated by authorized personnel.</u></p>	
<p>(c) <i>Requalification Operator licensing requalification program</i>.</p> <p>(1) A program based upon a systems approach to training, as defined by § 53.725(b), must be utilized for the continuing training of licensed operators and senior licensed operators.</p> <p>(i) This continuing training <u>The</u> program must ensure that licensed operators and senior licensed operators at the facility will maintain the knowledge, skills, and abilities necessary to protect the public health and maintain those plant safety functions specific to the facility design. The program must be conducted for a continuous period not to exceed 24 months in duration.</p> <p>(ii) This <u>The</u> program must be approved by the Commission prior to its use for continuing training, as described under § 53.730(g). The approved <u>operator licensing</u> requalification program for licensed operators and senior licensed operators shall be subject to the requirements of <u>Subpart I, "Maintaining and Revising Licensing Basis Information During Operations," of this part § 53.1565.</u></p> <p>(2) The following requirements apply to licensed operators and</p>	<p>Adapted from § 55.59.</p>

~~senior licensed-operator~~ licensing requalification ~~training~~ programs:

(i) The facility licensee must propose a ~~biennial~~ requalification examination program for testing. for each requalification period, a sample of the topics included under the systems approach to training, to include both the examination methods and criteria to be used to assess passing performance. ~~This~~The program must be approved by the Commission prior to its use for examining ~~licensed~~ operators and senior ~~licensed~~ operators, as described under § 53.730(g). The approved requalification examination program ~~for licensed operators and senior licensed operators~~ shall be subject to the requirements of Subpart I, "Maintaining and Revising Licensing Basis Information During Operations," of this part. § 53.1565.

(ii) The following requirements apply to ~~biennial~~the requalification examination ~~programs~~program:

(A) The facility licensee must make prepared ~~biennial~~ requalification examinations available to the Commission for review.

(B) The facility licensee must ensure that a representative of the Commission is afforded the opportunity to be present during ~~biennial~~ requalification examination administration.

(C) The facility licensee must ensure that each ~~licensed~~ operator and senior ~~licensed~~ operator is administered a complete ~~biennial~~ requalification examination on a periodicity not to exceed 24 months.

(D) The facility licensee must promptly forward a summary of examination results for each ~~licensed~~ operator and senior ~~licensed~~ operator following the completion of the ~~biennial~~ requalification examination.

(3) Records. The operator licensing requalification program documentation must include the following:

(i) The facility licensee must maintain records documenting the participation of each ~~licensed~~ operator and senior ~~licensed~~ operator in the requalification program. The records must contain copies of examinations administered, the answers given by the ~~licensed~~ operator or senior ~~licensed~~ operator, ~~and the results of evaluations and~~ documentation of the grading of examinations, and documentation

<p>of any additional training administered in areas in which a licensed<u>an</u> operator or senior licensed operator has exhibited deficiencies. The facility licensee must retain these records until the licensed operator's or senior licensed operator's license is renewed.</p> <p>(ii) Each record required by this part must be legible throughout the retention period specified by each Commission regulation. The record may be the original, a reproduced copy, or an electronic copy provided that the copy is authenticated by authorized personnel.</p>	
<p>(d) <i>Examination integrity.</i> Applicants, licensed operators, and senior licensed operators, and facility licensees must not engage in any activity that compromises the integrity of any application, test, or examination required by §§ 53.760 through 53.795. The integrity of a test or an examination is considered compromised if any activity, regardless of intent, affected, or, but for detection, could have affected the equitable and consistent administration of the test or examination. This includes activities related to the preparation and certification of license applications and all activities related to the preparation, administration, and grading of the tests and examinations required by §§ 53.760 through 53.795.</p>	<p>Adapted from § 55.49.</p>
<p>(e) <i>Simulation facilities.</i> (1) This section addresses the use of a simulation facility for the administration of examinations, for training, or to meet experience requirements for applicants for licensed operator and senior licensed operator licenses, and for conducting human factors engineering analysis or assessments.</p> <p>(2) Simulation facilities used for training purposes, meeting experience requirements, or for the conduct of examinations under § 53.785(b) must meet the following criteria as they relate to the facility licensee's reference plant:</p> <p>(i) The simulator must be of sufficient scope and fidelity for individuals to acquire and demonstrate the necessary knowledge, skills, and abilities to safely perform licensed operator and senior licensed operator duties.</p> <p>(ii) The simulator must utilize models relating to nuclear and,</p>	<p>Adapted from § 55.46.</p> <p>An earlier requirement addressing the use of the simulator as a human factors engineering testbed has been removed in this iteration.</p>

thermal-hydraulic, and other applicable design-specific characteristics that either replicate the most recent ~~corefuel~~ load in the reference commercial nuclear ~~reactor licensed under Part 53 reference~~ plant or, prior to initial fuel load, replicate the intended initial ~~corefuel~~ load for the reference commercial nuclear ~~reactor licensed under Part 53 reference~~ plant.

(iii) Simulator fidelity has been demonstrated so that significant control manipulations are completed without procedural exceptions, simulator performance exceptions, or deviation from the approved training scenario sequence.

(3) Facility licensees that propose to use a simulation facility for training purposes, meeting experience requirements, or for the conduct of examinations under § 53.785(b) and (c) must request and receive approval from the Commission prior to use of the simulation facility for any of these purposes. This request must include:

(i) A description of the components of the simulation facility intended to be used as they relate to paragraph (2), ~~unless previously approved; and~~;

(ii) A description of the performance tests for the simulation facility ~~as part of the request~~ as they relate to paragraph (2), and the results of these tests; and

(iii) A description of the procedures for maintaining examination ~~and test~~ integrity consistent with the requirements of § 53.785(d).

~~(4) Facility licensees that propose to use a simulation facility for conducting human factors engineering analysis or assessments must provide a simulator that is capable of supporting all testing needed to demonstrate that aspects of the safety case such as operator licensing, human factors engineering, and other operational areas will be conducted as described in the safety analysis report.~~

~~(5)~~(4) The Commission will approve a simulation facility if it finds that the simulation facility is suitable for training purposes, meeting experience requirements, or the conduct of examinations under § 53.785(b) and (c) for the facility licensee's reference plant.

~~(6)~~(5) *Continued assurance of simulator fidelity.* Facility licensees that maintain a simulation facility that has been approved by

<p><u>the Commission</u> for training purposes, meeting experience requirements, or for the conduct of examinations under § 53.785(b) and (c) must; for the facility licensee's reference plant must:</p> <p>(i) Conduct performance testing throughout the life of the simulation facility in a manner sufficient to ensure that paragraph (2) of this section is met;</p> <p>(ii) The<u>Retain the</u> results of performance tests must be retained<u>testing</u> for four years after the completion of each performance test or until superseded by updated test results;</p> <p>(iii) Promptly correct modeling and hardware discrepancies and discrepancies identified from scenario validation and from performance testing or provide justification as to why the presence of such discrepancies will not adversely affect the criteria of paragraph (2) of this section;</p> <p>(iv) Make <u>the</u> results of any uncorrected performance test failures that may exist at the time of the operating test examination or requalification program inspection available for NRC review, prior to or concurrent with preparations for each examination or requalification program inspection; and</p> <p>(v) Maintain the provisions for license application, and <u>and test</u> integrity consistent with § 53.785(d).</p> <p>(76) A simulation facility must meet the requirements of paragraphs (2) and (65) of this section for the Commission to accept the simulation facility for conducting <u>initial</u> examinations as described in § 53.785(b) of this part, requalification training as described in § 53.785(c) of this part, or for performing control manipulations that affect reactivity to establish eligibility for a licensed operator's an <u>operator</u> or senior licensed operator license as described in § 53.780(a).</p>	
<p>(f) Waiver of examination and test requirements requirement. On application, the Commission may waive any or all of the requirements <u>for</u> an examination if it finds that the applicant has demonstrated the required knowledge, skills, and abilities to safely operate the plant, and is capable of continuing to do so. This</p>	Adapted from § 55.47.

<p><u>requirement includes</u><u>The Commission may make such a finding based on</u> demonstration of the following:</p> <ul style="list-style-type: none"> (1) operating experience at a comparable facility, (2) proof of the applicant's past performance, and (3) proof of the applicant's current qualifications. 	
<p>(g) <i>Proficiency</i>. The facility <u>licensee</u> must establish and implement a <u>Commission-approved proficiency</u> program to ensure that <u>licensed</u> operators and senior <u>licensed</u> operators will actively perform the functions of <u>a licensed</u> operator or senior <u>licensed</u> operator, respectively, as needed to maintain proficiency regarding shift functions and familiarity with plant status. This program must include those steps that will be taken in order to re-establish proficiency when it cannot be maintained. <u>This program must be approved by the NRC as part of its approval of the operating license or combined license for the plant.</u></p>	
<p>§ 53.790 Conditions of <u>licensed</u> operator and senior <u>licensed</u> operator licenses.</p> <p>(a) Each <u>operator and senior operator</u> license contains and is subject to the following conditions whether stated in the license or not:</p> <ul style="list-style-type: none"> (1a) Neither the license nor any right under the license may be assigned or otherwise transferred. (2b) The license is limited to the facility for which it is issued. (3c) The license is limited to those controls of the facility specified in the license. (4d) The license is subject to, and the <u>licensed operator or senior licensed operator</u><u>licensee</u> must observe, all applicable rules, regulations, and orders of the Commission. (5e) The <u>licensed operator or senior licensed operator</u><u>licensee</u> must maintain <u>or re-establish</u> proficiency in accordance with the facility <u>licensee's Commission-approved</u> proficiency program. (6f) The <u>licensed operator or senior licensed operator</u><u>licensee</u> must <u>complete</u> <u>be subject to the facility's Commission-approved operator licensing</u> requalification <u>program as described by § 53.785(c).</u> 	<p>Adapted from § 55.53.</p>

~~The licensed operator or senior licensed operator must pass a complete biennial and~~ requalification examination as described by programs required under § 53.785(c).

~~(7g) The licensed operator or senior licensed operator~~ licensee must have a biennial medical examination as described by § 53.766.

~~(8h) The licensed operator or senior licensed operator~~ licensee must notify the Commission within 30 days about a conviction for a felony.

~~(9i) The licensed operator or senior licensed operator~~ licensee must not consume or ingest alcoholic beverages within the protected area of ~~power reactors. The licensed operator or senior licensed operator~~ commercial nuclear plants. The licensee must not use, possess, or sell any illegal drugs. ~~The licensed operator or senior licensed operator~~ The licensee must not perform activities authorized by a license issued under this part while under the influence of alcohol or any prescription, over-the-counter, or illegal substance that could adversely affect his or her ability to safely and competently perform his or her licensed duties. For the purpose of this paragraph, with respect to alcoholic beverages and drugs, the term "under the influence" means the licensee exceeded, as evidenced by a confirmed test result, the lower of the cutoff levels for drugs or alcohol contained in Part 26 of this chapter, or as established by the facility licensee. The term "under the influence" also means the licensee could be mentally or physically impaired as a result of substance use including prescription and over-the-counter drugs, as determined under the provisions, policies, and procedures established by the facility licensee for its fitness-for-duty program, in such a manner as to adversely affect his or her ability to safely and competently perform licensed duties.

~~(10j) Each licensed operator or senior licensed operator at power reactors~~ licensee must participate in the drug and alcohol testing programs as required under 10 CFR ~~Part~~ part 26.

~~(11) The licensed operator or senior licensed operator~~ (k) The licensee must comply with any other conditions that the Commission may impose to protect health or to minimize danger to life or property.

§ 53.792 Expiration and renewal of operator and senior operator licenses.

(ab) Expiration. (1) Each ~~licensed operator~~ license and senior ~~licensed~~ operator license expires six years after the date of issuance, upon termination of employment with the facility licensee, or upon determination by the facility licensee that the licensed individual no longer needs to maintain a license.

(2) If a ~~licensed operator or senior licensed operator~~ licensee files an application for renewal or an upgrade of an existing license on Form NRC-398 at least 30 days before the expiration of the existing license, it does not expire until disposition of the application for renewal or for an upgraded license has been finally determined by the Commission. Filing by mail will be deemed to be complete at the time the application is deposited in the mail.

(eb) Renewal. (1) The applicant for renewal of ~~an operator license or senior operator~~ license must:

(i) Complete and sign Form NRC-398 and include the number of the license for which renewal is sought.

(ii) File an original of NRC Form 398 ~~with the appropriate Regional Administrator~~s specified in § 53.726**(b)**.

(iii) Provide written evidence of the applicant's experience under the existing license and the approximate number of hours that the ~~licensed operator or senior licensed operator~~ licensee has operated the facility.

(iv) Provide a statement by an authorized representative of the facility licensee that during the effective term of the current license the applicant has satisfactorily completed the requalification program for the facility for which ~~licensed operator or senior licensed~~ operator license renewal is sought.

(v) Provide evidence that the applicant has discharged the license responsibilities competently and safely. The Commission may accept as evidence of the applicant's having met this requirement a certificate of an authorized representative of the facility licensee or holder of an authorization by which the ~~licensed operator or senior~~

Adapted from § 55.55 and 55.57

<p>licensed operator<u>licensee</u> has been employed.</p> <p>(vi) Provide certification by the facility licensee of medical condition and general health on Form NRC-396, to comply with § 53.745766.</p> <p>(2) The license will be renewed if the Commission finds that:</p> <p>(i) The medical condition and the general health of the licensed operator or senior licensed operator<u>licensee</u> continue to be such as not to cause operational errors that endanger public health and safety. The Commission will base this finding upon the certification by the facility licensee as described in § 53.745766(b).</p> <p>(ii) The licensed operator or senior licensed operator<u>licensee</u> –</p> <p>(A) Is capable of continuing to competently and safely assume licensed duties;</p> <p>(B) Has successfully completed a requalification program that has been approved by the Commission as required by § 53.785(c); and</p> <p>(C) Has passed the requalification examinations as required by § 53.785(c).</p> <p>(iii) There is a continued need for a licensed<u>an</u> operator to operate or for a senior licensed operator to supervise licensed operators at the facility designated in the application.</p> <p>(iv) The past performance of the licensed operator or senior licensed operator<u>licensee</u> has been satisfactory to the Commission. In making its finding, the Commission will include in its evaluation information such as notices of violations or letters of reprimand in the licensed operator's or senior licensed operator's<u>licensee's</u> docket.</p>	
<p>§ 53.795 Issuance, modification, and revocation <u>of operator and senior operator</u> licenses.</p> <p>(a) <i>Issuance of licensed operator and senior operator licenses.</i> If the Commission determines that an applicant for licensed<u>an</u> operator license or a senior licensed operator license meets the requirements of the Act and its regulations, it will issue a license in the form and containing any conditions and limitations it considers</p>	<p>Adapted from §§ 55.51 and 55.61.</p>

<p>appropriate and necessary.</p> <p>(b) <i>Modification and revocation of <u>operator and senior operator licenses</u></i>. (1) The terms and conditions of all licenses are subject to amendment, revision, or modification by reason of rules, regulations, or orders issued in accordance with the Act or any amendments thereto.</p> <p>(2) Any license may be revoked, suspended, or modified, in whole or in part:</p> <p>(i) For any material false statement in the application or in any statement of fact required under section 182 of the Act,</p> <p>(ii) Because of conditions revealed by the application or statement of fact or any report, record, inspection, or other means that would warrant the Commission to refuse to grant a license on an original application,</p> <p>(iii) For willful violation of, or failure to observe any of the terms and conditions of the Act, or the license, or of any rule, regulation, or order of the Commission, or</p> <p>(iv) For any conduct determined by the Commission to be a hazard to safe operation of the facility.</p> <p>(v) For the sale, use, or possession of illegal drugs, or refusal to participate in the facility drug and alcohol testing program, or a confirmed positive test for drugs, drug metabolites, or alcohol in violation of the conditions and cutoff levels established by § 53.790(a)(10) or the consumption of alcoholic beverages within the protected area of power reactors <u>commercial nuclear plants</u>, or a determination of unfitness for scheduled work as a result of the consumption of alcoholic beverages.</p>	
<p><u>§ 53.800 Facility licensees that comply with §§ 53.800 through 53.830.</u></p> <p><u>(a) A commercial nuclear plant is of a class, based upon the similarity of operating and technical characteristics of the plants in the class, that its licensee must comply with the requirements of §§ 53.800 through 53.830 in lieu of those in §§ 53.760 through 53.795 if the NRC</u></p>	<p>The new §§ 53.800 through 53.830 sections address GLROs. These operators are licensed by the Commission under a general license that is provided in 53.810. A general license is effective without the filing of an application with the Commission or the issuance of licensing documents to a particular person. Section 53.800 defines a new class of reactors which require</p>

<p><u>determined as part of its approval of the operating license or combined license for that plant that the following criteria are satisfied:</u></p> <p><u>(1) The safety criteria of §§ 53.210 and 53.220 and, if applicable, any alternative criteria used in accordance with § 53.470 will be met without reliance on human actions for event mitigation;</u></p> <p><u>(2) The safety functions of § 53.230 can be achieved without reliance on human actions for event mitigation;</u></p> <p><u>(3) The requirements associated with defense in depth, as described under § 53.250, can be met without reliance on human actions for event mitigation;</u></p> <p><u>(4) The analysis of licensing basis events in accordance with § 53.450(e) demonstrates that the evaluation criteria for each event sequence can be met and the analysis of design basis accidents in accordance with § 53.450(f) demonstrates that the evaluation criteria can be met, respectively, without reliance on human actions for event mitigation; and</u></p> <p><u>(5) The plant response to licensing basis events does not rely on human actions to assure the performance of SSCs. Compliance with this paragraph may be achieved through the use of SSCs that function through inherent characteristics or have engineered protections against human failures.</u></p> <p><u>§ 53.800 Operator certification.</u> Sections 53.800 through 53.830 address certified operator requirements. The regulations within this section are provided as an alternative to those of §§ 53.760 through 53.795 for applicants for, or holders of, operating licenses or combined licenses for commercial nuclear plants licensed under this part who meet the criteria provided under § 53.740(b) and have not yet certified the permanent removal of fuel from the reactor vessel as described under § 53.1070.</p>	<p>GLROs in lieu of specifically licensed ROs and SROs. It is important to note that an option is not provided within this framework regarding which type of licensed operator may be used; plants meeting the criteria of § 53.800 must be staffed with GLROs.</p>
<p><u>§ 53.805 Facility licensee requirements related to generally licensed operators.</u></p> <p><u>(a) Licensees for commercial nuclear plants that meet all of the criteria in § 53.800(a) and that have not yet certified the permanent</u></p>	<p>This section covers facility license requirements at plants that have GLROs. It is important to note that the qualifications described in this section must be established and maintained as a precondition of the general license provided in the following section.</p>

cessation of operations and permanent removal of fuel from the reactor vessel as described under § 53.1070 must meet the following requirements:

(1) Maintain the qualifications of generally licensed operators with responsibility for administrative tasks including compliance with technical specifications, operability determinations, implementation of maintenance and configuration controls, compliance with radioactive release limitations, responsibilities under the facility emergency plan (as applicable), and making notifications to local, state, and federal authorities as required by this part, including those covered under § 53.1630, Immediate Notification Requirements for Operating Commercial Nuclear Plants, in addition to those items identified by the facility-specific systems approach to training conducted under § 53.815.

(2) Ensure that generally licensed operators are qualified to:

(i) understand plant operating data, including reactor parameters, and evaluate emergency conditions.

(ii) initiate a reactor shutdown from necessary locations.

(iii) dispatch and direct operations and maintenance personnel.

(iv) implement any applicable responsibilities under the facility emergency plan.

(3) Develop, implement, and maintain facility technical specifications that provide the necessary administrative controls to ensure the implementation of these requirements.

(4) Develop, implement, and maintain the generally licensed operator training and retraining and proficiency programs required under § 53.815.

(5) Ensure that generally licensed operators are subject to the facility's generally licensed operator training and examination and proficiency programs required under § 53.815. Ensure that generally licensed operators are subject to and comply with the applicable programmatic requirements for plant personnel required under 10 CFR Parts 26 and 73. An individual that is not in compliance with any of these programs is not qualified to be in a position that may involve the manipulation of the controls of the commercial nuclear plant.

An important aspect of the qualifications discussed within this section is that they are associated with the role of GLROs in maintaining the plant within the licensing basis, in compliance with facility license conditions, and within an analyzed state.

<p><u>(6) Report annually to the NRC the identity of all generally licensed operators at the commercial nuclear plant, including all additions and deletions since the previous report.</u></p> <p><u>§ 53.805 Certification requirements.</u></p> <p>A person must be the holder of a certification issued by the facility licensee to perform the function of a certified operator as described in this part. The processes used by the facility licenses to establish, administer, and maintain their certified operator programs must comply with the provisions of this par</p>	
<p><u>§ 53.810 Generally licensed operators.</u></p> <p><u>(a) A general license to manipulate the controls of a commercial nuclear plant that meets all of the criteria in § 53.800(a) and to direct the licensed activities of generally licensed operators is hereby issued to any individual employed in a position that may involve the manipulation of the controls of the commercial nuclear plant whose qualifications are established and maintained by the facility licensee consistent with § 53.805 and who observes the restrictions of this section.</u></p> <p><u>(b) A generally licensed operator must observe the operating procedures and other conditions specified in the license authorizing operation of the facility.</u></p> <p><u>(c) The general license is limited to manipulation of the controls of the facility or facilities at which the operator is employed.</u></p> <p><u>(d) The Commission will suspend the general license for violations of any provision of the Atomic Energy Act of 1954, as amended, or any rule or regulation issued thereunder whenever the Commission deems such action desirable, including</u></p> <p><u>(i) For willful violation of, or failure to observe any of the terms and conditions of the Act, or the general license, or of any rule, regulation, or order of the Commission,</u></p> <p><u>(ii) For any conduct determined by the Commission to be a hazard to safe operation of the facility, or</u></p> <p><u>(iii) For the sale, use or possession of illegal drugs, or refusal</u></p>	<p>This section contains the general license. Individuals licensed under this provision as GLROs are licensed by the Commission and authorized to operate the controls of the facility. It should be noted that a general license does not diminish the ability of the Commission to take individual enforcement action against GLROs or to suspend them from being covered under the general license.</p>

to participate in the facility drug and alcohol testing program, or a confirmed positive test for drugs, drug metabolites, or alcohol in violation of the conditions and cutoff levels established by § 53.825(f) or the consumption of alcoholic beverages within the protected area of power reactors, or a determination of unfitness for scheduled work as a result of the consumption of alcoholic beverages.

(e) The Commission may require information from a generally licensed operator to determine whether a general license should be revoked or suspended with respect to that operator.

(f) The generally licensed operator must not consume or ingest alcoholic beverages within the protected area of power reactors. The generally licensed operator must not use, possess, or sell any illegal drugs. The generally licensed operator must not perform activities requiring a general license while under the influence of alcohol or any prescription, over-the-counter, or illegal substance that could adversely affect his or her ability to safely and competently perform these activities. For the purpose of this paragraph, with respect to alcoholic beverages and drugs, the term "under the influence" means the generally licensed operator exceeded, as evidenced by a confirmed test result, the lower of the cutoff levels for drugs or alcohol contained in Part 26 of this chapter, or as established by the facility licensee. The term "under the influence" also means the generally licensed operator could be mentally or physically impaired as a result of substance use including prescription and over-the-counter drugs, as determined under the provisions, policies, and procedures established by the facility licensee for its fitness-for-duty program, in such a manner as to adversely affect his or her ability to safely and competently perform generally licensed operator duties.

(g) The generally licensed operator must notify the Commission within 30 days about a conviction for a felony.

§ 53.810 Incapacitation because of disability or illness.

If a certified operator develops a permanent physical or mental condition that causes the certified operator to fail to meet the requirements of § 53.745, the facility licensee must immediately

<p>remove that individual from the performance of certified operator duties. For those medical circumstances where a medical restriction can accommodate the medical issue, the facility licensee may permit the individual to continue to perform certified operator duties provided that compliance with the relevant restrictions is established and maintained.</p>	
<p><u>§ 53.815 Generally licensed operator training and examination and proficiency programs.</u></p> <p><u>(a) Applicability. The requirements of this section apply to each licensee of a commercial nuclear plant that meets all of the criteria in § 53.800(a) and that has not yet certified the permanent cessation of operations and permanent removal of fuel from the reactor vessel as described under § 53.1070.</u></p> <p><u>(b) Requirements. (1) The licensee must develop, implement, and maintain training and examination programs that meet the requirements of paragraphs (b)(2) through (b)(3) of this section. These programs must be approved by the Commission prior to their use, as described under § 53.730(g).</u></p> <p><u>(2) The training program must provide for both initial and continuing training for generally licensed operators and be derived from a systems approach to training as defined in this part.</u></p> <p><u>(3) (i) The training program must incorporate the instructional requirements necessary to provide qualified generally licensed operators to operate and maintain the facility in a safe manner in all modes of operation. The training program must comply with the facility license, including all technical specifications and applicable regulations. The license must periodically evaluate and revise the training program as appropriate to reflect industry experience as well as changes to the facility, procedures, regulations, and quality assurance requirements. Licensee management must periodically review the training program for effectiveness. The licensee must maintain sufficient records to document program integrity. The licensee must make the records available for NRC inspection to verify</u></p>	<p>Section 53.815 addresses GLRO initial training program requirements, which also include, in part, requirements associated with examinations, simulation facilities, and proficiency. In general, the various elements of this section are similar to those proposed for “certified operators” under the first iteration of this preliminary proposed rule language.</p>

the adequacy of the program.

(ii) The training program must ensure that generally licensed operators maintain the knowledge, skills, and abilities necessary to protect the public health and safety and is subject to the requirements of § 53.1565.

(iii) The training program must include the generally licensed operator manipulating the controls of either the facility or a simulation facility that meets the requirements of § 53.815(e).

(iv) The training program must include an initial examination program for testing a representative sample of the knowledge, skills, and abilities needed to safely perform generally licensed operator duties, to include both the examination methods and criteria to be used to assess passing performance. The facility licensee must afford a representative of the Commission the opportunity to be present during initial examination administration. This program must be approved by the Commission prior to its use, as described under § 53.730(g). The approved generally licensed operator initial examination program shall be subject to the requirements of § 53.1565.

(v) The training program must include a requalification examination program for testing a sample of the topics included under the systems approach to training, to include the examination methods and criteria to be used to assess passing performance. The requalification examination program must include a periodicity for administering a complete requalification examination to each generally licensed operator and the facility licensee must afford a representative of the Commission the opportunity to be present during requalification examination administration. This program must be approved by the Commission prior to its use, as described under § 53.730(g). The approved generally licensed operator requalification examination program shall be subject to the requirements of § 53.1565.

(c) Records. The generally licensed operator training and retraining program documentation must include the following:

(1) The facility licensee must maintain records documenting the participation of each generally licensed operator in the training

<p><u>program. The records must contain copies of examinations administered, the answers given by the generally licensed operator, and the results of evaluations and documentation of examinations and of any additional training administered in areas in which a generally licensed operator has exhibited deficiencies. The facility licensee must retain these records while the associated generally licensed operators remain at the facility.</u></p> <p><u>(2) Each record required by this part must be legible throughout the retention period. The record may be the original, a reproduced copy, or an electronic copy provided that the copy is authenticated by authorized personnel.</u></p>	
<p><u>(d) Examination integrity. Generally licensed operators and facility licensees must not engage in any activity that compromises the integrity of any test or examination conducted under the generally licensed operator training and retraining program. The integrity of a test or examination is considered compromised if any activity, regardless of intent, affected, or, but for detection, could have affected the equitable and consistent administration of the test or examination. This includes all activities related to the preparation, administration, and grading of the tests and examinations.</u></p>	<p>Adapted from § 55.49.</p>
<p><u>(e) Simulation facilities. licensee, or upon determination by the</u></p> <p><u>(1) Simulation facilities used for training purposes, maintaining proficiency, or for the conduct of tests or examinations must meet the following criteria as they relate to the facility licensee's reference plant:</u></p> <p><u>(i) The simulator must be of sufficient scope and fidelity for individuals to acquire and demonstrate the necessary knowledge, skills, and abilities to safely perform generally licensed operator duties.</u></p> <p><u>(ii) The simulator utilizes models relating to nuclear, thermal-hydraulic, and other applicable design-specific characteristics that either replicate the most recent fuel load in the reference commercial nuclear plant or, prior to initial fuel load, replicate the intended initial fuel load for the reference commercial nuclear plant.</u></p> <p><u>(iii) Simulator fidelity has been demonstrated so that significant</u></p>	<p>Adapted from § 55.46.</p> <p>It should be noted that an earlier requirement regarding the use of the simulator as a human factors engineering testbed has been deleted.</p>

<p><u>control manipulations are completed without procedural exceptions, simulator performance exceptions, or deviation from the approved training scenario sequence.</u></p> <p><u>(2) Continued assurance of simulator fidelity. Facility licensees that maintain a simulation facility for training purposes, maintaining proficiency, or for the conduct of tests or examinations must:</u></p> <p><u>(i) Conduct performance testing throughout the life of the simulation facility in a manner sufficient to ensure that paragraph (1) of this section is met. The results of performance tests must be retained for four years after the completion of each performance test or until superseded by updated test results; and</u></p> <p><u>(ii) Promptly correct modeling and hardware discrepancies and discrepancies identified from scenario validation and from performance testing or provide justification for why the presence of such discrepancies will not adversely affect the criteria of paragraph (1) of this section.</u></p> <p><u>(iii) Make results of any uncorrected performance test failures that may exist at the time of an inspection available for NRC review; and</u></p> <p><u>(iv) Maintain the provisions for examination and test integrity consistent with § 53.815(d).</u></p>	
<p><u>(f) <i>Waiver of examination requirement.</i> The facility licensee may waive any or all of the requirements for a test or examination in accordance with the facility licensee's Commission-approved generally licensed operator training and retraining program.</u></p>	
<p><u>(g) <i>Proficiency.</i> The facility licensee must develop, implement, and maintain a proficiency program to ensure that generally licensed operators will maintain proficiency regarding position functions and familiarity with plant status. This program must include those steps that will be taken in order to re-establish proficiency when it cannot be maintained.</u></p>	

§ 53.815 Training program.

~~(a) *Initial training program.* (1) A program that is based upon a systems approach to training, as defined by § 53.725(b), must be utilized for the training of certified operator trainees. This training program must ensure that certified operator trainees at the facility will possess the knowledge, skills, and abilities necessary to protect the public health. This program must be approved by the Commission prior to its use for certified operator trainees, as described under § 53.730(g). The approved initial certified operator training program shall be subject to the requirements of Subpart I, "Maintaining and Revising Licensing Basis Information During Operations," of this part.~~

~~(2) *Records.* The initial training program documentation must include the following:~~

~~(i) The facility licensee must maintain records documenting the participation of each certified operator trainee in the initial training program. The records must contain documentation of the training administered. The facility licensee must retain these records during the period in which the any trainees subsequently remain certified as certified operators at the facility.~~

~~(ii) Each record required by this part must be legible throughout the retention period specified by each Commission regulation. The record may be the original, a reproduced copy, or an electronic copy provided that the copy is authenticated by authorized personnel.~~

~~(b) *Certification examination.* The facility licensee must establish and implement an examination program for testing a representative sample of the knowledge, skills, and abilities needed to safely perform certified operator duties, to include both the examination methods and criteria to be used to assess passing performance. This program must be approved by the Commission prior to its use for examining certified operator trainees, as described under § 53.730(g). The approved initial certified operator examination program shall be subject to the requirements of Subpart I, "Maintaining and Revising Licensing Basis Information During Operations," of this part.~~

~~(1) The facility licensee must afford the Commission the opportunity to review prepared examinations.~~

~~(2) The facility licensee must ensure that a representative of the Commission is afforded the opportunity to be present during examination administration.~~

~~(3) Completed examination documentation for each certified operator must be retained by the facility licensee and made available to the Commission upon request.~~

~~(4) *Records.* The certification program documentation must include the following:~~

~~(i) The facility licensee must maintain records documenting the participation of each certified operator trainee in the certification examination. The records must contain copies of examinations administered, the answers given by the trainee, and the results of evaluations and documentation of examinations and of any additional training administered in areas in which a certified operator has exhibited deficiencies. The facility licensee must retain these records during the period in which the associated certified operators remain certified at the facility.~~

~~(ii) Each record required by this part must be legible throughout the retention period specified by regulation. The record may be the original, a reproduced copy, or an electronic copy provided that the copy is authenticated by authorized personnel.~~

~~(c) *Continuing training program.* (1) A program based upon a systems approach to training, as defined by § 53.725(b), must be utilized for the continuing training of certified operators. This continuing training program must ensure that certified operators at the facility will maintain the knowledge, skills, and abilities necessary to protect the public health. This program must be approved by the Commission prior to its use for continuing training, as described under § 53.730(g). The approved requalification program for certified operators shall be subject to the requirements of Subpart I, "Maintaining and Revising Licensing Basis Information During Operations," of this part.~~

~~(2) The facility licensee must propose a requalification examination program for testing a sample of the topics included under~~

~~the systems approach to training, to include the examination methods, the criteria to be used to assess passing performance, and the periodicity for requalification examination administration. This program must be approved by the Commission prior to its use for examining certified operators, as described under § 53.730(g). The approved requalification examination program for certified operators shall be subject to the requirements of Subpart I, "Maintaining and Revising Licensing Basis Information During Operations," of this part. The following requirements apply to certified operator requalification examination programs:~~

~~(i) The facility licensee must ensure that a representative of the Commission is afforded the opportunity to be present during requalification examination administration.~~

~~(ii) The facility licensee must ensure that each certified operator is administered a complete requalification examination within the periodicity specified within the facility licensee's certified operator requalification examination program.~~

~~(3) *Records.* The continuing training program documentation must include the following:~~

~~(i) The facility licensee must maintain records documenting the participation of each certified operator in the continuing training program. The records must contain copies of examinations administered, the answers given by the certified operator, and the results of evaluations and documentation of examinations and of any additional training administered in areas in which a certified operator has exhibited deficiencies. The facility licensee must retain these records while the associated certified operators remain certified at the facility.~~

~~(ii) Each record required by this part must be legible throughout the retention period specified by each Commission regulation. The record may be the original, a reproduced copy, or an electronic copy provided that the copy is authenticated by authorized personnel.~~

~~(d) *Examination integrity.* Certified operator trainees, certified operators, and facility licensees must not engage in any activity that compromises the integrity of any test or examination required by §§~~

~~53.800 through 53.830. The integrity of a test or examination is considered compromised if any activity, regardless of intent, affected, or, but for detection, could have affected the equitable and consistent administration of the test or examination. This includes all activities related to the preparation, administration, and grading of the tests and examinations required by §§ 53.800 through 53.830.~~

~~(e) *Simulation facilities.* (1) This section addresses the use of a simulation facility for the administration of examinations, for training, to meet experience requirements for certified operators, and for conducting human factors engineering analysis or assessments.~~

~~(2) Simulation facilities used for training purposes, meeting experience requirements, or for the conduct of examinations under § 53.815(b) and (c) must meet the following criteria as they relate to the facility licensee's reference plant:~~

~~(i) The simulator must be of sufficient scope and fidelity for individuals to acquire and demonstrate the necessary knowledge skills and abilities to safely perform certified operator duties.~~

~~(ii) The simulator utilizes models relating to nuclear and thermal-hydraulic characteristics that either replicate the most recent fuel load in the commercial nuclear plant reference plant or, prior to initial fuel load, replicate the intended initial fuel load for the commercial nuclear plant reference plant.~~

~~(iii) Simulator fidelity has been demonstrated so that significant control manipulations are completed without procedural exceptions, simulator performance exceptions, or deviation from the approved training scenario sequence.~~

~~(3) Facility licensees that propose to use a simulation facility for conducting human factors engineering analysis or assessments must provide a simulator that is capable of supporting all testing needed to demonstrate that aspects of the safety case such as operator certification, human factors engineering, and other operational areas will be conducted as described in the safety analysis report.~~

~~(4) Continued assurance of simulator fidelity. Facility licensees that maintain a simulation facility for training purposes, meeting experience requirements, or for the conduct of examinations under §~~

~~53.815(b) and (c) must:~~

~~(i) Conduct performance testing throughout the life of the simulation facility in a manner sufficient to ensure that paragraph (2) of this section is met. The results of performance tests must be retained for four years after the completion of each performance test or until superseded by updated test results;~~

~~(ii) Promptly correct modeling and hardware discrepancies and discrepancies identified from scenario validation and from performance testing or provide justification for why the presence of such discrepancies will not adversely affect the criteria of paragraph (2) of this section;~~

~~(iii) Make results of any uncorrected performance test failures that may exist at the time of the examination or requalification program inspection available for NRC review, prior to or concurrent with preparations for each examination or requalification program inspection; and~~

~~(iv) Maintain the provisions for examination and test integrity consistent with § 53.815(d).~~

~~(5) A simulation facility must meet the requirements of paragraphs (2) and (3) of this section for the Commission to accept the simulation facility for conducting examinations as described in § 53.815(b) of this part, requalification training as described in § 53.815(c) of this part, or for performing control manipulations that affect reactivity to establish eligibility for operator certification as described in § 53.820(d).~~

~~(f) *Waiver of examination and test requirements.* The facility licensee may waive any or all of the requirements for an examination in accordance with their approved training and qualification program.~~

~~(g) *Proficiency.* The facility must establish and implement a program to ensure that certified operators will maintain proficiency regarding position functions and familiarity with plant status. This program must include those steps that will be taken in order to re-establish proficiency when it cannot be maintained.~~

<p>§ 53.820 Issuance of certificates.</p> <p>The facility licensee must ensure that the following requirements have been met prior to the issuance of a certified operator certification to any individual:</p> <p>(a) The individual has completed a minimum educational level of either a high school diploma or general equivalency diploma.</p> <p>(b) The individual must have satisfactorily completed a training program meeting the requirements of § 53.815(a).</p> <p>(c) The individual must have passed an examination meeting the requirements of § 53.815(b).</p> <p>(d) Provide evidence that the applicant, as a trainee, has successfully demonstrated competence in manipulating the controls of either the facility for which a license is sought or a simulation facility that meets the requirements of § 53.815(e).</p> <p>(e) The individual must meet the medical condition and general health provisions of § 53.745(a).</p> <p>(1) <i>Conditional certification.</i> If an individual's general medical condition does not meet the minimum standards under § 53.745(a) of this part, for those medical circumstances where a medical restriction can accommodate the medical issue, the facility licensee may permit the individual to perform certified operator duties provided that compliance with the relevant restrictions is established and maintained.</p>	
<p>§ 53.825 Conditions of certificates.</p> <p>The facility licensee must ensure that each certificate is subject to the following conditions:</p> <p>(a) Neither the certificate nor any right under the certificate may be assigned or otherwise transferred.</p> <p>(b) The certificate is limited to those controls of the facility specified in the certificate.</p> <p>(c) The certified operator must complete a continuing training program as described by § 53.815(c).</p> <p>(1) The certified operator must pass a complete continuing training examination as described by § 53.815(c).</p>	

<p>(d) The certified operator must have a biennial medical examination.</p> <p>(e) The certified operator must maintain proficiency in accordance with the facility proficiency program.</p>	
<p>§ 53.830 Expiration.</p> <p>The general license expires upon a generally licensed operator no longer being employed in a position that may involve the manipulation of the controls of the commercial nuclear plant.</p> <p>Commercial nuclear plant licensees must, at a minimum, terminate operator certifications upon termination of a certified individual's employment with the commercial nuclear plant licensee, or upon determination by the commercial nuclear plant licensee that the certified individual no longer needs to maintain a certification.</p>	<p>This section addresses the conditions under which the general license of GLROs expires.</p>
<p>§ 53.835 Training and qualification of commercial nuclear plant personnel.</p> <p>(a) <i>Applicability.</i> Sections 53.835 through 53.840 address personnel training requirements. The regulations within this section are applicable to all applicants for <u>or holders of</u> operating licenses or combined licenses and facilities licensed under this part.</p> <p>(b) Reserved.</p>	<p>Adapted from § 50.120.</p>
<p>§ 53.840 Training and qualification requirements.</p> <p>(a)(1) Prior to fuel load, each commercial nuclear plant operating license applicant and each holder of an operating <u>or combined</u> license <u>under this part</u> must, with sufficient time to provide trained and qualified personnel to operate the facility, ensure establish, implement, and maintain a training program is established, implemented, and maintained that meets the requirements of paragraphs (b) and (c) of this section.</p>	

<p>(2) Each holder of a combined license must establish, implement, and maintain the training program that meets the requirements of paragraphs (b) and (c) of this section, as described in the final safety analysis report with sufficient time to provide trained and qualified personnel to operate the facility.</p> <p>(b) The training program must be derived from a systems approach to training as defined in this part and must provide, at a minimum, for the training and qualification of the following categories of commercial nuclear plant personnel:</p> <ul style="list-style-type: none"> (1) supervisors (e.g., shift supervisors), (2) technicians (e.g., maintenance, chemistry, and radiological), and (3) other appropriate operating personnel (e.g., auxiliary operators and certified fuel handlers). <p>(c) The training program must incorporate the instructional requirements necessary to provide qualified personnel to operate <u>components of a commercial nuclear plant</u> and maintain the facility in a safe manner in all modes of operation. The training program must be developed to be in compliance with the facility license, including all technical specifications and applicable regulations.</p> <p>(1) The training program must be periodically evaluated and revised as appropriate to reflect industry experience as well as changes to the facility, procedures, regulations, and quality assurance requirements. The training program must be periodically reviewed by facility licensee management for effectiveness.</p> <p>(2) Sufficient records must be maintained by the facility licensee to maintain program integrity and kept available for NRC inspection to verify the adequacy of the <u>training</u> program.</p>	
<p>§ 53.845 Programs.</p> <p>Programs must be provided for each commercial nuclear plant such that, when combined with associated design features and human actions, the plant will satisfy the safety criteria defined in §§ 53.210 and 53.220. Programs must also support continued assurance that</p>	<p>Changes to §§ 53.845 through 53.910 are primarily to improve consistency and alignment with previously released iterations of preliminary rule text for Framework A, Subparts A through K, or Part 73.</p>

<p>the safety functions identified in § 53.230 are maintained during normal operations and licensing basis events. The required plant programs must include but are not necessarily limited to the programs described in the following sections of this Subpart. Licensees may combine, separate, and otherwise organize programs and related documents as appropriate for the technologies and organizations associated with the licensed commercial nuclear plant.</p>	
<p>§ 53.850 Radiation protection.</p> <p>(a) Each licensee<u>holder of an operating license or combined license</u> under this part must develop and establish, implement, and <u>maintain</u> a Radiation Protection Program for operations that is commensurate with the scope and extent of licensed activities under this part and includes measures for limiting and monitoring radioactive plant effluents and limiting and monitoring the dose to individuals working with radioactive materials in accordance with 10 CFR part 20.</p> <p>(b) Each licensee under this part must develop establish, implement, and maintain a program for the control of radioactive effluents and for keeping the doses to members of the public from radioactive effluents as low as <u>is</u> reasonably achievable. The program shall<u>must</u> be contained in an Offsite Dose Calculations Manual (ODCM), shall be implemented by procedures, and shall include remedial actions to be taken whenever the program limits are exceeded. The ODCM shall:</p> <p>(i) Contain the methodology and parameters used in the calculation of offsite doses resulting from radioactive gaseous and liquid effluents, in the calculation of gaseous and liquid effluent monitoring alarm and trip setpoints, and in the conduct of the radiological environmental monitoring program; and</p> <p>(ii) Contain the radioactive effluent controls and radiological environmental monitoring activities, and descriptions of the information that should be included in the Annual Radiological Environmental Operating, and Radioactive Effluent Release Reports required by § 53.1645.</p>	

<p style="text-align: center;">(c) [Additional provisions may be added if needed]</p>	
<p>§ 53.855 Emergency preparedness.</p> <p>Each licenseholder of an operating license or combined license under this part must develop establish, implement, and maintain, an emergency response plan that provides reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency.</p> <p>(a) The emergency plan must contain information needed to demonstrate compliance with the elements set forth in:</p> <ol style="list-style-type: none"> (1) 10 CFR 50.160 of this chapter; or (2) the requirements in appendix E to 10 CFR part 50 and the planning standards in § 50.47. <p>(b) [Reserved]</p>	
<p>§ 53.860 Security program.</p> <p>(a) <i>Physical Protection Program.</i> Each licenseholder of an operating license or combined license under this part must establish, maintain, and implement, and maintain a physical protection program meeting the following requirements:</p> <ol style="list-style-type: none"> (1) The licensee must implement security requirements for the protection of special nuclear material based on the form, enrichment, and quantity in accordance with 10 CFR part 73, as applicable, and implement security requirements for the protection of Category 1 and Category 2 quantities of radioactive material in accordance with 10 CFR part 37, as applicable; and (2) The licensee must meet the provisions set forth in either 10 CFR 73.55 or 73.100, unless the licensee meets the following criterion. <ol style="list-style-type: none"> (i) The radiological consequences from a hypothetical, unmitigated design basis threat initiated event involving the loss of engineered systems for decay heat removal and possible breaches 	

<p>in physical structures surrounding the reactor, spent fuel, and other inventories of radioactive materials result in offsite doses below the values in § 53.210 of this chapter.</p> <p>(ii) The licensee must perform a site-specific analysis to demonstrate that the criterion in § 53.860(a)(2)(i) is met. The licensee must maintain the analysis until the permanent cessation of operations <u>and permanent removal of fuel from the reactor vessel as described</u> under § 53.1070.</p> <p>(b) <i>Fitness for Duty</i>. Each <u>licensee holder of an operating license or combined license</u> under this part must establish, maintain, <u>and implement, and maintain</u> a fitness for duty (FFD) program that meets the requirements in 10 CFR part 26.</p> <p>(c) <i>Access Authorization</i>. Each <u>licensee holder of an operating license or combined license</u> under this part must establish, maintain, and implement an Access Authorization, and maintain an access authorization program that meets the requirements in 10 CFR 73.120 if the criterion in § 53.860(a)(2)(i) is met, or <u>the requirements in § 73.56</u>; if the criterion is not met.</p> <p>(d) <i>Cyber Security</i>. Each <u>licensee holder of an operating license or combined license</u> under this part must establish, maintain, <u>and implement, and maintain</u> a cyber security program that meets the requirements in 10 CFR 73.110 or 73.54.</p> <p>(e) <i>Information Security</i>. Each <u>licensee holder of an operating license or combined license</u> under this part must establish, maintain, <u>and implement, and maintain</u> an information protection system that meets the requirements of 10 CFR 73.21, 73.22, and 73.23, as applicable.</p>	
<p>§ 53.865 Quality assurance.</p> <p>(a) Each <u>licensee holder of an operating license or combined license</u> under this part is responsible for the establishment and execution of the quality assurance program (QAP) in accordance with Subpart K of this part. A written QAP manual must be developed and used to guide the conduct of the program in accordance with generally</p>	

<p>accepted consensus codes and standards. <u>QAQuality assurance</u> activities must be based upon written procedures.-</p>	
<p>§ 53.870 Integrity assessment <u>programsprogram</u>.</p> <p>Each <u>licenseeholder of an operating license or combined license</u> under this part must develop and implement an integrity assessment program to monitor, evaluate, and manage:</p> <p>(a) The effects of plant aging on SR and NSRSS SSCs as well as <u>on</u> any NSS SSCs whose failure could affect the performance of plant safety functions. The program may refer to surveillances, tests, and inspections conducted for specific SSCs in accordance with other requirements in this part or conducted in accordance with applicable accepted consensus codes and standards;</p> <p>(b) Cyclic or transient load limits to ensure <u>that SR and NSRSS</u> SSCs are maintained within the applicable design limits; and</p> <p>(c) Degradation mechanisms related to chemical interactions, operating temperatures, effects of irradiation, and other environmental factors to ensure <u>that</u> the capabilities and reliabilities of <u>SR and NSRSS</u> SSCs satisfy the functional design criteria of §§ 53.410 and 53.420.</p>	
<p>§ 53.875 Fire protection.</p> <p>(a)(1) Each <u>licenseeholder of an operating license or combined license</u> under this part must have a fire protection plan that describes the overall fire protection program for the facility, identifies the various positions within the licensee's organization that are responsible for the program, states the authorities that are delegated to each of these positions to implement those responsibilities, and <u>outlineoutlines</u> the plans for fire protection, fire detection and suppression capability, and limitation of fire damage.</p> <p>(2) The fire protection plan must also describe specific features necessary to implement the program described in paragraph (a)(1) of</p>	

<p>this section such as: administrative controls and personnel requirements for fire prevention and manual fire suppression activities; automatic and manually operated fire detection and suppression systems; and the means to limit fire damage to SR and NSRSS structures, systems, or componentsSSCs so that the capability to meet the requirements of § 53.210 is ensured.</p> <p>(b)(1) Each licensee<u>holder of an operating license or combined license</u> under this part must develop a performance-based or deterministic fire protection program that seeks to meet<u>meets</u> the safety criteria outlined in §§ 53.210 and 53.220, related safety functions outlined in § 53.230, and defense in depth as outlined in § 53.250 with specific fire protection measures related to fire prevention, fire detection, and fire suppression.</p> <p>(2) The fire protection program must comply with the following:</p> <p>(i) SR and NSRSS structures, systems, and componentsSSCs must be designed and located to minimize, consistent with other safety requirements, the probability and effect of fires and explosions.</p> <p>(ii) Noncombustible and fire-resistant materials shall<u>must</u> be used wherever practical throughout the facility, particularly in locations with SR and NSRSS structures, systems, or componentsSSCs.</p> <p>(iii) Fire detection and fighting systems of appropriate capacity and capability shall<u>must</u> be provided and designed to minimize the adverse effects of fires on SR and NSRSS structures, systems, and components.SSCs.</p> <p>(iv) Firefighting systems shall<u>must</u> be designed to ensure that their rupture or inadvertent operation does not significantly impair the safety capability of these structures, systems, and componentsSR and NSRSS SSCs.</p>	
<p>§ 53.880 Inservice inspection/in-service testing.</p> <p>(a) Each applicant and licensee<u>holder of an operating license or combined license</u> under this part must develop and implement programs<u>a program</u> for In-Service Inspection (ISI) and In-Service Testing (IST) prior to receiving an operating license-or combined</p>	

<p><u>license</u>. The ISI/IST program must include all inspections and tests required by the codes and standards used in the design and be supplemented by risk insights that identify the most important SSCs to plant safety. The types of testing and inspections and their frequency should be informed by the risk insights so as to maintain the <u>SSC</u> reliability and performance <u>of SSCs</u> consistent with the design. Risk insights must also be used to determine when to conduct the inspections and tests (e.g., full power, shutdown, refueling) so as to minimize risk to the plant and the public. The ISI/IST program must be documented in a written manual and managed by qualified personnel reporting to the Plant Manager.</p> <p>(b) Prior to starting plant operation, baseline inspections and testing must be performed using the same techniques as will be used for future inspections and testing. These inspection <u>The results of these inspections</u> and testing results must be used as benchmarks for evaluating the results of future inspections and test <u>testing</u>. Sufficient room and support must be provided to accommodate the personnel, ISI/IST equipment, and shielding necessary to perform the inspections and testing. Acceptance criteria for determining whether or not corrective action is needed must be developed (or taken from the codes and standards used in the design) for evaluating the results of the inspections and test <u>testing</u>. The results of the inspections and testing must be provided to the Plant Manager who is responsible for determining what, if any, corrective action is needed and when it should be done <u>taken</u>. The ISI/IST results and corrective actions must be documented and <u>the documentation</u> retained ever <u>for</u> the life of the plant.</p>	
<p>§ 53.885 Criticality safety program.</p> <p>Each licensee under this part must have a criticality safety program. The program must address the requirements in 10 CFR 70.24 of this chapter for maintaining a monitoring system capable of detecting a criticality, having emergency procedures, and providing radiation protection for plant workers.</p>	

§ 53.890 Facility safety program.

Each ~~licensee~~holder of an operating license or combined license under this part must establish ~~and~~, implement, ~~and maintain~~ a facility safety program (FSP) that routinely and systematically evaluates potential hazards; operating experience related to plant SSCs, human actions, and programmatic controls affecting the safety functions required by § 53.230; and the resulting changes in risks to the public from operation of the facility over its operating lifetime. An FSP must include a risk-informed, performance-based process to proactively identify new or revised internal or external hazards to the facility and performance issues related to plant SSCs, human actions, and programmatic controls; assess changes in the risks posed to the public from the licensed commercial nuclear plant; and, when appropriate, ~~must~~ consider measures to mitigate or eliminate the resulting risks using the criteria defined in § 53.895. The FSP must be implemented and supported by a written FSP as required in § 53.900.

§ 53.895 Facility safety program performance criteria.

(a) Each ~~licensee~~forholder of an commercial nuclear plantoperating license or combined license under this part must take measures as may be appropriate when considering potential risks to public health and safety, technology changes, economic costs, operating experience, new or revised hazard assessments, or other factors included in the FSP plan required by § 53.900. Performance objectives for design features and programmatic controls must be established such that the risks to public health and safety from a commercial nuclear plant due to normal operation or licensing basis events must not be a significant addition to other societal risks.

(1) Each licensee must assess risk reduction measures related to the release or potential release of radioactive materials in plant effluents during normal operation whenever such a release could result in a member of the public receiving an annual radiation dose in excess of 0.3 millirems from liquid effluents or 1 millirem from gaseous

effluents. The assessment and risk reduction measures must maintain doses to members of the public as low as is reasonably achievable in accordance with § 53.260 taking into account the state of technology, the economics of improvements in relation to the state of technology, operating experience, and the economics of improvements in relation to benefits to the public health and safety.

(2) Each licensee must assess potential risk reduction measures related to licensing basis events, identified hazards, or other specific contributors to the overall cumulative risk from unplanned events as follows:

(i) For new or revised hazards, plant features, or other contributors to licensing basis events with an estimated upper bound frequency above one in 1,000 years, licensees must consider risk reduction measures whenever the estimated radiation dose to a member of the public exceeds 2.5 millirem and the estimated frequency weighted cumulative dose to nearby populations increases by 5 person-rem.

(ii) For new or revised hazards, plant features, or other contributors to licensing basis events with an estimated lower bound frequency below one in 1,000 years, licensees must consider risk reduction measures whenever the estimated frequency weighted cumulative dose to nearby populations increases by 5 person-rem and either the frequency of a member of the public receiving a radiation dose with the potential for immediate health effects approaches five in 100 million years or a radiation dose with the potential to cause latent health effects approaches two in 10 million years.

(iii) For new or revised hazards, plant features, or other contributors to licensing basis events with an estimated dose to a member of the public less than or equal to a threshold value used for operational flexibilities in accordance with § 53.470, licensees must consider risk reduction measures whenever changes to the estimated consequences reduce the margin to the subject threshold value by more than ten percent and the estimated frequency weighted cumulative dose to nearby populations increases by 5 person-rem.

(iv) The assessment and risk reduction measures must

<p>maintain doses to members of the public as low as is reasonably achievable taking into account the state of technology, the economics of improvements in relation to the state of technology, information available on potential hazards, operating experience, and the economics of improvements in relation to benefits to the public health and safety.</p> <p>(b) Possible risk reduction measures for commercial nuclear plants whose licenses refer to certified designs or manufacturing licenses must also follow the change control and reporting provisions of subpart I of this part related to changes to standardized designs. Licensees need not pursue risk reduction measures under this section if the changes would require a license amendment under Subpart I due to changes in a certified design.</p>	
<p>§ 53.900 Facility safety program plan.</p> <p>(a) General. Each licensee<u>Each holder of an operating license or combined license under this part</u> must adopt and implement an FSP using a written FSP plan that, at a minimum, contains the elements in this section. This FSP plan must be approved by <u>the</u> NRC under the process required in § 53.905.</p> <p>(b) Scope. (1) Each licensee must set forth in its FSP plan a statement describing the facility or facilities covered by the plan. The description must include the facility, personnel, programmatic controls, and facility environs that influence the assessments used in assessing potential risks in accordance with subparts B and C of this part and potential reduction measures using the performance criteria in § 53.895. The scope of the program<u>FSP</u> plan must consider new or revised information related to:</p> <p>(i) The performance of SSCs in terms of their capability and availability to perform the required safety functions required by § 53.230 during normal operation and licensing basis events and assessing potential risk reduction measures using the performance criteria in § 53.895;</p> <p>(ii) The role of personnel in making decisions, operating plant</p>	

SSCs, or otherwise supporting the safety functions required by § 53.230 and assessing potential risk reduction measures using the performance criteria in § 53.895;

(iii) The programmatic controls required within this part or otherwise implemented by a licensee to ensure capabilities and availabilities of SSCs and personnel performing the safety functions required by § 53.230 and assessing potential risk reduction measures using the performance criteria in § 53.895;

(iv) Natural and manmade hazards with the potential to affect plant SSCs or personnel supporting the safety functions required by § 53.230 and assessing potential risk reduction measures using the performance criteria in § 53.895; and

(v) Operating experience related to plant SSCs, personnel, or programmatic controls supporting the safety functions required by § 53.230 and assessing potential risk reduction measures using the performance criteria in § 53.895.

(2) Each licensee must set forth in its FSP plan the methods used to analyze the technologies identified under paragraph (f)(1)(i) of this section against the criteria provided in § 53.895.

(3) Each licensee must set forth in its FSP plan a description of its overall safety philosophy and intended safety culture to be practiced by its management, employees, and contractors; and

(4) Each licensee must identify the required participants in the FSP plan, which will include managers, employees, and contractors that directly support facility operations; maintain, inspect, or change plant SSCs or programmatic controls; or assess potential risk reduction measures as required by § 53.895.

(c) Implementation. Each licensee must describe in its FSP plan the process the licensee will use to implement and maintain its FSP. As part of the licensee's implementation process, the licensee must describe roles and responsibilities of each position that has significant responsibility for implementing the FSP, including those held by employees and other persons utilizing or providing significant services as identified by the licensee pursuant to paragraph (b)(3) of this section.

(d) Facility safety program training:

(1) Each manager, employee, and contractor identified under paragraph (b)(3) of this section will be trained on the licensee's FSP.

(2) Each licensee must establish and describe in its FSP plan the licensee's facility safety program training plan. An FSP training plan must set forth the procedures by which managers, employees, and contractors identified under paragraph (b)(3) of this section will be trained on the licensee's FSP. An FSP training plan must help ensure that all personnel who are responsible for implementing and supporting the FSP understand the goals of the program, are familiar with the elements of the program, and have the requisite knowledge and skills to fulfill their responsibilities under the program.

(3) For each position identified pursuant to paragraph (b)(3) of this section, the training plan must describe the frequency and content of the FSP training that the position receives.

(4) Training under this subpart F may include, but is not limited to, classroom, computer-based, or correspondence training.

(5) The licensee must keep a record of all training conducted under this part and update that record as necessary. The FSP training plan must set forth the process used to maintain and update the necessary training records required by this part.

(6) The FSP training plan must set forth the process used by the licensee to ensure that it is complying with the training requirements set forth in the training plan.

(e) Risk-informed hazard management program. Each licensee must establish a risk-informed hazard management program as part of the licensee's FSP. The risk-informed hazard management program must be fully described in the FSP plan. The risk-informed hazard management program must establish:

(1) The processes or procedures used in the risk-informed hazard analysis to identify internal and external hazards having the potential to increase the frequency or consequences of radiological releases from normal operation or licensing basis events;

(2) The processes or procedures used in the risk-informed hazard analysis to analyze identified hazards and support

assessments against the criteria provided in § 53.895;

(3) The methods used to identify and implement actions that mitigate or eliminate hazards based on assessments against the criteria provided in § 53.895;

(4) The methods used to ensure changes to the facility design or operations do not adversely affect measures in place to mitigate or eliminate hazards or that such changes have been assessed pursuant to the appropriate change control and have been incorporated into models used for assessments against the criteria provided in § 53.895;

(5) The methods used to maintain records of identified hazards and risks and the mitigation or elimination of the identified hazards and risks throughout the life of the facility; and

(6) The position title(s) of the individual(s) responsible for administering the risk-informed hazard management program.

(f) Technology assessment program. Each licensee must establish a technology assessment program as part of the licensee's FSP. The technology assessment program must be fully described in the FSP plan. The technology assessment program must establish:

(1) The methods used to identify and analyze current, new, or novel technologies that will mitigate or eliminate internal or external hazards and resulting risks from the release of radioactive materials from a facility during normal operations or licensing basis events;

(2) The methods used to analyze the technologies identified under paragraph (f)(1) of this section against the criteria provided in § 53.895;

(3) The methods used to identify and implement actions related to technologies identified under paragraph (f)(1) of this section based on assessments against the criteria provided in § 53.895;

(4) The methods used to maintain records of technology assessments throughout the life of the facility; and

(5) The position title(s) of the individual(s) responsible for administering the technology assessment program.

(g) Internal facility safety program assessment. (1) The licensee must describe in the FSP plan methods to annually confirm:

(i) The FSP is fully implemented and effective;

<p>(ii) The licensee's overall safety philosophy and intended safety culture are being implemented and effective;</p> <p>(iii) The facility safety program training program is implemented and effective; and</p> <p>(iv) The facility continues to meet the performance criteria set forth in § 53.230 and effectively consider risk reduction measures using the performance criteria set forth in § 53.895.</p> <p>(2) As part of its FSP plan, the licensee must describe the processes used to:</p> <p>(i) Conduct internal FSP assessments;</p> <p>(ii) Internally report the findings of the internal FSP assessments to a management level so that the required authority and organizational freedom, including sufficient independence from cost and schedule when opposed to safety considerations, are provided;</p> <p>(iii) Develop, track, and review recommendations as a result of the internal FSP assessments;</p> <p>(iv) Develop improvement plans based on the internal FSP assessments; and</p> <p>(v) Manage revisions and updates to the FSP plan based on the internal facility safety program assessments.</p>	
<p>§ 53.905 Review, approval, and retention of facility safety program plans.</p> <p>(a)-The NRC will review the FSP plan to determine if the elements prescribed in this part are sufficiently addressed in the applicant's submission. Approval of an FSP plan under this part does not constitute approval of the specific actions the licensee will implement under its FSP plan pursuant to § 53.900 and must not be construed as establishing an NRC standard regarding those specific actions.</p> <p>(b) Updates and revisions to the FSP plan must<u>will</u> be provided to the NRC in accordance with the requirements in Subpart I of this part.</p>	

§ 53.910 Procedures and guidelines.

(a) Each licensee holder of an operating license or combined license under this part must have a program for developing, implementing, and maintaining an integrated set of procedures, guidelines, and related supporting activities to support normal operations and responding/respond to possible unplanned events.

(b) The program required by paragraph (a) of this section must include but is not necessarily limited to development, implementation, maintenance, and supporting activities of the following procedures and guidelines for the following:

- (1) Plant operations
- (2) Maintenance activities under § 53.715
- (3) Program requirements under this subpart
- (4) Emergency operating procedures, if developed to address

the role of human intervention is needed to respond actions in responding to licensing basis events with a frequency greater than one in ten thousand years accounting for uncertainties

(5) Accident management guidelines, if developed to address the role of human intervention is needed to respond actions in responding to licensing basis events with a frequency less than one in ten thousand years accounting for uncertainties

(c) reserved

(6) Procedures that describe how the licensee will address the following areas if the licensee is notified of a potential aircraft threat:

(i) Verification of the authenticity of threat notifications;

(ii) Maintenance of continuous communication with threat notification sources;

(iii) Contacting all onsite personnel and applicable offsite response organizations;

(iv) Onsite actions necessary to enhance the capability of the facility to mitigate the consequences of an aircraft impact;

(v) Measures to reduce visual discrimination of the site relative to its surroundings or individual buildings within the protected area;

(vi) Dispersal of equipment and personnel, as well as rapid entry into site protected areas for essential onsite personnel and offsite responders who are necessary to mitigate the event; and
(vii) Recall of site personnel.