

**Licensed Operator Training Cold Licensing Plan  
NRC Submittal By NEI Operator Licensing Task Force**

**August 20, 2007**

**Background**

Cold licensing of licensed operators at a new plant is a temporary, evolving process utilized during the preoperational phase of a new nuclear plant. It provides the method for operations personnel to acquire the knowledge and experience required for licensed operator duties during the unique conditions of new plant construction.

Since the late 1980s, NRC regulations/guidelines and industry guidelines have undergone revisions that removed guidance related to the "cold licensing process" for operators during new nuclear plant construction. This guidance provided the method for operations personnel to obtain an operator license. Currently the only regulatory guidance addressing the issue of granting operator licenses prior to a plant becoming operational is contained in NUREG 1021 Section 202.

During the 1980s, the Systematic Approach to Training (SAT) and Training Program Accreditation processes were implemented. These processes provided methods for determining job performance needs, implementing required training and evaluating performance and training results. Today, the accreditation renewal process continues to evaluate training program effectiveness and provide feedback for the continued improvement of nuclear training programs.

Plants in the past were designed and constructed with "one of a kind" designs. This resulted in long construction phases which integrated on-site training (i.e. classroom instruction, simulator training, etc) with construction and startup testing late in project life. New nuclear plant deployment schedules have significantly shorter construction phases requiring training implementation early in the construction phase. This results in the inability to use the constructed plant and associated construction testing to support the early phases of the training program.

For new nuclear plants, the early hiring, training and qualification of licensed operator candidates will be critical. Optimized construction schedules for the new advanced plants indicate that operator training will be needed early in the construction phase to support preoperational testing and fuel load activities. With the potential for multiple units scheduling fuel loading activities in a narrow time frame, the need for a highly efficient and effective licensed operator training and licensing process will be required. A nominal schedule utilizing two simulators for the cold license process is shown below:

Milestone Relative to Fuel Load (months)

Licensed operator training begins	- 48
Plant construction begins	- 48
Plant Reference Simulator Available	- 24
NRC examinations begin	- 18
Pre-operational Testing begins	- 12
Fuel Load	0
Startup Testing begins	0
Plant Operational	+ 6

Since December 2006, an industry task force facilitated by NEI, has reviewed the needs of licensing operators for the new nuclear plants in comparison to the current operator licensing regulations and processes denoted in Reg. Guide 1.8, ANSI 3.1, 10CFR 50.120, 10CFR 55, RG 1.149 and NUREG-1021. This review determined that some elements of the regulatory guidance related to licensed operators will be difficult if not impossible to meet for new nuclear power plants (see Cold license process cross reference table). The commitment (NEI 06-13) to the selection and training regulatory guidance contained in the proposed FSAR Section 13.2 must be updated to address the unique situation facing new nuclear power plant builders in regards to the selection, training and licensing of operations personnel during the construction and testing phases.

### **Problem Statement**

Existing regulatory guidance addresses only the training and qualification needs of a licensed candidate for an operating nuclear power plant. The current regulatory guidance doesn't address the situation where the plant is not operational (i.e. under construction) Regulatory guidance related to the cold licensing process needs to be developed so that clear, appropriate, and achievable training commitments can be documented in each facility's FSAR and COL application.

### **Recommendations**

The "cold licensing" process for the selection, training and licensing of Operations personnel for the new nuclear plants should follow current industry guidance for operating plants with additional guidance or exemptions in the following areas:

- A. Experience requirements for license candidates
- B. Training program accreditation and implementation
- C. In-plant JPMs and On-shift OJT during construction phase
- D. Simulator Training Using a Part Task/Limited Scope Simulator
- E. Continuing Training for License Candidates prior to NRC license exams
- F. NRC license examinations approximately 18 months before fuel load
- G. Initiation of licensed operator continuing training

Since the initial licensed operator training classes will not have the opportunity to gain operating experience for the new design prior to fuel load, alternative solutions will be necessary to support the training and licensing processes. As the plant evolves during the construction phase, the SAT process will be utilized to implement the best applicable training strategy.

#### **A. Experience Requirements for License Candidates**

Build on previous guidance used during nuclear plant construction but update the guidance to reflect advances in training effectiveness due to the use of the systematic approach to training, advances in simulation technology, the use of advanced technology control rooms, and the use of virtual technology. Systematically developed training provides a high degree of assurance that the integrated requisite knowledge and ability has been attained.

Retain the regulatory guidance contained in Revision 2 of Regulatory Guide 1.8. that exempts cold license applicants from the referenced experience requirements. In addition, update the regulatory guidance to include the following provisions:

1. Experience may be gained during the construction and testing phases while performing one or more of the following tasks:
  - a. Plant operating procedure development and verification
  - b. Human engineering and task analysis verification
  - c. Preoperational testing of plant systems
  - d. Participating in the cold and hot functional testing program
  - e. Acting as an operations classroom, simulator, or OJT instructor
2. Experience requirements do not need to be fully met prior to enrolling in a licensed operator training program.
3. Experience requirements not fully met at the time of the licensed operator application submittal shall be met prior to issuing the individual's NRC operator license. Following satisfactory completion of a NRC license examination, the Licensee will notify the NRC when the candidate's experience requirements have been met.
4. Time spent in an on-the-job training phase may be counted as on-site and total nuclear power plant experience.
5. On-site experience may be gained anytime prior to fuel load by participating in construction and testing activities.

6. Completion of a site familiarization course designed on a systematic evaluation of site design features and operator site familiarization needs may satisfy the six month on-site experience requirement for RO and non-degreed SRO candidates.
7. Six months experience performing activities described in Item 1 above satisfies the requirement for a degreed instant SRO to have six months experience at the reactor performing duties as a staff engineer.
8. A reactor operator candidate who completes a site-specific non-licensed operator training program for critical non-licensed operator tasks meets the requirement to have one year on-site experience and six months as a non-licensed operator at the facility for which the license is sought.
9. A senior reactor operator candidate who completes a combined reactor operator and senior reactor operator course meets the requirement for one year experience as an RO.
10. A senior reactor operator candidate who completes a plant referenced simulator course, based on a systematic analysis of the supervisory skill, knowledge, and ability required of a SRO, meets the special experience requirements related to at power and startup operations. A systematic process to identify the objectives associated with experience gained at an operating facility coupled with high fidelity simulation provides assurance that the requisite knowledge, skill, and ability level has been achieved.
11. A senior reactor operator candidate who completes an observation program, based on a systematic analysis of the supervisory skill, knowledge, and ability required of a SRO, at an operating reactor of similar design meets the special experience requirements related to at power and startup operations. A systematic process to identify the objectives associated with experience gained at an operating facility coupled with direct observation of reactor operation provides assurance that the requisite knowledge, skill, and ability level has been achieved.
12. From the above listed alternative methods for acquiring plant experience, the following table identifies the critical regulatory challenges and the alternative methods for acquiring applicable experience.

### Critical Regulatory Challenge Table

Requirement	Applicable Position	Alternative Experience Activity
One year on-site at the reactor for which the license is sought with six months as a NLO	RO	Completion of a site familiarization course designed on a systematic evaluation of site design features and operator site familiarization needs <u>and</u> Completion of a site-specific non-licensed operator training program for critical non-licensed operator tasks.
RO license actively involved in the performance of licensed duties for at least one year or have at least two years of military experience in a position equivalent to a licensed reactor operator.	SRO (Non-degreed)	Completion of a site familiarization course designed on a systematic evaluation of site design features and operator site familiarization needs <u>and</u> Completion of a combined RO and SRO course at the reactor for which the license is sought.
<ul style="list-style-type: none"> <li>Six months on-site at the reactor for which the license is sought</li> </ul>	SRO (Degreed)	<p>Six months are achieved during the construction and testing phases on a one-for-one basis while performing one or more of the following tasks:</p> <ul style="list-style-type: none"> <li>Plant operating procedure development and verification</li> <li>Human engineering and task analysis verification</li> <li>Preoperational testing of plant systems</li> <li>Participating in the cold and hot functional testing program</li> <li>Acting as an operations classroom, simulator, or on-the-job (OJT) instructor</li> </ul>
<ul style="list-style-type: none"> <li>At least 6 weeks of operation above 20% power,</li> <li>Startup from subcritical to 20% power,</li> <li>Shutdown from above 20% power to cold (less than 212°F) and subcritical, and</li> </ul>	SRO (Degreed and Non-degreed)	<p>Completion of a plant referenced simulator course, based on a systematic analysis of the supervisory skill, knowledge, and ability required of a SRO. Coupled with high fidelity simulator training this provides assurance that the requisite knowledge, skill, and ability level has been achieved.</p> <p style="text-align: center;">or</p>

Requirement	Applicable Position	Alternative Experience Activity
<ul style="list-style-type: none"> <li>Startup preparations following a fueling or refueling outage.</li> </ul>		Completion of an observation program, based on a systematic analysis of the supervisory skill, knowledge, and ability required of a SRO. Coupled with direct observation of reactor operation this provides assurance that the requisite knowledge, skill, and ability level has been achieved.

## **B. Training Program Accreditation and Implementation**

Use the Systematic Approach to Training (SAT) to develop and implement the new plant licensed operator training programs. Initial accreditation will be obtained early in the licensed operator training phase to ensure that the analysis, design and development of the programs meet industry standards. Training program accreditation renewal will be achieved prior to fuel load and will verify the implementation and evaluation phases of the SAT process.

## **C. In-plant JPMs and On-shift OJT During Construction Phase**

Until equipment installation is sufficiently complete, use viable alternatives for performance of In-plant JPMs including but not limited to discussion, mockups, virtual presentations and part task simulation.

Until the plant becomes operational, use viable alternatives for the Main Control Room OJT (three months on-shift as an extra person) including, but not limited to preoperational testing activities, simulator time focused on crew operations or dedicated observation time in the MCR of an operating nuclear plant (See A, experience discussion above, for further information).

## **D. Simulator Training Using a Part Task/Limited Scope Simulator**

Use part task or limited scope Simulator(s) as the starting point for initial Licensed Operator simulator training. The part task or limited scope simulator would evolve into the "plant referenced, ANSI 3.5" simulator prior to the operator candidate taking a NRC license operating examination.

The part task/limited scope Simulator will meet option (3) of Reg. Guide 1.149 requirements. This simulator will be a high fidelity/quality training device that will be maintained in accordance with ANSI-3.5, 1998, section 5 and Appendix D.

The Plant-Referenced Simulator will meet 10CFR 55.4 requirements as a simulator modeling the systems of the reference plant with which the operator interfaces in the control room, including operating consoles, and which permits use of the reference plant's procedures."

The simulator models will be updated as information concerning plant design and performance is obtained. These updates will ensure the simulator is current with plant design and can be used as a realistic training tool.

The following generic training sequence shows use of part task/limited scope simulator and plant referenced simulator for licensed operator training. The actual sequence may vary depending on reactor design.

- Phase 1 (approximately 40 months prior to fuel load) - The part task/limited scope simulator is used to provide licensed operator training based on standardized design simulator modeling and operating procedures
- Phase 2 (approximately 24 months prior to fuel load) – An ANSI/ANS 3.5 (1998) plant referenced simulator is used in final phase of licensed operator initial training to perform reactivity manipulations and complete required NRC license candidate training
- Phase 3 (approximately 18 months prior to fuel load) - An ANSI/ANS 3.5 (1998) plant referenced simulator is used for performance of NRC Operator Initial License Examinations

Current Regulatory guidance (Reg. Guide 1.149 and ANSI 3.5 Appendix D) references the use and criteria that Part Task/Limited Scope simulators must meet. Therefore no change to current regulatory documents would be needed to allow the use of this type of simulator.

The NRC Form 398 Box 12.b question "Is a plant-referenced simulator (as defined in 10CFR 55.4) used in the operator training program?" may be answered affirmatively since a standardized design part task/limited scope simulator per Reg. Guide 1.149 is utilized during early phases of training and a plant referenced simulator per IOCFR 55.4 is utilized during the last phase of operator training.

#### **E. Continuing Training for License Candidates prior to NRC license exams**

Use the SAT process to determine continuing training needs for license candidates following completion of the initial phases of their licensed operator training. Provide structured continuing training to maintain the license candidates' knowledge and ability.

#### **F. Scheduling of NRC License Examinations**

Schedule NRC examinations to start approximately 18 months prior to fuel load and generally complete these initial examinations early in the preoperational testing phase. Plant construction should be sufficiently completed to support the performance of initial operator examinations. Adequate time should remain for the issuance of operator licenses to support fuel load activities with licensed operators.

## G. Licensed Operator Continuing Training

Implement an accredited licensed operator requalification program within 90 days following the issuance of the first NRC operator licenses. This will facilitate maintaining the licensed operators' knowledge and ability and meet the guidance provided in Reg. Guide 1.206 for training program and operational program implementation.

The Cold Licensing process for a new nuclear plant will terminate when the last licensing class initiated during the construction / preoperational test phases has taken a scheduled NRC License examination or the plant becomes operational, whichever is later.

### Action Item Schedule:

Action	Need by	Responsibility
Achieve common understanding of regulatory approach with NRC	Third quarter 2007	Industry and NRC
Draft revision to FSAR 13.2 template and COLA supplement to address cold licensing for COL applications	Third quarter 2007	Industry
Finalize / approve FSAR 13.2 template revision and COLA supplement	Third quarter 2007	NRC
Draft updated regulatory guidance documents	Fourth quarter 2007	NRC
Issue draft Reg. Guide 1.8 for comment	First quarter 2008	NRC
Issue revised regulatory guidance documents	First quarter 2009	NRC
Revise NuREG-1021	Second quarter 2011	NRC
Develop passive plant K&A catalogs	Third quarter 2011	NRC

The description and milestones described above provide a success path for the selection, training and licensing of operations personnel to support the safe fuel load and startup testing at each unit.



**Document Cross Reference Table**

	<b>Change Required</b>	<b>Document</b>	<b>Requirement</b>	<b>Cold License Process Reference</b>
1.	YES	Reg. Guide 1.8 Rev. 3 Exceptions to ANS 3.1	2.8 Section 4.4.1, Operations Shift Supervisor, and Section 4.4.2, Senior Operator " .... At least six months of the responsible nuclear power plant experience should be at the plant for which the instant candidate seeks a license and should not include any time spent in the control room as an extra person on shift. .... "	A.6
2.	YES – Unless you assume that 3.1 doesn't apply to cold licenses	ANS 3.1-1993 Section 4.4.1 Operations Shift Supervisor	4.4.1 Operations Shift Supervisor. The individual(s) responsible for direct supervision of plant operation. Education: High school diploma. Minimum experience for the position: Power Plant                      3Yr Nuclear Power Plant        3Yr which shall include On-site                              0.50 yr. Special Requirements: (1) Hold a Senior Operator's license for the unit(s) assigned.  (2) During the years of nuclear power plant experience, the individual shall have participated in licensed operator activities at an operating nuclear power plant during the following periods: (a) 6 months with at least 6 weeks of operation above 20% power, (b) Startup from subcritical to 20% power, (c) Shutdown from above 20% power to cold (less than 212°F) and subcritical, and (d) Startup preparations following a fueling or refueling outage.	A.6 A.9 A.10

	Change Required	Document	Requirement	Cold License Process Reference
3.	YES – Unless you assume that 3.1 doesn't apply to cold licenses	ANS 3.1-1993 Section 4.4.2 Senior Operator	<p>4.4.2 Senior Operator. The individual(s) who directly supervises the activities of licensed operators.  Education: High school diploma.  Minimum experience for the position:  Power Plant 3yr  Nuclear Power Plant 3yr  which shall include  On-site 0.50 yr.  Special Requirements:  (i) Hold a Senior Operator's license for the unit(s) assigned.  (2) During the years of nuclear power plant experience, the individual shall have participated in licensed operator activities at an operating nuclear power plant during the following periods:  (a) 6 months with at least 6 weeks of operation above 20% power, and  (b) 3 months as an extra person on shift (may be credited toward the on-site experience).  4.4.4 Training. The individual(s) responsible</p>	A.6 A.9 A.10
4.	YES – Unless you assume that 3.1 doesn't apply to cold licenses	ANS 3.1-1993 Section 4.4.3 Fuel Handling	<p>4.43 Fuel Handling. The individual(s) responsible for supervision of fuel handling and core alteration activities.  Education: High school diploma.  Minimum experience for the position:  Power Plant 3Yr  Nuclear Power Plant 3Yr  which shall include</p>	A.1 A.5 A.6

	Change Required	Document	Requirement	Cold License Process Reference
			<p>On-site 0.50 yr.</p> <p>Special Requirements:</p> <p>(1) Hold a Senior Operator's or Senior Operator's Limited to Fuel Handling license.</p> <p>(2) During the years of nuclear power plant experience, the individual shall have participated in fuel handling activities at a same type of nuclear power plant.</p>	C
5.	YES – Unless you assume that 3.1 doesn't apply to cold licenses	ANS 3.1-1993 Section 4.5.1 Reactor Operator	<p>4.5.1 Reactor Operator. (Also called Licensed Operator.) The individual(s) responsible for manipulation of plant controls, monitoring of plant performance, directing hands-on operations of equipment, and performing licensed activities.</p> <p>Reactor operators principally manipulate plant controls from the control room.</p> <p>Education: High school diploma</p> <p>Minimum experience for the position:</p> <p>Power Plant 2 Y r</p> <p>Nuclear Power Plant 1 Y r</p> <p>which shall include</p> <p>On-site 0.50 yr.</p> <p>Special Requirements:</p> <p>(1) Hold a Reactor Operator's license for unit(s) assigned.</p> <p>(2) A reactor operator shall have had 3 months of experience-as an extra person on shift</p> <p>in training before being assigned reactor operator duties.</p>	<p>A.6</p> <p>A.7</p> <p>A.9</p> <p>A.10</p> <p>C</p>

	Change Required	Document	Requirement	Cold License Process Reference
6.	Yes	ACAD 00-003 2.1 Reactor Operator (RO) Education and Experience Eligibility Requirements	2.1.2 Experience - The candidate should have at least three years of power plant experience, at least one year of which is spent at the facility for which the license is being sought. The candidate should spend at least six months as a nonlicensed operator at that site. (See Figure 2-1.)	A.7
7.	Yes	ACAD 00-003 2.2 Senior Reactor Operator (SRO) Education and Experience Eligibility Requirements	<p>Experience - All candidates should spend at least six months at the facility for which the license is being sought. Eligible candidates for senior reactor operator fall into five general categories:</p> <p>Individuals with current experience as licensed reactor operators at the candidates' site - Personnel in this group are considered "RO upgrade" candidates. (See Figure 2-2.)</p> <p>Individuals with equivalent experience as licensed reactor operators at other commercial or military reactors (Experience at other large-scale reactors may also qualify on a case basis.) - Personnel in this group are considered "direct SRO" candidates. (See Figure 2-2.)</p> <p>Individuals with engineering degrees or the equivalent and who have had experience as plant staff engineers - A plant staff engineer is considered to be anyone filling a position that places that individual in the training population of the Engineering Support Personnel accredited training program. These candidates are all "direct SRO" candidates. (See Figure 2-3.)</p>	A

	Change Required	Document	Requirement	Cold License Process Reference
			Individuals with engineering degrees or the equivalent and who have held responsible positions as line managers or supervisors or as nonlicensed operators at commercial nuclear plants – These candidates are all "direct SRO" candidates. (See Figure 2-4.) Individuals who have significant experience as senior reactor operator certified instructors involved in the training and evaluation of licensed operators at commercial nuclear plants - These individuals maintain their technical skills current through continuing training, including licensed operator continuing training, in-plant activities, and appropriate time on the simulator. These candidates are all "direct SRO" candidates. (See Figure 2-5.)	
8.	Yes	NUREG 1021 – ES202 Section D NRC License Eligibility Guidelines	..... Except as specifically noted below, experience and training are separate aspects of license eligibility. As stated in NUREG-1262 (in response to Question No. 113), a person should meet the experience guidelines before entering the license training program. Time spent in training before entering the license training program may qualify as experience, but time spent in an NRC-approved training program leading up to license eligibility should normally not be double-counted as experience.	A.1 A.2 A.4
9.	Yes	NUREG 1021 – ES202 Section D NRC License Eligibility Guidelines	1. Reactor Operator a. Experience (1) The applicant should have a minimum of 3 years of power plant experience, at least 1 of which should be spent at the nuclear power plant for which the license is sought (preferably in the performance	A.7

	Change Required	Document	Requirement	Cold License Process Reference
			<p>of non-licensed operator duties) and should not include any of the time spent in the control room as an extra person on shift.</p> <p>(2) The applicant should spend at least 6 months performing plant operational duties as a non-licensed operator at the nuclear power plant for which the license is sought.</p> <p>b. Training</p> <p>(1) Before being assigned RO duties, the applicant should complete at least 3 months as an extra person on shift in training for the RO position.</p> <p>This training should include all phases of day-to-day operations and should be conducted under the supervision of licensed personnel.</p> <p>This time should not count toward the 1-year onsite experience specified in Item D.1 (a) (1) above.</p>	<p>A.7</p> <p>A.3</p> <p>A.5</p> <p>A.9</p> <p>A.10</p> <p>C</p>
10.	Yes	NUREG 1021 – ES202 Section D NRC License Eligibility Guidelines	<p>2. Senior Reactor Operator</p> <p>a. Experience</p> <p>(1) A non-licensed (i.e., instant SRO) applicant should have a minimum of 3 years of responsible nuclear power plant experience (RNPPE), as defined in RG 1.8. At least 6 months of the RNPPE should be at the plant for which the applicant seeks a license and should not include any of the time spent in the control room as an extra person on shift. A maximum of 1 year of RNPPE may be fulfilled by academic or related technical training on a one-for-one basis.</p> <p>(2) Applicants for an SRO license who do not hold a bachelor's degree in engineering or the equivalent should have held an operator's license and should have been actively involved in the</p>	<p>A.7</p> <p>A.8</p>

	Change Required	Document	Requirement	Cold License Process Reference
			<p>performance of licensed duties for at least 1 year or have at least 2 years in a position that is equivalent (or superior) to a licensed RO at a military reactor (e.g., propulsion plant watch officer, reactor operator, engineering officer of the watch, propulsion plant watch supervisor, or engineering watch supervisor). Maintaining a minimally active operator's license pursuant to 10 CFR 55.53(e) is not sufficient to satisfy this experience guideline.</p> <p>(3) During the years of responsible nuclear power plant experience, the applicant should participate in reactor operator activities at power levels greater than 20 percent for at least 6 weeks.</p> <p>(4) The eligibility of equipment operators, plant technicians, and non-degreed licensed operator instructors, who do not satisfy the strict definition of RNPPE and might otherwise be disqualified, will be evaluated on a case-by-case basis. The NRR operator licensing program office will assess their experience to determine the degree of equivalence and amount of credit to be granted.  </p> <p>b. Training</p> <p>(1) Before being assigned SRO duties, the applicant should complete at least 3 months as an extra person on shift in training for the SRO position.</p> <p>This training should include all phases of day-to-day operations and should be conducted under the supervision of licensed personnel. This time does not count toward the 6-month onsite responsible experience guideline in Item D.2(a)(1) above. However, any portion of the 3 months that is spent at or above 20 percent power may also be used to satisfy the experience guideline in Section D.2.a(3).</p> <p>(2) If the applicant has not held an RO license at the facility for</p>	<p>A.9 A.10</p> <p>C</p> <p>D</p>

	Change Required	Document	Requirement	Cold License Process Reference
			which a license is sought, the applicant must complete the required control manipulations as discussed in Section C.1.c above. <b>Manipulations in Section C.1.c are those described in 10CFR55 – may be done on a simulator</b>	
11.	Yes	NUREG 1021 – ES202 Section D NRC License Eligibility Guidelines	3. Limited Senior Reactor Operator a. Experience The applicant should have 3 years of RNPPE that includes active participation in at least one refueling outage at the site for which the license is sought or at a similar facility. Pursuant to 10 CFR 55.31(a)(5), the applicant must perform five significant control manipulations that affect reactivity (e.g., by loading or unloading fuel into, out of, or within the reactor vessel). Six months of the RNPPE should be at the site for which the LSRO license is sought or at a similar facility owned by the same facility licensee.	A
12.	No – Assume that NRC approves accreditation process for new plants	10CFR 55.31 Operator Licenses -Applications	10CFR55.31 ..... may accept certification that the applicant has successfully completed a Commission-approved training program that is based on a systems approach to training	B
13.	No – Assume that NRC approves accreditation process for new	ACAD 02-02 Process for Accreditation of Training in the Nuclear Power Industry	Training programs will be accredited prior to fuel load or within a time frame established by INPO and the operating company senior management.	B



	<b>Change Required</b>	<b>Document</b>	<b>Requirement</b>	<b>Cold License Process Reference</b>
	plants			
14.	NA for licensed operator training – Operational program license condition will specify	10CFR50.120 Training and Qualification of Nuclear Plant Personnel	18 months prior to fuel load, whichever is later, and each nuclear power plant licensee, by November 22, 1993 shall establish, implement, and maintain a training program derived from a systems approach to training as defined in 10 CFR 55.4.	B
15.	Yes	ACAD 00-003 Guidelines for the Initial Training and Qualification of Licensed Operators	....time in the control room on-shift as an extra operator to gain operating experience.	C
16.	No – use simulator designed to meet RG 1.149(3)	ANSI-3.5-1998 App. D.	Limited Scope Simulator (LSS) used for initial training of operations and staff personnel during plant construction. Commission approval only needed if LSS is used for administering Operating exams.	D
17.	No – use simulator designed to meet RG 1.149(3)	ANSI-3.5-1998.	Plant Reference Simulator used for last phase of training and operating exams by the NRC.	D

	Change Required	Document	Requirement	Cold License Process Reference
18.	No	Reg Guide 1.149, Section A., Option 3.	LSS used for initial training of operations personnel during plant construction. Commission approval only needed if LSS is used for administering Operating exams.	D
19.	No – use simulator designed to meet RG 1.149(3)	Reg Guide 1.149 Section A, Option 1.	Plant Referenced Simulator used for operator training and operating exams by the NRC.	D
20.	No – use simulator designed to meet RG 1.149(3)	10CFR55.46 (b)	Plant Referenced Simulator will be used for operating exams by the NRC.	D
21.	No – use simulator designed to meet RG 1.149(3)	10 CFR 55.46 (c)	Plant Referenced Simulator will be used for operating exams by the NRC. Commission approval only needed if LSS is used for administering Operating exams.	D
22.	No	NRC form 398 box 12.b. 10CFR 55.31	.....Plant Referenced Simulator used for training. Commission approval only needed if LSS is used for administering Operating exams.	D

	Change Required	Document	Requirement	Cold License Process Reference
23.	No	NUREG 1021 – ES202 Section D NRC License Eligibility Guidelines	<p>4. Cold License Eligibility</p> <p>Cold examinations are those administered before the unit completes pre-operational testing and the initial startup test program as described in the FSAR. Each applicant must satisfactorily complete the training programs described in Section 13.2 of the FSAR and approved by the NRC. The NRC's review and approval are based on information contained in Section 13.2.1 of the Standard Review Plan (SRP) (NUREG-0800).</p> <p>Note: These NRC-approved training programs typically require 10 startups on a research reactor. This requirement may be waived if the applicant has completed a plant-referenced simulator training program accredited by INPO.</p>	D
24.	No	ACAD 07-001 Guidelines for the Continuing Training of Licensed Personnel	Process and content for establishing continuing training.	E
25.	No – use RG 1.206 Operational Program Implementation guidance	10CFR50.54 (i-1) Reg Guide 1.206 10CFR55.59	Time for implementing the licensed operator requalification program	G