Operator Licensing Process Position Paper

Introduction

The existing fleet of commercial nuclear plants in the United States was constructed by numerous vendors with little standardization. With many site-specific differences, plants developed their own training programs with relatively little standard training content. Currently, operator license candidates are selected by each nuclear site to participate in site-specific or unit specific (for sites that have multiple designs) operator training programs developed by the site to meet the requirements of their accredited training program and 10 CFR Part 55, *Operators' Licenses.* License candidates are granted an NRC nuclear plant Reactor Operator or Senior Reactor Operator license upon successful completion of the site program and the requirements specified in 10 CFR Part 55. The operator licensing process is designed for implementation by existing nuclear facilities that are operating at power and possess plant reference simulators. The license examination process includes written examinations and operating tests. The written examinations are administered in two sections, a generic fundamentals examination (GFE) section and a site-specific examination. The operating test includes performance tests using the plant reference simulator and walk-throughs in the plant. The site-specific written examination and the operating test are normally conducted during the same week, but may occur with up to a 30 day separation from each other. NUREG 1021 implements the requirements of 10 CFR 55 and describes specific methods for license examinations.

There are currently many combined license applications under review by the NRC. Planning for the staffing and training of licensed operators is in progress. In order to assure sufficient numbers of licensed operators are available when required to support operation of these facilities, training must commence several years before start-up activities begin. Several facilities are scheduled to begin operation within one or two years of each other; therefore, the demand for operator license examinations is expected to begin as early as 2013 and peak in the 2015 – 2017 time frame. Anticipated delays in the availability of plant reference simulators will tend to exacerbate the peak demand for licensed operator examinations. Consequently, the nuclear industry is recommending alternatives to the operator licensing process. Proposed alternatives include flexibility in the sequencing of written and operating exams and the administration of exams for multiple facilities on a common date. In addition, this paper discusses potential regulatory issues, and identifies needed changes to regulatory guidance documents to support the proposed exam process changes. Rulemaking is not expected to be required to support this process.

Problem Statement

Expectations are for 45 licensed operators to adequately staff an operating unit (75 for two units) require utilities to train and qualify license operator candidates over several years. As a result, there is an anticipated "surge" in new reactor operator license applicants in the next few years because of building new reactors. Current projections suggest 36 applicants in 2013, 156 applicants in 2014, 275 applicants in 2015, 89 applicants in 2016, and 120 applicants in 2017. In addition, existing operating plants are

expected to experience a surge in license applications to replace retirements. For reasons described below, it may not be possible to conduct operating exams for licensed operator candidates before the scheduled fuel load. Also, the work load for NRC operator license examiners may exceed capacity during the expected surge of operator license candidates. Consequently, staffing of new nuclear power plants with licensed operators may be delayed due to the current practice of administering operating exams within 30 days of the written exam. A delay in the staffing of licensed operators would result in the delay of fuel load.

As discussed in NEI 06-13A, plant reference simulators lag the completion of plant design, and operator training may be conducted for the first plants using limited scope simulators. In addition, in order to have knowledgeable operators participate in plant construction and testing, operator training must be conducted much earlier and most of it completed substantially before the plant reference simulator is available. As a result the typical training sequence may be altered due to the unavailability of a plant reference simulator early in the training program. In addition, the delay in the availability of the plant referenced simulator may cause operating exams for a facility to be conducted within one year of fuel load. Also, instructor resources may be inadequate to effectively develop examinations and prepare license candidates for NRC exams. Consequently, the current practice of conducting the site-specific written examination during the same week (maximum 30 days) as the operating test may be difficult to execute.

Proposed Process Changes

To ensure sufficient numbers of licensed operators are available to support fuel load, the NEI New Plant Training Task Force proposes the following changes to the administration of the operator licensing process for next generation reactors:

1. Allow variable sequencing and separation between the site specific examination and the operating test portions of the examination. Allow the separation to be increased from 30 days to 24 months.
2. Allow site specific written examinations to be developed, approved, and administered to license candidates for all similar reactor types on the same day.

The existing operator licensing and training process is shown on Attachment A, and the proposed operator licensing and training process is shown on Attachment B.

Process Change Benefits

1. Allow variable sequencing and separation between the site specific examination and the operating test portions of the examination. Allow the separation to be increased from 30 days to 24 months.
    - Site specific written exam would maintain high quality while minimizing resource constraints on both the NRC and facility licensees.

- Eliminates need for the NRC to develop approval process for use of a limited scope simulator for operating exam
- Site specific written exams could be provided at predictable intervals, such as biannual thus allowing NRC resources to be leveled
- Allows instructor teams to remain intact throughout the program and allows student ratios to be maintained at an optimum level throughout the program thus improving training effectiveness
- Allows candidates to be tested in sequence with the training program thus reducing candidate stress

2. Allow site specific written examinations to be developed, approved, and administered to license candidates for all similar reactor types on the same day.
    - Increases the number of examined candidates to NRC resource ratio
    - Enhances the 'Uniform Condition' clause of the Atomic Energy Act
    - Fewer exams to develop, approve, proctor, thus easing exam security concerns
    - Reduces licensee resources devoted to development of site-specific written examination
    - Provides opportunities to develop a 'closed' exam bank

Process Change Risks and Mitigating Strategies

1. Allow variable sequencing and separation between the site specific examination and the operating test portions of the examination. Allow the separation to be increased from 30 days to 24 months.
    - May decrease comprehensive examination validity
    - Currently, the FAA allows up to 2 years between the written examination for a pilot rating and the operational examination.Increases difficulty of maintaining examination section content overlap within acceptable limits
        - Examination development procedures would be reviewed and updated as necessary to ensure exam developers reviewed all applicable exams to maintain overlap within acceptable limits
    - May increase difficulty of maintaining examination security
        - Examination security procedures would be reviewed and updated as necessary to account for the revised process
    - Reduced opportunity for license candidates to appeal results of the written examination
        - Under this proposal, license candidates would take the site-specific written examination before formally applying for a

license, thus the need for appeals would be eliminated. If a candidate failed the exam the candidate could retake an exam after remediation.

- Increased training burden on utilities from earlier placement of licensed operator candidates in a continuing training program
    - License candidates would begin an operator license continuing training program within 90 days of taking the site-specific written exam. Utilities already plan to initiate a continuing training program early in the licensed operator training program.

2. Allow site specific written examinations to be developed, approved, and administered to license candidates for all similar reactor types on the same day.
    - May increase difficulty of maintaining examination security
        - Examination security procedures would be reviewed and updated as necessary to account for the revised process
    - Utility commitment to standardized examination reference material
        - Utilities are committed to standardization as evidenced through the formation of the Design Centered Working Group (DCWG) and the Advanced Passive Owners Group (APOG)

Implementation

Some utility training implementation schedules anticipate the need for a written examination as early as the second quarter of 2013. To support this need, the industry would work with the NRC to revise the process with the following proposed milestone schedule:

2009 – NRC and industry agree in principle with process change (approve position paper)
2010 – NRC and industry develop revisions to NUREG 1021 and NRC Form 398
2011 – Public comment on changes to NUREG 1021 and NRC Form 398
2012 (First Quarter) – NRC publishes revision to NREG 1021 and NRC Form 398

Compensatory Actions for Process Change Risks

The following table addresses potential process change risks and concerns raised during preliminary discussions held with the NRC staff in public meetings.

Potential Risk/Concern	Regulatory Basis	Action
2 year gap is too long	The Atomic Energy Act of 1954 requires the NRC to provide for uniform conditions for the licensing of operators. 10 CFR 55 is silent on the time allowed between a written exam and the operating exam. NUREG 1021 specifies that to exceed 30 days, NRR must be involved	The NRC has the authority to set uniform conditions that would allow a gap of up to two years between the written examination and the operating test. Current NRC guidance allows two years to elapse between the Generic Fundamentals Exam and the final site specific exam which may be extended beyond two years by the NRC on a case by case basis. Note: Currently, the FAA allows up to 2 years between the written examination for a pilot rating and the operational examination.
Gap allows training to be narrowly focused – may be better for training but not for evaluation	Not directly addressed by regulation or regulatory guidance	The industry agrees that this is a better process from a training perspective. The industry does not believe separating the written examination from the operating test diminishes the validity of the qualification process.
Examination must be comprehensive	Content of the written examination is specified by 10 CFR 55.41 and 10 CFR 55.43	The degree of standardization for new generation plants is expected to be extensive, the written exam would continue to be comprehensive in that all requirements of 55.41 and 55.43 would be met
Having a bulk exam makes security difficult	Examination Integrity requirements are specified in 10 CFR 55.49. 10 CFR 55.49 requirements are implemented throughout NUREG 1021	The industry believes that common exam security issues would be readily handled with existing procedures and policies
Would have to consider overlap with operational exam differently	The issue of overlap is not covered in 10 CFR 55, but is discussed in several sections of NUREG 1021. These discussions are in the form of verification that overlap between examination sections is within acceptable limits	The operating exam developer and reviewer would have to have access to the candidates written exam to ensure overlap was not an issue, and exam development procedures would be upgraded to ensure overlap is not an issue

Potential Risk/Concern	Regulatory Basis	Action
The uniform conditions requirement of the Atomic Energy Act would need to be explored. The longer gap allow could provide candidates the ability to appeal if their utility chose not to allow the full 2 year gap while another utility chose to allow the full 2 year gap.	10 CFR 55.33 and 10 CFR 55.35 provide the regulation regarding license applications and re-applications. 10 CFR 55.35(a) provides time frames for re-applying if an application is denied. 10 CFR 55.35(b) provides permission to retake only those parts of the examination that were failed, but does not provide a limit on time. 10 CFR 2.103(b)(2) provides that an applicant may appeal a denial within 20 days of denial. NUREG 1021 Section 202 implements the regulation, but further defines a time limit of two years for allowing a waiver for retake of passed sections of the exam	The industry is proposing that the written examination be administered before a candidate applies for a license. The processes would be analogous to the GFE. The facility would certify that the candidate is enrolled in an operator license training program. A candidate would have the option of retaking a written exam after remediation, but would not have rights of appeal since no denial letter would have been issued. The concept is that the process for the GFE would be expanded to the entire written exam.
How would an examination failure be remediated?	See above	See above
The NRC had a comment or suggestion to consider a license good below 5% power and then take a comprehensive examination prior to exceeding 5%.	N/A	Would require rulemaking and rulemaking is outside the scope of this position paper
The application form would need revision to match the white paper process.	Application forms are 398 and 396 which are referenced throughout 10 CFR 55	398 needs to be revised to incorporate NEI 06-13A provisions and would potentially need additional modification for the proposed revisions regarding the written exam.

Potential Risk/Concern	Regulatory Basis	Action
The white paper needs to consider and address the risk associated with a common examination and a 2 year gap extension. As written it only acknowledges benefits.	10 CFR 55 NUREG 1021 references Chapter 11 of the 1985 version of the Standards for Educational and Psychological Testing	The proposed process does not conflict with 10 CFR 55. The risk is that the evaluation process would reduce the evaluation validity. There is no evidence that segmenting the qualification process reduces the validity of the process
What will be the appeal rights of the applicant in bulk examinations? Considering the examination could impact several utilities.	10 CFR 55 and 10 CFR 2.103(b)(2)	The process would be analogous to the GFE process and since the written exam would be administered before an application was made, no appeal process would exist
The white paper needs to consider the make-up of the examination.	10 CFR 55.41 and 10 CFR 55.43 provide regulations regarding written exam content. NUREG 1021 Sections 401, 402, and 403 implement the requirements of 10 CFR 55.41 and 10 CFR 55.43	The degree of standardization within the new plant vendor design is expected to be high. The examination would continue to contain all elements of the existing exams and be in compliance with the regulations.
Will the use of a common examination require a rule change? The NRC prefers to avoid rule changes for the common examination.	10 CFR 55	The industry proposals will not require a rule change
When would this common examination process become effective and when would it be retired?	NA	The industry proposes that this process become effective in 2013 and be treated as a pilot process for permanent revision to the process.
Who would write the examination? The white paper does not address how the examination would be developed and approved.	10 CFR 55.40(b) allows the facility to prepare, administer, and grade the written examination. NUREG 1021 Section 401, 402, and 403 implement the requirements of 10 CFR 55.40(b)	The industry proposes to write, administer, and grade the written exam.

Regulatory Analysis

1954 Atomic Energy Act

Section 107, Operators' Licenses, of the 1954 Atomic Energy Act states:

The Commission shall:

a. prescribe uniform conditions for licensing individuals as operators of any of the various classes of production and utilization facilities licensed in this Act;

b. determine the qualifications of such individuals;

c. issue licenses to such individuals in such form as the commission may prescribe; and

d. suspend such licenses for violations of any provision of this Act or any rule or regulation issued thereunder whenever the Commission deems such action desirable.

Section 202 of 1974 Energy Reorganization Act extends the NRC's authority regarding operator licensing activities to additional nuclear facilities such as demonstration liquid metal fast breeder reactors and facilities used for the storage of high-level radioactive waste.

10 CFR 55:

10 CFR 55 implements the requirements of Section 107 of the 1954 Atomic Energy Act, which specifies that the NRC will provide for uniform conditions for licensing operators of nuclear power plants, determine their qualifications, issue licenses, and suspend licenses for cause as necessary.

All paragraphs of 10 CFR 55 will not be discussed here. Paragraphs of 10 CFR 55 that have implications for developing and administering the written exam are addressed in this paper

Paragraphs of 10 CFR 55 related to written examinations include Paragraph 55.33 which requires written and operating tests be administered.

Section 55.40(a) requires the NRC to use the revision of NUREG 1021 in effect 6 months prior to scheduled exam to prepare written and operating exams and evaluate the results of the exams. Section 55.40(b) allows the licensee to prepare, proctor, and grade the written exam. Section 55.40(c) allows the facility to have the NRC develop, proctor and grade the written examination and allows the NRC to reject an applicant's request to preparing the written or operating examination.

Paragraphs 55.41 and 55.43 provide requirements related to the content of written exams.

Paragraph 55.47 allows the NRC to waive requirements related to written and operating examinations, but the conditions of the paragraph may preclude its use for new plants.

Examination requirements may be waived only on a case by case basis and only if the applicant has extensive actual experience at a comparable facility.

Paragraph 55.49 provides requirements related to exam integrity. Note: There does not appear to be any regulatory barrier to allowing for common reactor type written exams and allowing the site specific written exam to be administered more than 30 days prior to the operating exam.

Other paragraphs of 10 CFR 55 that may have implications for operator licensing include:

55.45 requires that a plant walkthrough be part of the operating exam.

Subsection 55.46(c)(2)(i) requires the core model to replicate the most recent core load.

Section 55.53(e) provides requirements for maintaining an active license

Regulatory Guidance Analysis

Regulatory Guide 1.8, *Qualification and Training of Personnel for Nuclear Power Plants*, provides guidance that is acceptable to the NRC staff regarding qualifications and training for nuclear power plant personnel. RG 1.8 endorses ANSI/ANS-3.1-1993, *Selection, Qualification, and Training of Personnel for Nuclear Power Plants,* with certain clarifications, additions, and exceptions. RG 1.8 notes that Subpart D, "Applications," of 10 CFR Part 55, *Operators' Licenses*, requires that operator license applications include information concerning an individual's education and experience and other related matters. However, RG 1.8 does not provide guidance directly related to written examinations and thus does not impact this position paper.

Regulatory Guide 1.149, *Nuclear Power Plant Simulation Facilities for Use in Operator Training and License Examinations*, describes methods acceptable to the NRC staff for complying with those portions of the NRC's regulations associated with approval or acceptance of a simulation facility for use in reactor operator and senior reactor operator training and NRC license examinations.
In 10 CFR Part 55, "Operators' Licenses," Paragraphs 55.45(a) and 55.45(b) require that an applicant for an operator or senior operator license demonstrate both an understanding of and the ability to perform certain essential job tasks. The operating test would be administered in a plant walk-through and on a simulation facility or on the actual plant if approved by the Commission.

A simulation facility as defined in 10 CFR 55.4 means one or more of the following components, alone or in combination, used for the partial conduct of operating tests for operators, senior operators, and license applicants or to establish on-the-job training experience prerequisites for operator license eligibility: (1) a plant-referenced simulator, (2) a Commission-approved simulator in accordance with 10 CFR 55.46(b), or (3) another simulation device, including part-task and limited scope simulation devices approved under 10 CFR 55.46(b).

The requirements for the use of a simulation facility for the administration of the operator licensing operating test are in 10 CFR 55.46, as are the requirements for the use of a

plant-referenced simulator for fulfilling a portion of the experience requirements for applicants for operator and senior operator licenses. The requirements for the licensed operator requalification programs, including evaluation, are in 10 CFR 55.59(c)(3) and (4).

Although RG 1.149 is not directly applicable to the written portion of an operator license examination, it is a key RG for the operating portion of the operator license examination.

Regulatory Guide 1.134, *Medical Evaluation of Licensed Personnel at Nuclear Power Plants,* describes a method acceptable to the NRC staff for providing the information needed by the staff for its evaluation of the medical qualifications of applicants for initial or renewal of operator or senior operator licenses for nuclear power plants and for providing notification to the NRC of an incapacitating disability or illness. RG 1.134 does not apply to the written portion of the operator license examination process.

NUREG-1122, *Knowledge and Abilities Catalog for Nuclear Power Plant Operators, Pressurized Water Reactors*, provides the basis for the development of content-valid licensing examinations for reactor operators (ROs) and senior reactor operators (SROs). The examinations developed using the PWR Catalog along with the Operator Licensing Examination Standards for Power Reactors (NUREG-1021, Rev. 9, Supplement 1) will sample the topics listed under Title 10, Code of Federal Regulations, Part 55 (10 CFR 55). NUREG-1122 is a pertinent regulatory guidance document related to written operator license exams, but will be re-written for advanced passive light water reactors and will be revised to reflect technological advances used in other advanced PWR designs. These changes will be accomplished under a separate NEI sponsored project. Thus NUREG-1122 does not have a direct impact on this position paper.

NUREG-1123, *Knowledge and Abilities Catalog for Nuclear Power Plant Operators, Boiling Water Reactors*, provides the basis for the development of content-valid licensing examinations for reactor operators (ROs) and senior reactor operators (SROs). The examinations developed using the BWR Catalog along with the Operator Licensing Examination Standards for Power Reactors (NUREG-1021, Rev. 9, Supplement 1) will sample the topics listed under Title 10, Code of Federal Regulations, Part 55 (10 CFR 55). NUREG-1123 is a pertinent regulatory guidance document related to written operator license exams, but will be re-written for advanced passive light water reactors and will be revised to reflect technological advances used in other advanced BWR designs. These changes will be accomplished under a separate NEI sponsored project. Thus, NUREG-1123 does not have a direct impact on this position paper.

NUREG-1220, *Training Review Criteria and Procedures*, provides direction to NRC personnel for reviewing training programs at nuclear power plants to verify compliance with the requirements of 10 CFR 50.120 and 10 CFR 55 as applicable. It describes the process for evaluating the effectiveness of training programs, provides aids for collection of information during interviews and observations, and provides criteria for evaluating the implementation of a systems approach to training. NUREG-1220 is not directly pertinent to the operator licensing written examination process.

NUREG-1262, *Answers to Questions at Public Meetings Regarding Implementation of Title 10, Code of Federal Regulations, Part 55 on Operators' Licenses*, provides historical information about the public meetings that were held in 1987 when revisions of the subject regulations were implemented. Although NUREG-1262 provides clarification

of the regulations for issuing licenses to operators and senior operators, including information about written examinations and operating tests, requirements for a plant reference simulator, and the form and content for operator license applications; the information is dated and NUREG-1262 does not have a direct impact on this position paper.

NUREG-1021, *Operator Licensing Examination Standards For Power Reactors*, establishes the policies, procedures, and practices for examining licensees and applicants for reactor operator and senior reactor operator licenses at power reactor facilities pursuant to Title 10, Part 55, of the Code of Federal Regulations (10 CFR 55). NUREG-1021 is the principal document that establishes NRC policies and processes related operator license examinations and thus would require revision to implement the recommendations of this position paper regarding written operator license examinations. A detailed sectional analysis of NUREG 1021 follows:

Section	Title	Revision Required	Affected Subsections	Basis
	List of abbreviations	Possible	NA	The list should be reviewed after mark-ups of the NUREG are completed to determine if changes are required
ES-101	Purpose And Format Of Operator Licensing Examination Standards	No	NA	NA
ES-102	Regulations and Publications Applicable to Operator Licensing	Yes	4; xx; yy	4 - For Part 52 licenses requalification must commence 90 days after fuel load. xx and yy – Need to be updated to reflect new KA catalogs for advanced passive light water reactors.
ES-201	Initial Operator Licensing Examination Process	Yes	C.3.j	If the written exam date is separated from the operating test by more than 30 days – NRR program office must approve

Section	Title	Revision Required	Affected Subsections	Basis
ES-202	Preparing and Reviewing Operator Licensing Applications	Yes	B; C.1.a; C.1.b; D.4	B – Update to reflect cold license process; C.1.a – 398 to be used – propose a new process that would not require completion of all training and qualification before taking the written examination – supplement to 398 perhaps – certify completion of applicable classroom training (courses) before applying for the written exam. Will also need to address written exam failure retake process – medical exam now or later? C.1.b – revise to provide that applying for a written exam within 24 months of GFE satisfies this section; D.4 – Cold license eligibility should reference NEI 06-13A
ES-204	Processing Waivers Requested By Reactor Operator and Senior Reactor Operator Applicants	No	NA	NA – Waivers apply to individual candidates and not to the process itself.
ES-205	Procedures for Administering the Generic Fundamentals Examination Program	No	NA	NA – may want to use this section as a model for administering generic vendor related written examinations
ES-301	Preparing Initial Operating Tests	Yes	D.1.g	D.1.g – suggests the operating test should be conducted on both units of a multi-unit site – difficult to do as second unit may be several years behind initial unit – should not be an issue due to level of standardization

Section	Title	Revision Required	Affected Subsections	Basis
ES-302	Administering Operating Tests to Initial License Applicants	No	NA	NA
ES-303	Documenting and Grading Operating Tests	No	NA	NA
ES-401	Preparing Initial Site-Specific Written Examinations	Yes	B; C.2.b	B – Background suggests the written exam is given in two sections – GFE and site specific. We may be adding a third – generic vendor type written. C.2.b – only allows 30 day margin between written and operating exams
ES- 403	Grading Initial Site-Specific Written Examinations	No	NA	NA
ES-501	Initial Post-Examination Activities	Yes	B	B – Goal of the NRC is to complete licensing or denial within 30 days of grading exam. This section should be modified to meet the provisions of NEI 06-13A which provides for the NRC to issue the license well after the examination process. This section would require a general re-write to reflect a revised process
ES-502	Processing Requests for Administrative Reviews and Hearings after Initial License Denial	Yes	B	B – General re-write because review and/or re-take of the written exam should occur before license denial
ES-601	Conducting NRC Requalification Examinations	No	NA	NA
ES-602	Requalification Written Examinations	No	NA	NA
ES-603	Requalification Walk-Through Examinations	No	NA	NA

Section	Title	Revision Required	Affected Subsections	Basis
ES-604	Dynamic Simulator Requalification Examinations	No	NA	NA
ES-605	License Maintenance, License Renewal Applications, and Requests for Administrative Reviews and Hearings	Yes	C.2	C.2 – It is not clear how operators will maintain active licenses before fuel load. This section should be clarified for cold licenses.
ES-701	Administration of Initial Examinations for Senior Operators Limited to Fuel Handling	No	NA	NA
ES-702	Administration of Requalification Examinations for Senior Reactor Operators Limited to Fuel Handling	No	NA	NA
Appendix A	Overview of Generic Examination Concepts	Yes	All	Some of the concepts in this section contribute to the differences between the NRC and the industry regarding the difficulty level of written examinations. This section should receive a comprehensive and cross disciplinary review and comments should be provided to the NRC
Appendix B	Written Examination Guidelines	Yes	All	Some of the concepts in this section contribute to the differences between the NRC and the industry regarding the difficulty level of written examinations. This section should receive a comprehensive and cross disciplinary review and comments should be provided to the NRC

Section	Title	Revision Required	Affected Subsections	Basis
Appendix C	Job Performance Measure Guidelines	No	NA	NA
Appendix D	Simulator Testing Guidelines	No	NA	NA
Appendix E	Policies and Guidelines for Taking NRC Examinations	No	NA	NA
	Glossary	Possible	NA	The list should be reviewed after mark-ups of the NUREG are completed to determine if changes are required

Industry Standards Analysis

ANSI/ANS 3.1, *American National Standard for Selection, Qualification, and Training of Personnel for Nuclear Power Plants*, provides criteria for selecting and training nuclear power plant employees who perform a variety of functions at various levels of responsibility (e.g., managers, supervisors, operators, and technicians). RG 1.8, Revision 3 (May 2000) endorses the 1993 version of this standard, with additions, exceptions, and clarifications thereto. ANS 3.1 is currently being revised under the sponsorship of NEI and the proposed changes would not impact issues discussed in this position paper.

ANSI/ANS 3.4-1996, *Medical Certification and Monitoring of Personnel Requiring Operator Licenses for Nuclear Power Plants*, is the basic document covering the general health and disqualifying conditions applicable to license applicants and licensed personnel. Revision 3 of RG 1.134 currently endorses this standard, with exceptions. ANS 3.4 does not impact issues discussed in this position paper.

ANSI/ANS 3.5-1998, *Nuclear Power Plant Simulators for Use in Operator Training*, establishes the minimum functional requirements and capabilities for nuclear power plant simulators for use in operator training. Revision 3 of RG 1.149 endorses this standard, with clarifications. ANS 3.5 is currently under revision but is not expected to impact issues discussed in this position paper.

Training Guidance/Accreditation Analysis

ACAD 09-001, *Guidelines for Initial Training and Qualification of Licensed Operators*, when used in conjunction with plant-specific job and task analyses, provides the framework for a training and qualification program for reactor operators and senior reactor operators at nuclear power plants.
The guideline addresses the following:

- the licensing of reactor operators and senior reactor operators for operating existing nuclear power plants

- the licensing of reactor operators and senior reactor operators for initial startup and operation of newly constructed nuclear power plants (cold licensing)

With the exception of a brief discussion related to license exam preparation, ACAD 09-001 does not affect the issues discussed in this position paper.

Summary

To alleviate an expected surge in the demand for operator licensing exams, the industry is proposing revisions to the operator licensing examination process. The proposed changes include:

1. Allow site specific written examinations to be developed, approved, and administered to license candidates for all similar reactor types on the same day.
2. Allow the separation between the plant-design written examination, the site-design written examination, and the operating test portions of the examination to be increased from 30 days to 24 months to support earlier training on design-based topics and then experience during construction. The requalification requirements of 10 CFR 55 would be met for the portion of the examination process completed.

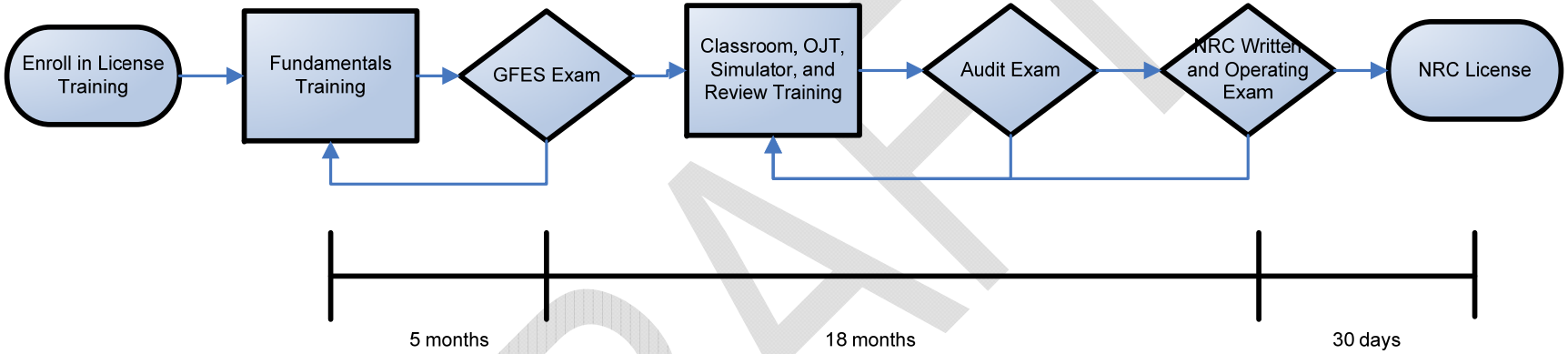
The existing operator licensing and training process is shown on Attachment A and the proposed operator licensing and training process is shown on Attachment B. The proposed changes can be made without rulemaking. The proposed changes would require a revision to NUREG 1021 and NRC Form 398.

The industry will work with the NRC to address NRC concerns, draft revisions of guidance documents, and support any required public comment and review.

The industry needs the revised process to be in place by the second quarter of 2013.

Attachment A

Existing License Training and Examination Process



Attachment B

Proposed License Training and Examination Process