NEXTera ENERGY

L-2016-047

2/5/2016
81 FR 6301-1
(17)

ATTN: Cindy Bladey
Office of Administration
Mail Stop: OWFN-12-H08
U.S. Nuclear Regulatory Commission
Washington, DC 20555–0001

Subject: Comments on Draft Revision 11 to NUREG-1021, "Operator Licensing Examination Standards for Power Reactors" (Docket ID NRC-2016-0006)

Florida Power & Light Company for itself, the licensee for the St. Lucie Nuclear Plant, Units 1 and 2, and the Turkey Point Nuclear Plant, Units 3 and 4, and on behalf of NextEra Energy Seabrook, LLC (NextEra Energy Seabrook) the licensee for Seabrook Station; NextEra Energy Duane Arnold, LLC (NextEra Energy Duane Arnold), the licensee for Duane Arnold Energy Center; and NextEra Energy Point Beach, LLC (NextEra Energy Point Beach), the licensee for Point Beach Nuclear Plant, Units 1 and 2 (collectively referred to as NextEra Energy), hereby submit comments on the Draft NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," published in the Federal Register on February 5, 2016 (81 FR 6301).

In addition to the attached comments, NextEra endorses the comments provided by the Nuclear Energy Institute (NEI) on this subject, and offers the attached supporting comments.

We appreciate the NRC's consideration of NextEra's comments.

Sincerely yours,

Larry Nicholson
Director, Nuclear Licensing and Regulatory Compliance

Attachment (3)

SUNSI Review Complete
Template = ADM – 013
E-RIDS= ADM-03
Add= M. Scheetz (MCS7)
T. Kolb (TCK)

FPL/NextEra Energy Comments on Draft Revision 11 to NUREG 1021

Attachment 1 - General Comments

Section of 1021	Proposed Change	Issue	Recommendation
ES-303, D.1.d	Clarification that there is no limit to the number of rating factors for a single performance deficiency. (non-critical error)	Multiple potential issues: opens up the grading process to greater examiner subjectivity, double jeopardy, and potentially more appeals.	A non-critical performance deficiency shall be documented in one competency and a single rating factor. If it is necessary to document the error in a second competency or rating factor, the basis must be documented appropriately.

FPL/NextEra Energy Comments on Draft Revision 11 to NUREG 1021

Attachment 1 - (cont.)

Section of 1021	Proposed Change	Issue	Recommendation
ES-303, D.2.b and elsewhere	Change grading scale from 1-3 to 0-3.	Multiple issues with this proposed change. For example: expands the grading scale and this by itself makes the grading more subjective, it only expanded the grading scale to the negative side of the passing grade (< 1.8) so this will automatically result in more operational examination failures. Given that there is broad agreement that the current grading scheme is adequate to determine between competent and non-competent operators, there is no justification to arbitrarily alter the grading scale downward without adjusting the pass criteria. Currently both the NRC and the Industry has stated there are no safety issues with any individuals currently holding licenses. So why the need to raise the requirements for passing the exam?	Recommendation #1: Leave the grading scale at the current scale of 1-3. Recommendation #2: Add to the scale evenly to both sides of the passing scale. Expand the scale to 0-4 and change the passing threshold to 2.0.

FPL/NextEra Energy Comments on Draft Revision 11 to NUREG 1021

Attachment 1 - (cont.)

Section of 1021	Proposed Change	Issue	Recommendation
ES-303, D.2.b	The proposed draft eliminates the allowance to give points back for non-critical errors.	This allowance was necessary to give an examiner the ability to give a candidate back a point who made a few minor performance deficiencies (non-critical error) but provided evidence to the examiner that the candidate is competent in the given rating factor/competency.	Recommendation #1: Retain the wording from revision 10 and/or the interim guidance. Recommendation #2: If necessary provide additional guidance in the NUREG on how to implement giving a point back. For example: If a candidate has many opportunities (>7) to demonstrate competence in a competency/rating factor during the operational examinations and the examiner has adequate examples that the candidate has competence in the competency/rating factor then the examiner may give a point back in the rating factor.
ES-303, D.2.b	In the draft revision the deduction for a missed critical task is being increase from 2 to 3 points.	Depending on other changes a 2 or 3 point deduction may be appropriate. In most cases a 2 point deduction would also be accompanied by other non-critical errors in the rating factor or competency so a failing grade would result.	Recommendation #1: Leave the current deduction for a missed critical task at 2 points. Recommendation #2: Have two choices for deduction of points for a critical task. Normally a 2 point deduction but in the case when a candidate's actions result in core damage or a significant increase to the safety and health of the public then a deduction of 3 points is required.

FPL/NextEra Energy Comments on Draft Revision 11 to NUREG 1021

Attachment 1 - (cont.)

Section of 1021	Proposed Change	Issue	Recommendation
ES-201 C.1.f	The proposed draft includes discussion on the NRC generating written exam outlines	Currently there is an initiative to develop a National Exam Bank of written questions that the industry will maintain. This exam bank will also include an automatic exam outline generator. Once the project is complete, the draft wording will prevent allowing the NRC or Utility from using the automatic exam outline generator in concert with the National Exam Bank.	Provide an option for NRR office to decide to change whether or not the NRC will continue to develop written outlines without necessitating a revision to NUREG-1021.
ES-401 D.2.f Bullet 2	The draft includes, "...randomly select from among the available questions..."	Randomly selecting among the available questions is not necessary in that the K/A has already been randomly selected during the outline generation process. The K/A selection process maintains the randomness of the exam and ensures the exam is not predictable.	Remove this bullet from the draft revision of the document.

FPL/NextEra Energy Comments on Draft Revision 11 to NUREG 1021

Attachment 2 - Recommendations for Generic Fundamental Examination

Summary:
ML16077A223 proposes reducing the number of NRC Generic Fundamental Exams (GFE) from four annually to two annually. While this initiative offers a reduction in cost for the development and implementation of GFE for the NRC there are several unintended consequences, to both the NRC and the industry. These unintended consequences include necessitating license program start dates from 4 times per year to 2 times per year based on NRC GFE exam dates. This would result in a compression of final NRC exam dates, affecting both NRC resources and utility resources. This can add additional cost to the industry as there will be less opportunity to share resources across the industry and individual fleets which will increase the amount of overtime required by station personnel or will increase use of contractors to support the development of NRC exams.

This position paper is intended to provide several potential solutions to mitigate these consequences and at the same time reduce exam development and implementation cost for the NRC. Any of the options below or a combination of the options could be implemented by June 2017, if necessary. This would allow for the NRC to give the December 2016 exam and the March 2017 exam which would meet the two proposed GFE administrations in the next fiscal year.

Abstract:
10 CFR 55, Operator Licenses, defines the contents of a station's license training program. In order to meet the CFR, a station must:

- Use a systems approach to training (SAT) to determine the training program content
- Administer written and operating examinations that contain a "representative selection of questions of the knowledge, skills and abilities needed to perform license operator duties" derived from the afore-mentioned SAT process and sampling specific items as defined in 10 CFR 55.41, 43, and 45.

10 CFR 55.41-45 are specific with regards to reactor theory, and the principles of heat transfer and fluid mechanics.

By utilizing the SAT process, license candidates gain all the practical fundamental knowledge necessary to operate the facility. For example:

- As part of performing reactivity manipulations and manipulating the controls required to operate the facility between shutdown and designated power levels a candidate demonstrates that they understand how to control reactivity effects.
- As part of being trained on normal operations in the simulator and classroom, a candidate demonstrates that they understand how to control the heat transfer and fluid mechanics that occur in various systems.

FPL/NextEra Energy Comments on Draft Revision 11 to NUREG 1021

Attachment 2 - (cont.)

The eligibility requirements for entering the license training program are prescribed by NRC form 398 and defined by NUREG 1021. These documents describe the prerequisite knowledge and experience necessary to qualify to obtain an operating license. These requirements require either previous nuclear operations experience or an engineering degree and plant experience. By requiring license candidates to have this education and experience, candidates likely have all of the practical math and science knowledge, with the exception of reactor theory, necessary to be competent operators. Any operational fundamental knowledge necessary is already be identified via the SAT process and built into the station's license training program. In essence, administering a separate fundamentals exam could be considered mostly redundant to the current SAT program and eligibility requirements.

With the aforementioned guidance in mind, there are several alternative solutions to the current method for meeting CFR requirements for license candidate fundamental knowledge evaluation. Any of these options, allowing several options or a combination of the options, could be a better solution to reduce overall cost and at the same time ensuring the high standards to educate and qualify license operators will remain in place for the ultimate goal of protecting the health and safety of the general public.

1. Eliminate the stand alone GFE and include a representative sample of generic fundamental knowledge's as part of the NRC license written exam.

2. Add generic fundamentals as part of the education requirement for eligibility to enter a license program and sample generic fundamental knowledge as part of the NRC license written exam.

3. Develop an on-demand examination for GFE maintained by either the NRC or the industry.

<u>Option 1: Eliminate the standalone GFE and include a sample of generic fundamental knowledge's as part of the NRC license final written exam.</u>

Justification: Operator Training programs are required by 10 CFR 55.4 to be based on a Systems Approach to Training. INPO ACAD 10-001, Guidelines for Initial Training and Qualification of Licensed Operators, contains guidance for the basis of the training program. This guidance includes the generic fundamental topics that are also contained in the K/A catalogs (NUREG 1122/1123) which link the topics to the 10 CFR 55.41 and 10 CFR 55.43 attribute, as applicable. Based on these requirements, this knowledge is required to be taught and examined as part of the site specific training program. In addition, both the Utility and INPO periodically review and assess training program content; specifically evaluating for training program compliance with the ACAD requirements.

FPL/NextEra Energy Comments on Draft Revision 11 to NUREG 1021

Attachment 2 - (cont.)

Currently, NUREG 1021, ES-401 requires that the written license examination be provided in two sections and that it samples the 14 items in 10 CFR 55.41(b). Because the GFE topics are evaluated in the 50-question standalone Generic Fundamentals Exam, they are significantly oversampled considering the remaining topics are sampled in the 75-question Reactor Operator (RO) written examination.

To ensure that fundamentals are appropriately sampled for the licensing examination, the written examination outlines of ES-401 (skyscraper) could be modified to prescribe fundamentals sampling, gearing questions toward operational relevance. The existing (skyscraper) ES-401 could be modified to sample 3-5% of the 75 RO written questions based on the existing K/A catalog which would be in line with the percentage of 10 CFR 55.41 (b) (1) and (14) K/As. The other option would be to leave the skyscraper as it currently is but require the exam developer to ensure that 3 to 5% of the questions require 10 CFR 55.41 (b) (1) and (b) 14) knowledge to correctly answer the question.

The current K/A guidance allows for the evaluation of generic fundamental topics. Examples of K/A statements that test on 10 CFR 55.41(b) (1) and (14):

- Poison Effect
  - 001 Control Rod Drive System (CRDS) K5.13 Knowledge of the following operational implications as they apply to the CRDS: "Effects of past power history on xenon concentration and samarium concentration"
  - 001 CRDS A2.06 Ability to (a) predict the impacts of the following malfunction or operations on the CRDS and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: "Effects of transient xenon on reactivity"
- Criticality Indication
  - 015 Nuclear Instrumentation System K5.05 Criticality and its indications and K5.06 Subcritical multiplications and NIS indications.
- Reactivity Coefficients
  - 001 CRDS K5.02 Application of differential rod worth and integral rod worth
  - 001 CRDS K5.82 Interpretation of differential and integral boron worth curves

FPL/NextEra Energy Comments on Draft Revision 11 to NUREG 1021

Attachment 2 - (cont.)

- Thermodynamics and Fluid Mechanics
  - EPE 029 Anticipated Transient Without Scram (ATWS) EK1.01 Reactor knowledge of operational implications and/or cause and effect relationships as applied to ATWS for: nucleonics and thermo-hydraulic behavior
  - EPE 074 Inadequate Core Cooling EA2.01 Ability to determine and/or interpret the following as they apply to Inadequate Core Cooling: Subcooling Margin

Benefit: NRC benefits would be the elimination of a redundant examination and reduction in administration of request for individuals taking the GFE. All CFR-required written examination requirements for the initial candidate can be met with a single comprehensive written exam.

Risk: Marginal. A SAT based approach would still require relevant fundamentals based learning objectives to be present in a training program. Additionally, candidates will already have the strictly theory based fundamental knowledge based on the program requirements and will gain the operational fundamental based knowledge through the site specific license training programs. While no longer requiring a GFE specific exam, GFE knowledge would still be sampled on an NRC exam.

Risk Mitigation: By utilizing a SAT based approach to ensure all relevant fundamentals based learning objectives are present in the site specific training program; all required knowledge would still be taught and evaluated to license candidates. This would result in program examinations, in addition to the final NRC exam, ensuring the mastery of fundamental topics.

Change required: Changes to NUREG-1021 that may be required to implement this recommendation include:

- Revising ES-401 Preparing Initial Site-Specific Written Examinations, sample plan methodology and outline forms
- Deleting ES-205 Procedure for Administering the Generic Fundamentals Examination Program, and incorporating relevant guidance into ES-401. One specific item to be addressed would be limits on bank usage
- Appropriate guidance could also be added to Appendix B, Written Examination Concepts

FPL/NextEra Energy Comments on Draft Revision 11 to NUREG 1021

Attachment 2 - (cont.)

Option 2: Add Generic Fundamentals as part of the education requirement for eligibility to enter a license program and sample fundamental knowledge as part of the final NRC license exam.

Justification: Operator Training programs are required by 10 CFR 55.4 to be based on a Systems Approach to Training. Moving generic fundamentals to an education requirement for eligibility to enter a license class would have no adverse effect on the SAT process and would allow for better screening of potential license candidates prior to entry into a license program. This would be accomplished through a combined effort from the NRC and INPO. INPO ACAD 10-001, Guidelines for Initial Training and Qualification of Licensed Operators, contains guidance for the basis of the training program. This guidance includes the generic fundamental topics that are also contained in the K/A catalogs (NUREG 1122/1123) which link the topics to the 55.41 and 55.43 attribute, as applicable. Based on these requirements, this knowledge is required to be taught and examined as part of the site specific training program and could be moved to a prerequisite for entering a license program. In addition, both the Utility and INPO periodically review and assess training program content; specifically evaluating for training program compliance with the ACAD requirements. To meet CFR requirements, the generic fundamentals knowledge will be evaluated in the accredited training program using the SAT process and will be examined as part of the 75 question NRC Reactor Operator (RO) examination (See option 1 above for examination details).

Benefit: NRC benefits would be the elimination of a redundant examination and reduction in administration of request for individuals taking the GFE. Utilities would be able to screen out additional individuals prior to being enrolled into a license program. All CFR-required written examination requirements for the initial candidate can be met with one test – streamlining the oversight process.

Risk: Marginal. A SAT based approach would still require relevant fundamentals based learning objectives to be present in a training program. Additionally, candidates will already have the strictly theory based fundamental knowledge based on the program eligibility requirements and will gain the operational fundamental based knowledge through the site specific license training programs. While no longer requiring a GFE specific exam, GFE would still be sampled on an NRC exam.

Risk Mitigation: By utilizing a SAT based approach to ensure all relevant fundamentals based learning objectives are present in the site specific training program; all required knowledge would still be taught and evaluated to potential license candidates. This would result in program examinations and the final NRC exam being the tool to ensure mastery of fundamental topics.

FPL/NextEra Energy Comments on Draft Revision 11 to NUREG 1021

Attachment 2 - (cont.)

Change required: Changes to NUREG-1021 that may be required to implement this recommendation include:

- Revising ES-401 Preparing Initial Site-Specific Written Examinations, sample plan methodology and outline forms
- Deleting ES-205 Procedure for Administering the Generic Fundamentals Examination Program, and incorporating relevant guidance into ES-401. One specific item to be addressed would be limits on bank usage
- Appropriate guidance could also be added to NUREG 1021, Appendix B, Written Examination Guidelines

Option 3: Develop an on-demand examination for GFE maintained by either the NRC or the industry.

Justification: Operator Training programs are required by 10 CFR 55.4 to be based on a Systems Approach to Training. INPO ACAD 10-001, Guidelines for Initial Training and Qualification of Licensed Operators, contains guidance for the basis of the training program. This guidance includes the generic fundamental topics that are also contained in the K/A catalogs (NUREG 1122/1123) which link the topics to the 10 CFR 55.41 and 10 CFR 55.43 attribute, as applicable. Based on these requirements, this knowledge is required to be taught and examined as part of the site specific training program. In addition, both the Utility and INPO periodically review and assess training program content; specifically evaluating for training program compliance with the ACAD requirements.

Currently, ES-401 requires that the written license examination be provided in two sections and that it samples the 14 items in 10 CFR 55.41(b). Because the GFE topics are evaluated in the 50-question standalone Generic Fundamentals Exam, they are significantly oversampled considering the remaining topics are sampled in the 75-question RO written examination. If it is going to be required to continue conducting the GFE standalone exam, an on demand examination process should be developed. There is currently thousands of NRC approved generic fundamental questions that could be used by a systematic exam software program to randomly select questions per a standard exam outline for utilities to administer to license candidates.

Benefit: NRC benefits would be the elimination of the development and administration of GFE and the ability for NRC initial examinations administrations to be more levelized throughout a calendar year.

Risk: Marginal. Possible increase in exam security issues.

FPL/NextEra Energy Comments on Draft Revision 11 to NUREG 1021

Attachment 2 - (cont.)

Risk Mitigation: Evaluate any potential new vulnerability to exam issues and put in place additional measures as necessary to ensure exam security is maintained.

Change Required: Changes to NUREG-1021 that may be required to implement this recommendation include:

- Revising ES-401 Preparing Initial Site-Specific Written Examinations, sample plan methodology and outline forms
- Deleting ES-205 Procedure for Administering the Generic Fundamentals Examination Program, and incorporating relevant guidance into ES-401. One specific item to be addressed would be limits on bank usage
- Appropriate guidance could also be added to NUREG 1021, Appendix B, Written Examination Guidelines

FPL/NextEra Energy Comments on Draft Revision 11 to NUREG 1021

Attachment 3 - ES-501/502

Executive Summary:

In ML16077A225 and 16077A227, the NRC proposes removing the headquarters informal review of regional appeals decisions as part of Project AIM, the agency cost-cutting initiative. While the NextEra Energy recognizes the importance of NRC and industry efficiency initiatives such as Cumulative Impacts, Cumulative Effects, Project AIM and Delivering on the Nuclear Promise, it is opposed to several aspects of these proposed changes. The NextEra Energy believes this informal review adds important oversight and peer checking of regional appeals decisions and its elimination will not reduce costs but instead increase them as explained below.

Abstract:

NRC Operator Licensing headquarters currently reviews candidate appeal decisions made by the individual regions. This review process is not specifically required or outlined in NUREG 1021 and is therefore considered informal. However, there are numerous examples in which a regional appeal decision is overturned during subsequent headquarters review. This often happens in review of written exam question appeals, and such decisions can appropriately reverse a candidate's failing grade. The proposed revision to NUREG 1021 would require a candidate's further challenge of a regional appeal decision to be reviewed by the Atomic Safety and Licensing Board (ASLB). This change creates two issues:

1. Headquarters will no longer "backstop" regional appeal decisions through their current informal review. Headquarters staff that have the appropriate examiner qualifications and technical knowledge will no longer be included in the review of regional decisions. Headquarters decisions that currently result in overturning regional decisions will be eliminated, potentially resulting in further perpetuation of candidate appeals.

2. The limited amount of time and resources expended by headquarters personnel will increase markedly under the new proposal as regional and headquarters staff will now be involved in the ASLB review process through preparation and testimony to provide technical and examiner expertise to the board.

Recommendation:

NextEra Energy recommends considering, instead of eliminating the informal headquarters review of regional decisions on candidate appeals, the informal process be formalized and included in NUREG 1021 Rev. 11 ES-501 and 502 for the reasons stated above.