**As of:** 3/31/16 11:23 AM
**Received:** March 25, 2016
**Status:** Pending_Post
**Tracking No.** 1k0-8opa-xq4s
**Comments Due:** April 05, 2016
**Submission Type:** Web

# PUBLIC SUBMISSION

**Docket:** NRC-2016-0006
Operator Licensing Examination Standards for Power Reactors, NUREG-1021, Revision 11

**Comment On:** NRC-2016-0006-0005
Operator Licensing Examination Standards for Power Reactors; Extension of Comment Period

**Document:** NRC-2016-0006-DRAFT-0011
Comment on FR Doc # 2016-04748



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## General Comment

4/5/2016
81 FR 6301-1

PSEG Nuclear LLC comments are attached.

## Attachments

6

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**SUNSI Review Complete**
**Template = ADM – 013**
**E-RIDS= ADM-03**
**Add=** m. Schwartz (mcs7)
T. Kolb (TCK)

**PSEG Nuclear LLC**
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PSEG
*Nuclear LLC*

LR-N16-0078
March 25, 2016

Cindy Bladey
Office of Administration
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Washington, DC 20555-0001

Subject: Comments Concerning draft NUREG-1021, Revision 11, "Operator Licensing Examination Standards for Power Reactors," (81FR11302, dated March 3, 2016, Docket ID NRC-2016-0006)

This letter is being submitted in response to the U.S. Nuclear Regulatory Commission (NRC) request for comments concerning draft NUREG-1021, Revision 11, "Operator Licensing Examination Standards for Power Reactors," published in the Federal Register on March 3, 2016 (81FR11302).

PSEG Nuclear LLC (PSEG) appreciates the opportunity to comment on the draft NUREG and offers the attached comments for consideration by the NRC.

If you have any questions or require additional information, please contact Mr. Marios Kafantaris at 856-339-2215.

Paul R. Duke, Jr.
Manager - Licensing
PSEG Nuclear LLC

Attachment

LR-N16-0078

Attachment
**PSEG Comments - NUREG 1021 Rev.11 DRAFT**

Form ES-201-1

*PSEG Comments:*

PSEG recommends changes to the Examination Preparation Checklist items as shown below to allow adequate time to develop, review, compare/contrast and then revise the audit and NRC outlines/exams. The recommended changes will also provide time for adequate exam validation and re-validation.

| Task | Description | Recommended Change |
|---|---|---|
| 1. | Examination administration date confirmed (C.1.a; C.2.a and b) | Move target date to -360. |
| 2. | NRC examiners and facility contact assigned (C.1.d; C.2.f) | Move target date to -360. |
| 3. | Facility contact briefed on security and other requirements (C.2.c) | Move target date to -360. |
| 4. | NRC developed written examination outline, ES-401-1/2 or ES-401N- 1/2, and ES-401-3 or ES-401N-3, sent to facility contact (must be on exam security agreement) (C.1.e-f, C.2.h, C.3.d and e) | Move target date to -360.<br><br>Add another task for licensees to provide comments on written examination outline. Target date -330. |
| 5. | Corporate notification letter sent (C.2.e) | Move target date to -300. |
| 6. | Reference material due for NRC prepared exams, only (C.1.e; C.3.c; Attachment 3) | Move target date to -300. |
| 7. | Revised written examination outline due including ES-401-1/2 or ES- 401N-1/2, and ES-401-3 or ES-401N-3 and ES-401-4 of ES-401N-4 (C.1.e and f, C.3.d) | Move target date to -240. |
| 8. | Operating examination outline(s) and other checklists due, including Forms ES-201-2, ES-201-3, ES-301-1, ES-301-2, ES-301-5, ES-D-1, as applicable (C.1.e and f; C.3.d) | Move target date to -150. |
| 9. | Operating examination outline(s) reviewed by NRC and feedback provided to facility licensee (C.2.h; C.3.e). | Move target date to -120.<br><br>Clarify that Task 9 is not applicable for NRC prepared exams.<br><br>Add another task for licensees to review operating examination outline(s) and provide feedback for NRC developed exams. Target date -120. |
| 10. | Proposed examination (including written, JPMs and scenarios, as applicable), supporting documentation (including Forms ES-301-3, ES- 301-4, ES-301-5, ES-301-6, and ES-401-6, ES-401N-6, and any Form ES-201-2, ES-201-3, ES-301-1, or ES-301-2 updates), and reference materials due (C.1.e, f, g and h; C.3.d) | Split into separate tasks for operating tests (target date -90) and written tests (target date -75). |
| 12. | Written exam and operating test reviews completed (C.3.f) | Split into separate tasks for operating tests (target date -75) and written tests (target date -60). |

| Task Description | | Recommended Change |
|---|---|---|
| 14. | Examination approved by NRC supervisor for facility licensee review (C.2.h; C.3.f and g) | Move target date to -45. |
| 15. | Examinations reviewed with facility licensee (C.1.j and k; C.2.g and h; C.3.g) | Move target date to -45. |
| 17. | Written examinations and operating tests approved by NRC supervisor (C.2.j; C.3.h) | Move target date to -21. |
| 18. | Request facility licensee management feedback on the examination. (C.2 l) | Move target date to -21. |

ES-301 Section D.5.d

The revision proposes to add guidance for assigning simulator operating test scenarios to applicants to ensure that applicants are evaluated on a similar number of pre-identified critical tasks.

*PSEG Comments:*

The number of scenarios an applicant is administered is based on the makeup of the class (number of SRO-I, SRO-U and RO applicants). When possible, the same number of scenarios is given to each individual. To avoid the use of surrogates, some applicants may be seen in 3 scenarios instead of the two required (N+1). In those cases, that applicant with more scenarios will have at least two additional Critical Tasks.

Additionally, scenario sets for applicants may have a different number of Critical Tasks, in total, due to the type of scenario events. For example, Applicant #1 is evaluated in two scenarios with a total of 4 Critical Tasks. Applicant # 2 is evaluated in two different scenarios with a total of 5 Critical Tasks.

Trying to ensure that applicants are evaluated on a similar number of pre-identified critical tasks will be difficult at best, whether the Licensee or the NRC is developing the exam.

Unintended consequences of the change will be the use of more surrogates and possibly the need to develop additional scenarios.

Will allowances be made for NOT having a similar number of Critical Tasks per applicant based class size and makeup?

Form ES-301-4

The revision proposes to add criteria to qualitative attribute No. 9 to check that not more than 50% of the events/malfunctions are repeated from the previous two NRC initial licensing operating exams, excluding major events.

*PSEG Comments:*

The number of scenario events/malfunctions used in the previous two exams is dependent on the number of scenarios required to be developed per exam, which is a function of class size, and on the number of malfunctions available with "Verifiable Actions" in a particular position (RO, BOP).

Although many malfunctions may exist for a given simulator, only a finite number are available for each evaluated position. The number is more limited for the RO. Some malfunctions require no verifiable actions but are needed to set up subsequent events.

The advent of digital systems replacing analog systems has further reduced those malfunctions with verifiable actions, other than perhaps scramming/tripping the reactor or taking manual control of system.

If 12 scenarios have been developed over the previous two NRC exams, then in all probability at least 72 malfunctions have been used. Limiting the overlap to 50% will eliminate many malfunctions that are important to safety, in particular for the RO. Additionally, smaller plants may have further limitations.

For example, reactivity management is one of the most important concepts in plant operations. In a BWR, the RO can typically be exposed to several issues with control rod manipulations (stuck rod, drifting rod, uncoupled rod, scrammed rod). ALL of these malfunctions would probably have been used over the past two NRC exams. Allowing only 50% overlap would limit the ability to adequately evaluate the RO position if five or six scenarios needed to be developed for the new exam.

Another example, in a BWR, would be the need to evaluate emergency depressurization when the Pressure Suppression Pressure Limit is exceeded. To drive a scenario in that direction, a LOCA is required with the inability to spray the containment. Typically, to eliminate containment spray, a valve is failed shut or the pump used to provide spray flow is made unavailable. Both of these malfunctions would be used at least once over the previous two NRC exams. Limiting the overlap to 50% would eliminate the ability to adequately evaluate the applicants in this type of scenario if five or six scenarios need to be developed for the new exam.

NUREG-1021, Rev. 11 Draft, Section ES-301 C.5.b. states:

> A significant modification means that at least two events or conditions have been replaced or significantly altered such that operators will not recognize them from the previous two NRC initial licensing operating exams.

and

> ... any repeated major events from the last two tests should be changed so as to alter the course of action (within the emergency procedures) for the given scenario(s).

Similar words exist in the current revision of NUREG-1021 in Section ES-301 D.5.b. Exam integrity is already addressed per the statements noted above in the current and proposed draft. Additionally, this new limitation will prevent evaluation of events extremely important to safety such as reactivity management.

ES-303, Section D.1.d

The revision proposes to add details for grading SRO applicants in the Technical Specifications competency during simulator events, including guidance to treat every missed TS entry as an individual performance deficiency. Form ES-303-4, Competency Grading Worksheet, Competency 6, Comply with

and Use Technical Specifications, would be split into three separate sub-competencies with changed weighted factors.

*PSEG Comments:*

Treating every missed TS entry as an individual performance deficiency could lead to overemphasis on this competency. For example, some single events could result in two, three or more TS entries. An individual who missed each of those entries for that single event, while making every other TS call correctly, could end up with a failing grade in that competency. Although it is important to identify all potential TS, the ability to recognize, locate and interpret the most limiting TS for that event is the critical safety significant aspect of the competency.

Can the grading for the competency "Comply with and Use TS" be focused on the "most limiting" TS with follow-up questioning as required? This could prevent an overemphasis on a single event with multiple TS, resulting in a failure in this competency even though the ability to recognize, locate and interpret the most limiting TS was successfully demonstrated.