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Christian Cowdrey,  
Mary Neely  
Comment (4)  
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**Docket:** NRC-2020-0227  
NUREG-1021, "Operator Licensing Examination Standards for Power Reactors"

**Comment On:** NRC-2020-0227-0001  
Operator Licensing Examination Standards for Power Reactors

**Document:** NRC-2020-0227-DRAFT-0005  
Comment on FR Doc # 2020-26460

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## Submitter Information

**Name:** Tim Riti

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## General Comment

See attached file(s)

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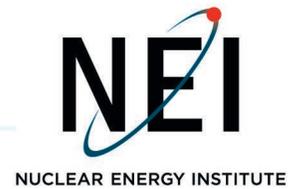
## Attachments

02-12-21\_NRC\_NEI Comments on draft NUREG-1021

**TIMOTHY RITI**

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February 12, 2021

Office of Administration  
Mail Stop: TWFN-7-A60M  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001  
Attn: Program Management, Announcements and Editing Staff

*Submitted via Regulations.gov*

**Subject:** Comments on Draft NUREG-1021, Revision 12, "Operator Licensing Examination Standards for Power Reactors" [85 FR 77280; Docket ID NRC-2020-0227]

**Reference No: 689**

Dear Program Management, Announcements and Editing Staff:

On behalf of our members, the Nuclear Energy Institute (NEI),<sup>1</sup> submits the attached comments on draft revision 12 of NUREG-1021, "Operator Licensing Examination Standards for Power Reactors." The purpose of this letter is to provide the attached list of detailed comments which recommend several changes to improve clarity of the draft guidance and to reinforce feedback that was shared with your staff during a recent public meeting.<sup>2</sup> NUREG-1021 provides important guidance that the industry uses to ensure methods used to examine incumbent licensed operators and prepare initial licensed operator candidates for their NRC exam is, at a minimum, equivalent to the methods and guidance used by the NRC.

NEI's Licensed Operator Focus Group (LOFG) has appreciated the opportunity to engage with the NRC staff through a series of public meetings as early as October 2019 to help identify opportunities for improvement in the areas targeted in this revision. The NEI LOFG coordinated two industry led efforts to pilot proposed

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<sup>1</sup> The Nuclear Energy Institute (NEI) is responsible for establishing unified policy on behalf of its members relating to matters affecting the nuclear energy industry, including the regulatory aspects of generic operational and technical issues. NEI's members include entities licensed to operate commercial nuclear power plants in the United States, nuclear plant designers, major architect and engineering firms, fuel cycle facilities, nuclear materials licensees, and other organizations involved in the nuclear energy industry.

<sup>2</sup> [Public Meeting with Industry Operator Licensing Representatives – January 21, 2021 \(ML21019A008\)](#)

changes as they were being developed to best inform the industry feedback. The first of these pilots focused on the reintegration of generic fundamental concepts into the final written license examination. Feedback from the pilot was provided to the NRC staff in an NEI letter<sup>3</sup> dated March 4, 2020. The second pilot activity was tied to the industry review and application of proposed simulator operating test guidance changes. Feedback from this pilot was shared with the NRC staff at a public meeting<sup>4</sup> on October 22, 2020.

The following summarizes comments from NEI and its members on the proposed NUREG-1021 draft revision:

- Reorganization of the NUREG into chapters is logical and improves the user interface
- Changes to the generic fundamentals testing approach will improve efficiency and add flexibility for license class start dates while ensuring operator proficiency in fundamental concepts
- Improved clarity exists around licensed operator eligibility and waiver requirements to support the selection and licensing of competent license operator candidates
- Some elements of simulator operating examination development and grading guidance offer improved grading consistency while better aligning the significance of performance deficiencies. These include defining performance deficiency (PD), developing new significant performance deficiency (SPD) criteria and changing the scram/actuation PD from critical to significant.

Additional comments and recommendations to further improve guidance in these areas are provided in the attachment.

Additionally, the industry has concerns with some aspects of proposed simulator operating examination guidance specifically tied to changes in critical task (CT) development and grading criteria.

- Increasing the grading significance of missed CTs or critical performance deficiencies (CPD) from a 3-point scoring deduction to an automatic failure of the simulator operating examination is not tied to any identified performance gaps with newly licensed operators. Based on studies conducted by the industry and the NRC, this is expected to result in at least a 2.4% increase in initial licensed operator failure rate<sup>4</sup> of simulator operating examinations. These losses of competent operators from talent pipelines will negatively impact organizational staffing and no clear safety issue exists to warrant the NRC's imposition of this burden.
- The proposed changes to CT criteria may inadvertently result in increases in performance deficiencies such as procedure usage and place keeping errors or intervention by other crew members to be classified as a CPDs resulting in exam failure, even if the associated CT element was accomplished. Since many procedures have verifications and follow up actions to ensure critical

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<sup>3</sup> NEI Letter to NRC OL branch dated March 4, 2020, Generic Fundamentals Reintegration (ML20083F400)

<sup>4</sup> [Public meeting with Industry Operator Licensing Representatives – Oct 22, 2020 \(ML20282A237\)](#)

functions are met, the industry expects this subjectivity will result in an unintended increase in failures and ultimately increase examination appeals. Additionally, control room teams are trained and are expected to immediately coach and correct behaviors when standards are not being met or errors are identified. An unintended consequence of this proposed change may result in reduced challenge between control room team members during simulator operating examinations.

- The draft guidance eliminates a significant amount of CTs (e.g., scrams) that are currently acceptable to the NRC while maintaining a requirement for at least two CTs per scenario. This may result in the unintended consequence of longer and more complex scenarios and additional difficulty in meeting exam overlap requirements. Because the studies conducted by the LOFG and NRC staff used previously graded exams as the subject matter, the potential consequences of this change could not be assessed.
- The revised criteria that support the development of CTs would require the industry to analyze and modify their systematic approach to training based licensed operator training programs including CT lists, training scenarios and simulator exam banks thus increasing the already significant change management workload tied to this revision and adding expense. We strongly encourage the staff to reconsider these significant changes to the CT guidance, in particular if the NRC decides to make missed CTs or CPDs automatic failure criteria during simulator operating examinations.

In conclusion, while the industry is aligned with many of the proposed changes in this revision that will improve clarity and consistency, there are concerns with the impacts tied to certain aspects associated with proposed CT development and grading criteria associated with the simulator operating examination. The attached table contains detailed comments and recommendations to address these concerns as well as other recommendations to help improve the content of the NUREG.

Thank you for your consideration of NEI's comments on behalf of the NEI LOFG and the industry. If you have any questions or require additional information, please contact me at (202) 739-8137 or [txr@nei.org](mailto:txr@nei.org).

Sincerely,



Timothy Riti

Attachment

c: Mr. Chris Miller, Director, Division of Reactor Oversight, NRC  
Mr. Christian Cowdrey, Branch Chief, NRR/DRO/IOLB, NRC  
Ms. Maurin Scheetz, NRR/DRO/IOLB, NRC  
Mr. Brian Tindell, NRR/DRO/IOLB, NRC

Attachment 1: NEI Comments on Draft Revision 12 of NUREG-1021, Operator Licensing Examination Standards for Power Reactors

No.	Section	Comment/Basis	Recommendation
<b>Section 1, GENERAL</b>			
1	ES-1.2 step 3, page 1 of 6 (line 41-46)	Missing statement "and the licensee shall first notify the NRC's regional office to ensure that a point of contact remains available to respond to questions." Is contact no longer required or not allowed?	Confirm if NRC contact is required during written exam and ensure it is added back in the section if so intended.
2	ES-1.2 step 4, page 2 of 6 (line 10-12)	Indicates that applicants' tablets, cell phones or other communication devices are not allowed into the examination room for the written exam. There is no corresponding statement about them not being allowed during the operating test.	Add similar wording to the operating test section if they are not allowed or add a statement that they cannot be used if that is the intent. Another option would be to place the statement in the overall section covering all aspects of the exam.
3	ES-1.2 step 7, page 2 of 6 (line 30)	States; "Note that answers to questions you asked during the examination are documented and taken into consideration during the grading process."  To improve clarity and intend, ensure that questions asked and answers provided will be documented.	Consider modifying the statement to include questions and answers will be documented.
4	ES-1.2, step 10, page 4 of 6 (lines 34-35)	The following statement was removed: "Many of the questions will require you to use plant reference material, while others should be answered without the use of references. If you need to consult a reference to answer a question, ask the examiner if it is acceptable to do so."  Should that guidance be added back for clarity?	Add statement back in from Rev. 11 if the intent is still for applicants to request permission to use a reference.
<b>Section 2, INITIAL PREEXAMINATION ACTIVITIES</b>			
5	ES-2.1 page 10 of 20 (line 9-15)	Is there any time limit on previous employment? Example, if an examiner worked at a utility 10 years ago when the candidates were in initial non-licensed operator training are they allowed to be part of the license exam?	Add a time limit to this restriction.
6	ES-2.2, page 3 of 22 (starting on line 10)	Section references ACAD 10-001, Revision 1. Revised eligibility requirements are contained in ACAD 10-001, Revision 2, which will be released soon. Additionally, the ACAD may be revised more frequently than NUREG 1021 to	Revise to reference ACAD 10-001, Revision 2 or make a general statement to reference the latest revision of the ACAD 10-001 or

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No.	Section	Comment/Basis	Recommendation
		update programmatic requirements for initial license program content. A revision stating to reference the latest revision of ACAD 10-001 or latest revision of the NANT academy guideline for operator eligibility and selection would be more accurate.	latest revision of NANT academy guideline since the NRC participates in the revision process per INPO guidance.
7	Form 2.3-2 (revised op test QA form), ES-2.3, page 10 of 19	A bullet has been added under Walkthrough Criteria, that states “specific designation if it meets alternate path criteria.”  JPM cover sheets typically designate alternate path. This information is also typically in the body of the JPM.	Provide clarification if the added bullet results in new/additional requirements for alternate path JPMs.
<b>Section 3, INITIAL OPERATING TESTS</b>			
8	ES-3.1, page 4 of 5 (lines 35 and 38)	Steps 13.b and 13.c cover the same topic, using JPMs to test knowledge of the differences between plants on multi-unit sites.	Consider combining the two steps into one step.
9	ES-3.2, page 2 of 18 (line 29)	ES-3.2, B.3.a. lists examples for Conduct of Ops Topics, including “access controls for vital/controlled plant areas.” However, Rev 3 of NUREG-1123 deleted KA 2.1.13, “Knowledge of facility requirements for controlling vital/controlled access.” That’s the only KA statement that was applicable to that example.	“Access controls for vital/controlled plant areas” should no longer be used as an example. Recommend replacement with a new example.
10	ES-3.2, page 3 of 18 (lines 26-32)	Bullet formatting is different than 3.a and 3. b.	Consider closing bulleted lines (i.e., no space in between each bulleted line).
11	ES-3.2, page 3 of 18 (line 31)	ES-3.2, B.3.c. lists examples for Radiation Control Topics, including “radiation work permits.” However, Rev 3 of NUREG-1123 deleted KA 2.3.7, the only KA that was associated with radiation work permits.	“Radiation work permits” should no longer be used as an example. Recommend replacement with a new example.
12	ES-3.2, page 9 of 18 (line 20)	Definition/standard of alternate path JPM should be clearly stated in this section since the term is introduced.	Add clarification to this section.
13	ES-3.2, page 12 of 18 Form 3.2-1, step 3	The phrase “senior reactor operator” is spelled out, unlike RO, even though it is a standard abbreviation (on list of abbreviations).	Consider using “SRO” vice “senior reactor operator” for consistency.

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No.	Section	Comment/Basis	Recommendation
14	ES-3.3, page 1 of 17 (lines 5, 6 and 22, 23)	<p>Text states the guidelines also apply to requalification examinations. It is unclear what specifically applies to requalification programs and what is inspectable per IP 71111.11, if anything.</p> <p>Clarify if the guidelines only apply when the NRC writes a requalification exam per ES-6.</p>	Clarify how simulator testing guidelines specifically apply to requalification programs, if at all, and if IP 71111.11 will change to incorporate those specific requirements.
15	ES-3.3, page 1 of 17 (lines 42 and 43)	Step 2 states "...the IC should be representative of a typical plant status with various components, instruments, and annunciators out of service." Although this is not a change from Rev. 11, it seems to denote an unnecessary requirement by not allowing "clean" ICs	Revise to state: "...the IC should be representative of a typical plant status, <b>which may include</b> various components, instruments, and annunciators out of service."
16	ES-3.3, page 2 of 17 (line 18)	The last sentence of the paragraph states: "As such, the operating test should not include such <u>events they</u> are necessary to set the stage for subsequent events or to test the SRO applicant's knowledge of TS actions." It appears the word "unless" should be included before "they."	Add "unless" between "events" and "they" in the sentence to correct the statement.
17	ES-3.3, page 5 of 17 (line 10)	<p>The word "with" does not seem to belong in the following sentence.</p> <p>"If this "jump" is used, the crew must receive <u>with</u> a turnover or cue addressing any relevant plant conditions that changed due to the time compression."</p>	Remove "with" or revise to clarify intent.
18	ES-3.3, page 8 of 17 (starting at line 8)	This states a component/instrument failure that occurs before the major event could be credited for actions before AND after the major event provided the actions to deal with the failure are different when comparing the response before and after. The provided example of excess letdown demonstrates when this could NOT be used since excess letdown actions are the same both before and after the major event. Is it acceptable to count the same malfunction twice, once before and once after the major, provided the actions to address the failure are different?	Provide a positive example of using this allowance to add clarity of acceptance.

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No.	Section	Comment/Basis	Recommendation
19	ES-3.3, page 10 of 17 item 3, (lines 42, 43) and page 11 of 17 (line 1)	Formatting is different for the Combustion Engineering PWR as compared to the others (double spacing between bulleted lines).	Close bulleted lines (i.e., no space in between each bulleted line).
20	ES-3.3, step 5, page 10 of 17	Recent changes to the BWR Owners Group guidelines have changed the setup on some contingency procedures. Specifically, "Alternate Level Control" is no longer a separate contingency procedure and has been added to the "RPV Control" EOP. It is still an EOP contingency path/procedure and should be treated as such.	Consider adding statement that the identified contingency procedures need not be standalone EOPs and may be included in the base EOPs.
21	ES-3.3, step k, Page 11 of 17 (line 45) ES 3.6, page 4 of 27 (line 43) Table 3.6-1, page 6 of 27	<p>All of these sections describe a missed CT or CPD as "UNSAT" or resulting in an automatic failure of the simulator operating test.</p> <p>Previously, a missed CT or CPD resulted in a 3-point deduction versus an automatic failure. Additionally, a single error in any of the other portions of the NRC examination will not result in an automatic failure.</p> <p>Raising the grading threshold (i.e., making it harder for an applicant to pass) should be limited to closing gaps with licensing applicants that were determined to not display the minimum requirements necessary to be licensed as competent licensed operators.</p> <p>There is no evidence that the current grading criteria is inadequate to license competent applicants and the change was made as one of the actions to improve grading clarity and consistency. Many of the other changes, including the new SPD category will help improve grading clarity and consistency without the need for increasing the significance to automatic failure for a missed CT or CPD.</p> <p>NRC evaluation of 417 previously examined licensed operator candidates graded with the proposed NUREG-1021, Rev. 12 grading criteria resulted in a 2.4% increase in failure rate (11 additional failures, 1 additional pass).</p>	Recommend maintaining a missed CT or CPD as a 3-point deduction.

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		<p>The industry also performed a study of a smaller population and determined that there will be increased failures of licensed operator candidates during the simulator operating examination.</p> <p>Additionally, the elimination of a broad category of items contained in Rev. 11 that can constitute a critical task (e.g., scrams) while maintaining the requirement of at least 2 preidentified critical tasks will potentially make scenarios longer, more complex and increase difficulty due to the need to make CTs EOP based similar to Rev. 10. Because the studies conducted by the LOFG and NRC staff used previously graded exams as the subject matter, the potential consequences of this change could not be assessed.</p> <p>These losses of competent operators from talent pipelines will negatively impact organizational staffing and no clear safety issue exists to warrant the NRC's imposition of this burden.</p>	
22	ES-3.3, page 12/13 of 17 (line 38)	<p>Critical Task Methodology is described and discussed in this section. Step C.1 is "Identifying Scenario-Specific Critical Tasks" and directs scenario developers to apply guidance to IDENTIFY and DESIGNATE CTs.</p> <p>The list of items provided mainly describe applicant actions...what applicants must do or not do when responding to plant conditions to satisfactorily address the CT. When developing CTs, the author can only know what actions the applicants SHOULD take, based on the procedural guidance and projected plant response. The author CANNOT know, at this point in the process, what actions the applicants WILL take when they perform the scenario. The list of bullets on page 13 appear to be a description of how to determine if a post-scenario CT has been created. Rev. 11 CT methodology describes how to determine whether a proposed malfunction is a safety-significant CT.</p> <p>Recommend replacing these bullets with similar content to Rev. 11 describing how to determine safety-significance and moving these bullets to the post-</p>	<p>Proposed Replacement Language for Page 13 of ES-3.3:</p> <p>The developer should apply the following guidance to identify and designate CTs in conjunction with facility CT lists or in the absence of such a list:</p> <p>Do conditions exist which represent significant safety challenges? Examples include the following:</p> <ul style="list-style-type: none"> <li>• Conditions that warrant initiation of emergency depressurizations (BWR)</li> <li>• Conditions requiring orange or red path CSF response (W and AP1000)</li> <li>• Conditions that warrant performance of FRG transition (CE)</li> </ul>

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No.	Section	Comment/Basis	Recommendation
		<p>scenario CT discussion. The proposed guidance cannot be followed as written since the authors and examiners cannot know what actions an applicant may take in the future.</p>	<ul style="list-style-type: none"> <li>• Conditions that warrant declaration of SAE or GE</li> </ul> <p>Conditions which are beyond the control of the crew or which are irreparably introduced by the scenario should not be designated as CTs.</p>
23	ES-3.4, page 1 of 9 (line 9)	<p>This paragraph uses the term “examination developers.” Other text uses “examination authors” and “examination writers.” For consistency and clarity, using a common term is suggested.</p>	<p>Recommend using “examination authors” throughout.</p>
24	ES-3.4, page 1 of 9 (line 39)	<p>Bullet 3 regarding “Scenarios extracted...” should be deleted since this requirement is encompassed in bullet 2.</p>	<p>Consider deleting bullet 3 or combine with bullet 2.</p>
25	ES-3.4, page 2 of 9 (line 18-20)	<p>The bullet states; “The scenario should not duplicate operator tasks that appear on the JPM portion of the operating test or on the <u>written examination</u> unless the operator actions for the same task are different for the related simulator event.”</p> <p>Also see sections; ES-3.1 page 2 &amp; ES-2, page 15, step 3 on form 3.2-2.</p> <p>Scenarios and written exams are performed in different contexts and are separated in time. As currently written, this could cause a significant level of increased effort to cross-check thirty to fifty (or more) scenario elements against 100 written exam questions with very little benefit, and risk to examination quality. As discussed at the recent public meeting held on Oct 21, 2021, it appears that the intent of this requirement is for tasks that result in actions taken when due to malfunctions.</p>	<p>Recommend removing “written examination” check or add flexibility similar to Rev. 11 that had “within acceptable limits.”</p> <p>Consider wording such as; “Efforts should be taken to minimize tasks that are the same on the both the operating test and written examination.”</p> <p>Also, consider specifically calling out that this is intended for tasks associated with malfunctions.</p>
26	ES-3.4, page 3 of 9 (line 2)	<p>ES-3.4, B.1, third bullet conflicts somewhat with the example immediately after. Third bullet says SRO-I needs to be evaluated in either the BOP -OR- ATC position. There are no conditions similar to the 301-5 in Rev. 11 (Form 3.4-1 in Rev. 12). The example immediately after seems to specify ATC position since “lead operator” was defined as the ATC in the bullet before.</p>	<p>The example after the third bullet should say “... while the SRO-I applicant is in a reactor operator position.”</p>

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No.	Section	Comment/Basis	Recommendation
27	ES-3.4, page 3 of 9 (lines 25-29)	This is essentially that same as, and redundant to, what is on page 2, lines 22-26.	Eliminate redundancy.
28	ES-3.4, page 3 of 9 (lines 31-33)	Regarding use of surrogates...regional management should have the authority to permit the use of surrogates in order to streamline performance of the operating test without NRR involvement. This would increase efficiency.	Eliminate need to consult with NRR on use of surrogates to streamline performance of the operating test. Recommend replacement with regional branch chief concurrence.
29	ES-3.4, page 4 of 9, Table 3.4-1	Rev. 11 includes a broad category which will no longer be CTs per Rev. 12 criteria (failures which lead to trip conditions if not properly and promptly addressed). Similar to Rev. 10, this leaves only EOP-Based CTs available to meet the “at least 2” criteria. Maintaining the requirement to have 2 CTs per scenario while removing a large batch of what constitutes a CT will make scenarios potentially longer and more complicated. In addition, considering a CT failure will result in a critical performance deficiency (CPD) and an automatic failure of the operating exam, existing CTs that are not commensurate with a penalty of this severity will likely not be applied in future initial licensing examinations. For example, at some BWR stations, inserting a manual scram on a 2 <sup>nd</sup> control rod drift is categorized as a critical task. The “safety significance” is avoiding potential fuel damage due to an unanalyzed control rod pattern. This seems likely to be omitted as a CT on Rev. 12 based exams due to the severe penalty not aligning with the safety significance (i.e., “potential” fuel damage).	Recommend changing CT criteria to “at least 1” (versus 2) per scenario since the population of events in a typical scenario that can result in a critical task have been reduced.  Additionally, limiting the maximum number of CTs to 2 would reduce the likelihood of having scenarios that are too long or complex and may help in consistency during scenario development.
30	ES-3.4, page 4 of 9, Table 3.4-1 (line 3)	There is no definition as to what constitutes a “scenario set” as it applies to contingency EOPs. The requirement is for one contingency EOP per scenario set, but there’s nothing that clarifies if that means each operator must be evaluated with a scenario that contains a contingency EOP.	Recommend adding a statement identifying a “scenario set” means the scenarios the individual operator will see and not the set of scenarios selected for the overall class.
31	ES-3.4, page 4 of 9, Table 3.4-2	Having at least 1 “Manual Control of Automatic Function” event for RO and SRO-I applicants represents a new requirement as compared to Rev. 11.	Add additional guidance on what qualifies as “manual control of an automatic function.” For example, does placing the

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No.	Section	Comment/Basis	Recommendation
		There would be benefit to including additional guidance on what falls into this category.	backup EHC pressure regulator in service qualify?
32	ES-3.4, page 5 of 9 (lines 38-40)	The last sentence in this paragraph states the ODCM cannot be used to meet the minimum TS evaluation requirement. Can the TRM be used to meet the minimum TS evaluation requirement?	Clarify whether the TRM can be used to meet minimum TS evaluation requirements.
33	ES-3.5, Page 1 of 13 (line 40) Page 11 of 13 (lines 21 and 33) Page 12 of 13 (lines 43 and 46)	The term “error” is used in several cases in ES-3.5. Should “performance deficiency” be used instead?	Clarify/modify as necessary.
34	ES-3.5, page 1 of 13 (line 29)	The last sentence in section A.2 is missing some words. It should probably state “ <u>Obtain</u> concurrence from the NRR operator licensing program office <u>if</u> more than 30 days will elapse between the completion of one and the start of the other.”	Modify as necessary by adding “obtain” and “if” to the sentence as highlighted.
35	ES-3.5, step 7, page 4 of 13 (line 24)	Grammar/typo—remove “that”  “An applicant may request <u>that</u> the administration of his or her operating test without 24 extraneous observers.”	Remove “that” from item #7.
36	ES-3.5, page 9 of 13 (line 20)	Grammar/typo in section 16.a – “perform” should be “performed”  “Verify that each examiner observed that his or her applicant <u>perform</u> the required 20 number of transients and events to allow adequate evaluation of all required 21 competencies.”	Change “perform” to “performed”.
37	ES-3.5, page 9 of 13 (line 42-44) ES-3.6, page 5 of 28 (lines 12-13)	This states an SPD exists if an avoidable emergency action level entry or escalation is reached.  An error resulting in EAL entry or escalation at the Unusual Event level does not require staffing the emergency response centers or have increased safety consequences.	Consider a threshold of ALERT or higher for meeting the criteria of an SPD.

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38	ES-3.5, page 9 of 13 (line 32-40) ES-3.6, page 5 of 38 (lines 5-10)	The note states that subsequent RPS/ESF actuations that do not alter equipment alignments are not treated as additional significant performance deficiencies. Other examples that shouldn't be considered an SPD would be single channel actuations or half scrams. These would not alter equipment alignments or only open reactor trip breakers that would not result in an automatic scram.	Consider revising current note or add an additional note that single channel actuations or "half scrams" should not be considered an SPD.
39	ES-3.5, page 9 of 13 (line 46-47) ES-3.6, page 5 of 38 (lines 15-16)	This states an SPD exists if performance deficiencies result in an unplanned power change of more than 10 percent rated thermal power. The intent is that the SPD is due to inadequate power control. At times unit supervisors could direct reducing or controlling power at a lower power level due to conservative decision making. Conservatism is an operator fundamental that is strongly reinforced by the utility training programs.	Consider adding a statement that placing the plant at a lower power level as a result of conservative decision making would not apply to this criterion.
40	ES-3.5, step 17, page 10 of 13 (lines 14-18)	As written, step 17 may cause confusion.  "If a simulator scenario includes emergency plan event classification, because the simulator operating tests for the initial licensing examination are conducted with only one applicant in the SRO position, the NRC does not require the SRO applicant to complete an emergency classification within the normal event classification period of time. The scenario does not need to include event classification."	To add clarity, consider modifying with the following wording;  "Since the simulator operating tests for the initial licensing examination are conducted with only one applicant in the SRO position, the NRC does not require the SRO applicant to complete an emergency classification within the normal event classification period of time. The scenario does not need to include event classification."
41	ES-3.6, throughout	"PD" and "PDs" are used throughout this section, as is "performance deficiency." CPD and SPD are included in the Abbreviations and Acronyms section, but PD is not.	Add PD to Abbreviations and Acronyms for consistency.
42	ES-3.6, page 4 of 27 (lines 35-40)	The paragraph states;  <i>"Applicants will be held accountable for CPDs corrected by other members of the control room team. If an applicant neglects to take an action or takes an</i>	Consider the following recommendations to this area to reduce subjectivity to benefit examiners and to account for the increased safety significance.

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No.	Section	Comment/Basis	Recommendation
		<p><i>incorrect action and is subsequently corrected by a team member, the examination team will determine the impact of that lack of action or incorrect action on the scenario as it relates to a CT. The measurable performance standard for this type of CT depends on the consequence of the applicant's lack of action or incorrect action if the crew had not corrected it."</i></p> <p>This introduces grading subjectivity, especially if the critical task was met/completed. PDs such as procedure usage or place keeping errors or intervention by other crew members may be graded as a CPD. In many cases, there may be no way to determine if the applicant would have caught and corrected the error in a reasonable amount of time during the scenario.</p> <p>While we recognize that there will be a level of judgement by the examiner when evaluating a performance deficiency in this area, this will likely lead to additional candidate appeals if a CPD is assigned, resulting in automatic simulator examination failure even if the associated CT itself was completed. There may have been an opportunity for the candidate to self-identify and correct the error without the intervention but control room teams are trained and expected to immediately coach and correct behaviors when standards are not being met or errors are identified. Additionally, this change may result in less challenge between control room team members.</p>	<p>A PD associated with performance of actions in support of completing a CT requiring intervention by other crew members to complete the CT would be an SPD if the applicant would not have been able to identify and correct the error in a timely manner (i.e., before the CT would be unrecoverable).</p>
43	<p>ES-3.6 Page 6 of 27 (line 16) Page 8 of 27 (line 6) Page 9 of 27 (lines 6 and 9)</p>	<p>The term "error" is used in several cases in ES-3.6. Should "PD" or "Performance deficiency" be used instead? Or in some cases, "error" can be eliminated from the sentence.</p>	<p>Clarify/modify the use of "error" as desired and remove the word "for" on page 6, line 16.</p>
44	<p>ES-3.6, page 6 of 27 (line 17)</p>	<p>CPDs should not be assigned to "understanding" RFs. The applicant needs to demonstrate the inability to take CT-level safety-significant actions to result in a CPD. Should not be based on failing to provide a correct answer to a follow-up question.</p>	<p>Recommend not allowing CPDs to be assigned to "understanding" RFs.</p>

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45	ES-3.6, page 8 (line 26)	The “departure from nucleate boiling” TS example provided is PWR specific. May be beneficial to use an example that applies more generically to other reactor types.	Consider using a TS example that is applicable to all reactor technologies.
46	ES-3.6, page 8, 9	With only three RF points to work with, the allowance to assign multiple PDs for each TS in a single event is not proportional. Each TS event should be limited to one PD normally.	Consider simplifying and adjusting grading criteria described in this section.
47	ES-3.6, page 10 (line 35)	The assignments of CPDs (or even SPDs) in Communications seems excessive. All communications errors should be assessed as a PD after the first one. This may make grading simpler and more consistent.	Consider simplifying communications competency RFs.
48	ES-3.7, page 1 (line 21)	Step A.4 – a period is missing from the end of the sentence.	Add period.
<b>Section 4, INITIAL WRITTEN EXAMINATIONS</b>			
		None	
<b>Section 5, INITIAL POSTEXAMINATION ACTIVITIES AND OTHER LICENSING ACTIONS</b>			
		None	
<b>Section 6, NRC-CONDUCTED REQUALIFICATION EXAMINATIONS</b>			
49	ES-6.1, step 5, page 8 of 33 (line 21)	“postexamination” should be hyphenated.	Change “postexamination” to “post-examination”
50	ES-6.1, H.2.c and d, Page 14 of 33	Regarding first and second retakes, the document does not specify whether a second retake is required following passing the first retake.	Consider adding a statement that a second retake does not apply following successful completion of the first retake.

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		Note that this is not a change from ES-605 (page 13), and it implies a second retake isn't necessary following passing of the first, but may be added in the interest of clarity.	
51	ES-6.1, Page 15 of 33 (line 21)	Form 6.1-1 - Has no title description	Include form title.
52	ES-6.1, Page 15 of 33 (line 46)	Form 6.1-6 - Has no title description	Include form title.
53	Form 6.1-3, ES-6.1 Page 20 of 33	"Preexamination" and "Postexamination" should be hyphenated.	Change "Preexamination" and "Postexamination" to "Pre-examination" and "Post-examination."
54	ES-6.1, Page 23 & 24 of 33	Under III. Quality, Exam Section goes from; "A. Sample Plan" to "C. Walkthrough"  It appears that there should be another section for; "B. Written Exam"	Move the guidance for written exam quality from revision 11 to revision 12.
55	ES-6.1, Page 26 of 33	The page number shows 2 of 33 versus 26 of 33.	Correct the page number to 26 of 33.
56	ES-6.3, page 2 of 7 (line 3)	The sentence "systems that are the subject of NRC information notices" is a separate thought from the one above and should be a separate bullet.	Make sentence its own bullet.
<b>Section 7, FUEL HANDLING EXAMINATIONS</b>			
		None	
<b>Section 8, GLOSSARY</b>			
		None	

No.	Section	Comment/Basis	Recommendation
<b>Appendix A: Overview of Generic Examination Concepts</b>			
		None	
<b>Appendix B Examples of Written Examination Questions</b>			
57	Appendix B	Tier 4 “Theory” is new to the written examination and previously used generic examples of reactor and thermodynamic theory questions may or may not be acceptable on final licensing examinations. There would be a benefit to developing examples to include.	Add examples of plant-specific, operationally valid theory questions to Appendix B to aid the facility Examination Authors in developing satisfactory operationally valid theory questions (refer to NEI letter on Generic Fundamentals Reintegration, Appendix 1, Recommendation 1, dated March 4, 2020 (ML20083F400)).
<b>OTHER COMMENTS</b>			
58	General Comment	Revision 12 <i>Several blank pages</i>	Recommend removing blank pages to reduce document size.