

June 16, 2017

Ms. Pamela B. Cowan  
Vice President, Nuclear Generation  
Nuclear Energy Institute  
1201 F Street, NW, Suite 1100  
Washington, DC 20004

SUBJECT: THE U.S. NUCLEAR REGULATORY COMMISSION RESPONSE TO THE  
NUCLEAR ENERGY INSTITUTE 10 CFR PART 52, "LICENSES,  
CERTIFICATIONS, AND APPROVALS FOR NUCLEAR POWER PLANTS,"  
LICENSING LESSONS-LEARNED LETTER, DATED JANUARY 27, 2017

Dear Ms. Cowan:

By letter dated January 27, 2017 (Agencywide Documents Access Management System (ADAMS) Accession Nos. ML17058A334 and ML17058A319), you provided the results of a recent industry workshop on lessons learned from new plant licensing experience. In the letter, you requested U.S. Nuclear Regulatory Commission (NRC) support for actions to improve new reactor licensing efficiency and reduce regulatory impact on the time-to-market for future new plant applicants. You requested action for improving licensing efficiency and predictability in five key lessons-learned areas, noting that most of the improvements could be accomplished through new or revised NRC guidance, without rulemaking, and while leveraging ongoing activities to achieve desired outcomes.

Subsequently, in an e-mail dated February 24, 2017 (ADAMS Accession No. ML17059C937), Michael Tschiltz of your staff provided suggested priorities for addressing the most frequently cited improvements by the attendees at the industry lessons-learned workshop:

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|-------------|---|
| Priority 1. | Tier 2* and Standard Inspections, Tests, Analyses and Acceptance Criteria (ITAAC)/First Principles (Nuclear Energy Institute (NEI) Lessons Learned Numbers 3 and 4) |
| Priority 2. | Application level of detail and acceptance reviews/docketing (NEI Lesson Learned Number 1)  |
| Priority 3. | Preapplication project plan (NEI Lesson Learned Number 2)   |
| Priority 4. | Combined license issuance despite design certification errors (NEI Lesson Learned Number 5)   |

We appreciate the information from the industry's lessons learned workshop and the recommendations for addressing each of the lessons learned. The activities you suggested are generally consistent with efforts we have underway or planned. The enclosure to this letter summarizes those ongoing and planned NRC activities related to the lessons learned identified in your letter.

We believe that continued engagement with NEI and our other stakeholders is important to improving our processes. We look forward to further engagement on these topics through our public meetings and workshops. The NRC would consider further improvements in its licensing process and prioritize these activities accordingly.

Sincerely,

***/RA/***

Vonna L. Ordaz, Acting Director  
Office of New Reactors

Enclosure:  
Summary of NRC Ongoing and  
Planned Activities

THE U.S. NUCLEAR REGULATORY COMMISSION RESPONSE TO THE NUCLEAR ENERGY INSTITUTE 10 CFR PART 52, "LICENSES, CERTIFICATIONS, AND APPROVALS FOR NUCLEAR POWER PLANTS," LICENSING LESSONS-LEARNED LETTER, DATED JANUARY 27, 2017. DATED JUNE 16, 2017

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\*via e-mail

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NEI Lessons Learned Priority <sup>1</sup>	NEI Lessons Learned <sup>2</sup>	NEI Recommended Actions <sup>2</sup>	NRC Ongoing and Planned Activities
<p>Priority 1</p> <p>Tier 2* &amp; Standard Inspections, Tests, Analyses and Acceptance Criteria (ITAAC)/First Principles</p>	<p>Need to simplify the Part 52 change process, especially Tier 2*</p> <p><i>A principal lesson learned from Part 52 implementation to date is that Tier 2* unduly complicates the 50.59-like change process, placing undue burden on licensees, and is unnecessary. While not eliminating Tier 2*, a forthcoming SECY paper is expected to acknowledge the problem of Tier 2* excess and take steps to limit and control the staff's use of this category of design certification information.</i></p> <p>Need to standardize ITAAC and establish Tier 1/ITAAC First Principles</p> <p><i>Lack of guidance has led to unnecessary and inconsistent ITAAC being included in design certifications. Inconsistent, unnecessary and poorly crafted ITAAC add burden and the potential for ITAAC closure and hearing issues. Efforts begun in 2013 to develop Tier 1 First Principles and standardized ITAAC via NEI 15-02, "Industry Guideline for the Development of Tier 1 and ITAAC under 10 CFR Part 52," offer the opportunity to establish needed clarity and consistency concerning the level of detail required for Tier 1/ITAAC.</i></p>	<ul style="list-style-type: none"> <li>• Work closely with Korea Hydro &amp; Nuclear Power (KHNP) and NuScale to demonstrate that design certifications can be completed without use of Tier 2* designations.</li> <li>• Work with NRC to reflect KHNP and NuScale outcomes in an updated SECY paper and associated SRP guidance to provide for use of Tier 1 and Tier 2 only in future design certifications.</li> <li>• Leverage the KHNP and NuScale design certification applications to resolve remaining issues related to the scope and language of standard ITAAC.</li> <li>• Revise and resubmit NEI 15-02 for NRC review, including a complete set of standard ITAAC together with Tier 1/ITAAC "First Principles" on which they are based.</li> <li>• Achieve a common understanding on standard ITAAC and Tier 1/ITAAC "First Principles," and document NRC endorsement in a regulatory guide.</li> </ul>	<p>The U.S Nuclear Regulatory Commission (NRC) staff is developing a paper to describe planned actions to improve usage of the Tier 2* designation. This paper is expected to describe related efforts to improve the descriptions of Tier 1 and Tier 2 information as well as the infrastructure updates needed for these improved tier descriptions. Nuclear Energy Institute's (NEI) proposed Tier 1, "First Principles," may be useful in these updates.</p> <p>The NRC staff has not continued its review efforts of the Standardized ITAAC within NEI 15-02 at this time. The NRC does not consider this a priority because there are no forthcoming users for this type of guidance. The NRC staff discussed and subsequently issued letters with a set of standard ITAAC to NuScale<sup>3</sup> and KHNP<sup>4</sup> for possible use in their applications. The NRC staff will re-engage with NEI to resume the review of Standardized ITAAC if and when the appropriate prioritization and available resources allow.</p>

<sup>1</sup> Priorities identified in an e-mail from M. Tschiltz to M. Mayfield and J. Segala, dated February 24, 2017, ADAMS Accession No. ML17059C937.

<sup>2</sup> Lessons learned identified in a letter from P. Cowan to V. Ordaz, dated January 27, 2017, ADAMS Accession Nos. ML17058A334 and ML17058A319.

<sup>3</sup> Letter from F. Akstulewicz to T. Bergman dated June 21, 2016, ADAMS Accession No. ML16160A109.

<sup>4</sup> Letter from D. Williams to J. Y. Lee dated August 11, 2016, ADAMS Accession No. ML16208A536.

NEI Lessons Learned Priority	NEI Lessons Learned	NEI Recommended Actions	NRC Ongoing and Planned Activities
<p>Priority 2</p> <p>Application level of detail and acceptance reviews/docketing</p>	<p>Growth in application content and level of detail</p> <p><i>The growth in application content is potentially unsustainable and frequently cited as a major obstacle to future new plant applicants. Recent new plant experience can and should be examined to understand and stem the continued growth in application scope and level of detail and associated NRC reviews.</i></p>	<ul style="list-style-type: none"> <li>• NRC workshop(s) for NRC staff and stakeholders to explore the reasons underlying the growth in application scope and level of detail, strategies and opportunities to stem this growth, and ways to clarify the threshold for information necessary to support required NRC safety findings.</li> <li>• Reflect identified clarifications and improvements in the SRP or other appropriate guidance.</li> <li>• These activities would be in addition to, and will complement, ongoing efforts to develop new application and review guidance for non-LWRs.</li> </ul>	<p>Over the past 2 years, the NRC staff conducted several public meetings to discuss a revision to its guidance for new reactor license applications found in Regulatory Guide (RG) 1.206, "Combined License Applications for Nuclear Power Plants." The proposed revision to the regulatory guide (Draft Regulatory Guide DG-1325) addresses the lessons learned the NRC staff identified during its new reactor licensing reviews. The proposed revision also responds to feedback and comments from public interactions, including from NEI.</p> <p>The NRC staff made DG-1325 publically available on June 9, 2017 (ADAMS Accession No. ML15233A056). The NRC staff expects to continue working with members of the public, industry, and NEI on the guidance.</p>

NEI Lessons Learned Priority	NEI Lessons Learned	NEI Recommended Actions	NRC Ongoing and Planned Activities
Priority 3  Pre-application project plan	<p>Need for more effective pre-application interactions and acceptance review process</p> <p><i>Experience with the TVA Clinch River early site permit and NuScale design certification applications pointed up a lack of common understanding and consistency regarding application of existing guidance on application acceptance reviews. This experience can be applied to develop and/or clarify guidance on the NRC's application acceptance review process, application docketing criteria, and the integration of pre-application interactions with NRC staff safety reviews.</i></p>	<ul style="list-style-type: none"> <li>• NRC workshop(s) for NRC staff and stakeholders to discuss recent acceptance review experience and identify opportunities to improve efficiency and effectiveness e.g., clarification of NRO-REG-100.</li> <li>• Reflect identified clarifications and improvements in durable guidance for future applicants and NRC staff such as Regulatory Guide 1.206, "Combined License Applications for Nuclear Power Plants." RG 1.206 contains sections on Pre-application Activities, Readiness Assessment, and Application Acceptance Review, and is currently being updated by the NRC.</li> <li>• Reflect updated guidance in the Regulatory Review Roadmap for non-LWRs being developed by the NRC staff and in envisioned guidance on developing licensing project plans.</li> </ul>	<p>As noted in the response above, the NRC staff made DG-1325 publically available on June 9, 2017. This draft regulatory guide addresses the lessons learned the NRC staff identified during its new reactor licensing reviews and considers feedback and comments received from public interactions on the proposed revisions.</p> <p>The NRC staff is currently working with NEI and other stakeholders to develop guidance and best practices for preapplication interactions with developers of advanced reactor designs. The staff is developing a flexible approach to accommodate developers at different stages of the reactor design and will include various plans for licensing and deployment.</p> <p>The NRC staff is revising the draft regulatory roadmap the agency made available in October 2016 to capture feedback from periodic stakeholder meetings and recent interactions with advanced reactor developers. On April 24, 2017, NEI submitted a report titled "Clarifying 'Major Portions' of a Reactor Design in Support of a Standard Design Approval," for NRC review and comment. The staff will provide feedback to NEI on this report during a June 22, 2017, public meeting to support NEI completing its report. The staff plans to incorporate this information into the draft roadmap before finalizing it in the Fall of 2017.</p>

NEI Lessons Learned Priority	NEI Lessons Learned	NEI Recommended Actions	NRC Ongoing and Planned Activities
Priority 3 (continued)  Pre-application project plan			A key to effective interactions is the development of licensing project plans and associated NRC review plans. The staff is continuing to discuss the format and content of licensing project plans with individual developers and during the periodic stakeholder meetings. Insights and best practices identified by NEI and others will be helpful in developing NRC and industry guidance in this area.
Priority 4  Combined license (COL) issuance despite design certification (DC) errors	Avoid delay in COL issuance due to required design certification changes  <i>A process solution is needed to avoid unnecessary delays in licensing when the need for changes in a referenced design certification is identified while a COL application is under review. Issuance of COLs without delay is appropriate because existing change processes assure that errors identified in a referenced design certification will be corrected prior to construction of affected SSCs.</i>	<ul style="list-style-type: none"> <li>• Discuss options for addressing this issue in a public meeting, as proposed in the NRC's letter to NEI dated July 18, 2016.</li> <li>• Identify a preferred process solution and codify it in a Commission SRM or appropriate regulatory guidance, or via rulemaking if necessary.</li> </ul>	In DG-1325, the NRC staff incorporated DC/COL-ISG-11, "Finalizing Licensing Basis Information," to address errors in design certifications referenced by combined licenses. The NRC staff considered feedback and comments during the development of DG-1325 and made it publically available on June 9, 2017 (ADAMS Accession No. ML15233A056). The NRC staff also expects to continue working with members of the public, industry, and NEI to ensure that the agency's processes are open, transparent, and do not result in undue licensing delays.  With respect to the proposed public meeting discussed in the referenced letter, the NRC staff believes that additional opportunities to discuss this item and industry options will be available when DG-1325 is published in the <i>Federal Register</i> on June 20, 2017, for public comment.