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Docket: NRC-2022-0074
Review of Risk-Informed, Technology Inclusive Advanced Reactor Applications - Roadmap

Comment On: NRC-2022-0074-0001
Draft Interim Staff Guidance: Review of Risk-Informed, Technology Inclusive Advanced Reactor Applications—Roadmap

Document: NRC-2022-0074-DRAFT-0006
Comment on FR Doc # 2023-11186

Submitter Information

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General Comment

See attached file(s)

Attachments

08-10-23_NRC_ARCAP-TICAP Comments

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NUCLEAR ENERGY INSTITUTE

August 10, 2023

Mr. Mohamed Shams
Director, Division of Advanced Reactors and Non-Power Production and Utilization Facilities (DANU)
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Subject: Comments on Draft Interim Staff Guidance: "Review of Risk-Informed, Technology Inclusive Advanced Reactor Applications – Roadmap," Docket ID NRC-2022-0074

Submitted via Regulations.gov

Project Number: 689

Dear Mr. Shams:

On behalf of the nuclear energy industry, the Nuclear Energy Institute (NEI)[1] is pleased to submit comments to the Nuclear Regulatory Commission (NRC) on the draft interim staff guidance (ISG) documents making up the Advanced Reactor Content of Application Project (ARCAP) as well as the draft regulatory guide DG-1404. The sum of these documents makes up Docket ID NRC-2022-0074 and are detailed below.

- DANU–ISG–2022–01, "Advanced Reactor Content of Application Project, 'Review of Risk-Informed, Technology Inclusive Advanced Reactor Applications—Roadmap'"
- DANU–ISG–2022–02, "Advanced Reactor Content of Application Project Chapter 2, 'Site Information'"
- DANU–ISG–2022–03, "Advanced Reactor Content of Application Project Chapter 9, 'Control of Routine Plant Radioactive Effluents, Plant Contamination and Solid Waste'"
- DANU–ISG–2022–04, "Advanced Reactor Content of Application Project Chapter 10, 'Control of Occupational Dose'"
- DANU–ISG–2022–05, "Advanced Reactor Content of Application Project Chapter 11, 'Organization and Human-System Considerations'"

[1] 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.

- DANU–ISG–2022–06, "Advanced Reactor Content of Application Project Chapter 12, 'Post-Construction Inspection, Testing, and Analysis Program'"
- DANU–ISG–2022–07, "Advanced Reactor Content of Application Project, 'Risk-informed Inservice Inspection/Inservice Testing'"
- DANU–ISG–2022–08, "Advanced Reactor Content of Application Project, 'Risk-Informed Technical Specifications'"
- DANU–ISG–2022–09, "Advanced Reactor Content of Application Project, 'Risk-informed Performance-based Fire Protection Program (for Operations)'"
- Regulatory Analysis for ARCAP ISGs
- DG–1404, "Guidance for a Technology-Inclusive Content of Application Methodology to Inform the Licensing Basis and Content of Applications for Licenses, Certifications, and Approvals for Non-Light-Water Reactors"

Specific comments and suggested changes are provided in the attachment for the noted documents. NEI also provides below some general comments that help explain and inform the specific comments.

Throughout all the documents of the package, there are statements that this guidance is applicable to non-Light Water Reactors (LWRs). However, all the guidance is technology-inclusive and is equally applicable to both LWR and non-LWR designs. The applicability of the guidance to LWR designs could benefit from this explicit clarification. For the ARCAP guidance, industry specifically requested the NRC develop guidance applicable to both non-LWRs and LWR designs, and we were informed in various meetings that this would be the NRC's approach. While NEI 18-04 and NEI 21-07 were developed specifically for advanced non-LWRs, applicants with LWR designs should also be able to use the Licensing Modernization Project (LMP) methodology if they elect to do so (e.g., NEI 18-04 and NEI 21-07). It would be up to the applicants to justify the use of the guidance documents and associated regulatory guides.

A lot of the existing LWR regulatory guidance is referenced throughout the various documents. While in some instances, these LWR guidance documents may be applicable to both LWR and non-LWR designs, there should not be a presumption that such guidance applies generally unless shown otherwise. The focus of the guidance package should be on demonstrating compliance with regulatory requirements, and an applicant should be afforded the opportunity to choose which existing regulatory guidance it elects to apply (if any) in order to accomplish that goal.

ARCAP Documents

The roadmap (DANU-ISG-2022-01) has a section carved out for a Facility Safety Program to be incorporated into Part 50 and Part 52 after being developed in Part 53. We disagree with including guidance based upon Part 53 requirements that have not been approved by the Commission for inclusion in the Final Rule. Instead, specific draft guidance should be used. Furthermore, we are concerned about the NRC's expressed intention to backfit Part 53 requirements into Parts 50 and 52, which would make the optional voluntary Part 53 requirements mandatory regardless of whether an applicant would use Part 53, or Parts 50 or 52. Furthermore, as we have expressed in our comments to the Part 53 rulemaking, a facility safety program,

as described in Part 53, would create an unjustified additional burden by requiring licensees to self-impose backfits subject to inspection and potential criminal penalties for their failure to do so, and is in direct conflict with the NRC's existing backfit rule.

DG-1404

The draft regulatory guide DG-1404 endorses (with clarifications and additions) NEI 21-07, Revision 1, "Technology-Inclusive Guidance for Light Water Reactors – Safety Analysis Report Content for Applicants Using the NEI 18-04 Methodology." The draft ISG documents provide additional guidance for an advanced reactor application under 10 CFR Part 50 or Part 52. These comments and suggested changes were assembled by NEI and industry members including the Southern Company-led team that developed NEI 21-07, with support from the U.S. Department of Energy, and worked with NEI to submit the guidance for endorsement.

The establishment of technology-inclusive guidance for applicants using the risk informed methodology will help to provide increased regulatory certainty and predictability. The process of developing NEI 21-07 and DG-1404 has been ongoing since 2019, and it has been characterized by extensive interaction between industry and the NRC. The process has included sharing white papers, providing draft documents for review and discussion, numerous presentations during NRC stakeholder meetings and at dedicated public meetings, industry-NRC workshops, and tabletop exercises with reactor developers that were observed by NRC staff. NEI believes that this approach has contributed significantly to the effectiveness and value of the guidance in NEI 21-07, and NEI appreciates the resources that NRC has devoted to the interactions and the frankness and openness that have characterized the discussions related to NEI 21-07. It is in that spirit that these comments on the package are provided. We are confident that the guidance documents will be valuable resources for applicants seeking regulatory approval for advanced reactors.

It is important that the guidance package avoid duplicating information in multiple documents as this creates an error-likely situation where information is either updated in one place but not another, or a user finds information in one place but not the other, mistakenly believing that they have found all applicable guidance. Additionally, repeating information from NEI 21-07 into the regulatory guide (DG-1404), or elsewhere, is unnecessary, counterproductive, and detracts from the overall quality and utility of the guidance. The unnecessary information requires users to sift through and interpret the "new" content and it distracts attention from those items in the NRC regulatory guide that are actual clarifications and additions. As such, the attachment denotes several NRC additions and clarifications where the information added is already provided in NEI 21-07.

There is a discrepancy between NEI 21-07 Rev. 1 and DG-1404 with respect to the coverage of certain licensing pathways. NEI 21-07 explicitly addresses several licensing pathways: a combined license (COL) under 10 CFR Part 52 Subpart C; a design certification (DC) under 10 CFR Part 52 Subpart B; and a two-step license (CP/OL) under 10 CFR Part 50. NEI 21-07 did not address manufacturing licenses (MLs) or standard design approvals (SDAs). DG-1404 states in several places that the guidance covers MLs and SDAs as well as COLs, DCs, and CP/OL, but the NRC document provides no additional guidance for MLs and SDAs.

Rather, the text often is not practical for these other applications as written and should be revised. For example, ML applicants should only be required to include information relevant to design, fabrication, performance, and the manufacturing process itself. The other activities would take place beyond the scope of an ML and should be addressed in a COLA. Similarly, the information associated with post-construction, inspection, testing, and analysis (PITAP) is clearly denoted as applicable to MLs but it's not clear how an ML would address them. Clarification is needed to distinguish between activities at the ML facility and activities at the site.

NEI 18-04 has a systematic process of identifying safety-related structures, systems, and components (SSCs) based on the approach taken to satisfy Required Safety Functions. Placing special emphasis on certain SSCs is not technology inclusive. Whether this is fuel qualification or instrumentation and control systems, special requirements are unnecessary and inappropriate.

Thank you for your time and attention to this important matter. Please contact me if you have any questions or require additional information.

Sincerely,

Ben Holtzman

Attachments

c: Robert Taylor, NRR, NRC
John Segala, NRR, NRC
Joseph Sebrosky, NRR, NRC
Michael Orenak, NRR, NRC
William Reckley, NRR, NRC

File: DANU-ISG-2022-01, ARCAP Roadmap			
Comment #	Location	Comment	Proposed Change
1	General	Throughout all the documents of the package, there are statements that this guidance is applicable to non-Light Water Reactors (LWRs). However, all the guidance is technology-inclusive and is equally applicable to LWRs. ARCAP is supposed to be applicable for any technology (non-LWR and LWR), any licensing approach (LMP, classical, etc.), and any licensing path (CP, COL, DC etc.). For the ARCAP guidance, industry specifically requested the NRC develop guidance applicable to both non-LWRs and LWR SMRs, and we were informed in various meetings that this would be the NRC's approach. While NEI 18-04 and NEI 21-07 were developed specifically for advanced non-LWRs, applicants with LWR designs should also be able to use the Licensing Modernization Project (LMP) methodology if they elect to do so (e.g., NEI 18-04 and NEI 21-07). It would be up to the applicants to justify the use of the guidance documents and associated regulatory guides.	Please rephrase to indicate the guidance is technology-inclusive and is equally applicable to both LWR and non-LWR designs.
2	General	The roadmap denotes the lists of guidance documents referenced in different documents of this package (e.g., DG-1404 [the TICAP Reg Guide], DANU-ISG-2022-02 [ARCAP Chapter 2], DANU-ISG-2022-08 [Tech Specs]). Duplicating this information in multiple documents creates an error likely situation and is not recommended.	Please only list the guidance documents in one location. Recommended to remove from the roadmap.

File: DANU-ISG-2022-01, ARCAP Roadmap			
Comment #	Location	Comment	Proposed Change
3	General	Are there any programs an applicant using LMP methodology is expected to develop that are not noted in the roadmap or relevant TICAP/ARCAP chapters?	If there are any programs or information that NRC expects an applicant to provide, using LMP methodology, that are not noted in the roadmap please add them.
4	p. 3 p. 9	TICAP is described as an industry-led activity that is focused on providing guidance on the appropriate scope and depth of information related to the specific portions of the SAR that describe the fundamental safety functions of the design and the safety analysis. However, TICAP (NEI 21-07 Rev 1) is more than just addressing portions of the SAR that describe fundamental safety functions of the design. It is important to explicitly tie NEI 21-07 back to NEI 18-04.	Please revise the text as noted below: "TICAP is an industry-led guidance activity focused on the scope and depth of information to include in the portions of the SAR that address the implementation of the LMP methodology as described in NEI 18-04, Revision 1, and endorsed by the NRC in Regulatory Guide 1.233."
5	p. 5, last sentence of 1st full paragraph	It is noted that Appendix B of the ISG describes the regulations that are generally applicable to non-LWR applications for CPs and OLs under 10 CFR Part 50 as well as DCs, COLs, and SDAs under 10 CFR 52. The overall scope of this ISG includes MLs so the scope of Appendix B should include regulations applicable to non-LWR MLs. If this is simply an editorial oversight in preparing the ISG, it should be corrected. If, however, Appendix B does not address all of the regulations applicable to a non-LWR ML application, the Appendix should be revised accordingly.	Either the text describing Appendix B should be revised to include MLs or Appendix B should be revised to include all regulations applicable to non-LWR applications for MLs.

File: DANU-ISG-2022-01, ARCAP Roadmap			
Comment #	Location	Comment	Proposed Change
6	p. 6 and p. 38 (footnote)	As of the date of this ISG, the NRC is developing a rule to amend 10 CFR Parts 50 and 52 (RIN 3150-AI66). The NRC staff notes this guidance may need to be updated to conform to changes to 10 CFR Parts 50 and 52, if any, adopted through that rulemaking. Further, as of the date of this ISG, the NRC is developing an optional performance-based, technology-inclusive regulatory framework for licensing nuclear power plants designated as 10 CFR Part 53, "Licensing and Regulation of Advanced Nuclear Reactors," (RIN 3150-AK31). After promulgation of those regulations, the NRC staff anticipates that this guidance will be updated and incorporated into the NRC's Regulatory Guide (RG) series or a NUREG series document to address content of application considerations specific to the licensing processes in this document. The proposed Facility Safety Program in Part 53 (and reserved for incorporation into Part 50 and Part 52 as noted in the roadmap ISG) would create an unjustified additional burden by requiring licensees to self-impose backfits subject to inspection and potential criminal penalties for their failure to do so. Industry is strongly opposed to this in Part 53 and this guidance. The proposed program is in direct conflict with the NRC's backfit rule that limits changes to regulatory requirements to those that are safety significant and cost beneficial.	Please remove the references to a Facility Safety Program.

File: DANU-ISG-2022-01, ARCAP Roadmap			
Comment #	Location	Comment	Proposed Change
7	p. 9, Guidance Documents Referenced in DG-1404, 2nd bullet	RG 1.81 is for 50.71(e) not 50711. This typo should be corrected.	Please correct the 2nd bullet to refer to 50.71(e).
8	p. 12-14, Design of Structures, Components, Equipment, and Systems	Most of the discussion under this heading is applicable to LWRs that operate well above atmospheric pressure. The guidance is not relevant to non-LWRs that may operate at or near atmospheric pressure. Although the draft guidance specifically identifies that "certain sections of NUREG-0800 Chapter 3 may not be applicable based on the reactor design and the outcome of the LMP process" and uses introductory phrases such as "as applicable" it would be helpful to provide additional clarification if NRC has expectations for non-LWR applicants with system operating pressures at or near atmospheric to address piping failures.	On page 14, add the following text after the bullet on Section 3.6.3: Applicants for designs that operate at or near atmospheric pressure need not address Sections 3.6.1, 3.6.2 or 3.6.3. If the reactor design does not include SSCs that could generate missiles inside the containment or confinement then Section 3.5.1.2 need not be addressed in the application. However, internally generated missiles outside containment and turbine missiles would still be addressed in the COLA.

File: DANU-ISG-2022-01, ARCAP Roadmap			
Comment #	Location	Comment	Proposed Change
9	p. 12	The last paragraph states "The TICAP guidance (i.e., NEI 21-07 and DG 1404) for the design of structures, components, and equipment and systems would generally place this information in SAR Chapters 5 and 6, following the LMP process. The SAR (Chapters 5 and 6) should describe..." However, this information should be included in SAR Chapters 5, 6, and 7. Chapter 5 identifies safety-related (SR) and non-safety-related with special treatment (NSRST) SSCs but the details are in Chapters 6 and 7.	Please revise the text as noted below."The TICAP guidance (i.e., NEI 21-07 and DG 1404) for the design of structures, components, and equipment and systems would generally place this information in SAR Chapters 5, 6, and 7; following the LMP process. The SAR (Chapters 5, 6, and 7) should describe..."
10	p. 14	Typo on the second bullet of the page: - Section 3.6.3, "Leak-Before-Brea Evaluation Procedures," (Ref. 24)	Correct the typo: - Section 3.6.3, "Leak-Before-Break Evaluation Procedures," (Ref. 24)
11	p. 14, last paragraph	An ML applicant must provide PDCs in the application. However, the statement in the first sentence of the referenced paragraph that the full scope of PDC include "design, fabrication, construction, testing and performance requirements…" is not practical for ML applicants. Additionally, it would be helpful to provide a distinction between fabrication and construction, as 'fabrication' is included in the definition of "Construction or constructing" provided in 10 CFR 50.2.	At the end of the first sentence, include the following: ML applicants need only propose PDC to establish necessary design, fabrication and performance requirements. PDC relevant to testing as part of the manufacturing process should also be included. However, a COL applicant should include all of the PDC in their SAR.

File: DANU-ISG-2022-01, ARCAP Roadmap			
Comment #	Location	Comment	Proposed Change
12	p. 15	The guidance on PDCs for those aspects of the facility design not informed by the LMP process lists Normal Operations as the only example. More specifically, the guidance only refers to guidance in DANU-ISG-2022-03, "Chapter 9, Control of Routine Plant Radioactive Effluents, Plant Contamination and Solid Waste," as guidance for PDCs beyond those derived from the process outlined in NEI 21-07 (as endorsed in DG-1404). It is unclear if other PDC are expected from an applicant.	Please clarify the guidance for PDCs for those aspects of the facility design not informed by the LMP process to indicate the comprehensive list of topics beyond the scope of NEI 21-07 (as endorsed in DG-1404) that are expected by the NRC to be within the scope of PDC.
13	p. 15	It appears from the following sentence that an applicant could have SSCs that are classified as SR and NSRST that are not informed by NEI 18-04. "The NRC also considers this approach to be appropriate for developing proposed PDCs for those design functions and features of the facility that are SR and NSRST and not informed by the LMP process (e.g., normal operations)." It is not clear that SR and NSRST classifications have specific meaning outside the context of NEI 18-04. A system can have requirements driven by regulations without being SR or NSRST (e.g., security systems).	Please revise this text to remove an implication that SSCs could be SR and NSRST that are not informed by NEI 18-04. "The NRC also considers this approach to be appropriate for developing proposed PDCs for those design functions and features of the facility that are ~~SR and NSRST and not informed~~ classified as NST by the LMP process (e.g., normal operations)."

File: DANU-ISG-2022-01, ARCAP Roadmap			
Comment #	Location	Comment	Proposed Change
14	p. 16-17	The wording on ALARA in Chapter 10 indicates that the guidance will continue the well-established operational program for ALARA but not extend ALARA into the design, as a regulatory requirement. Industry agrees with this position as it provides a predictable regulatory framework.	No change requested.
15	p. 39	Guidance for Aircraft Impact Assessment is provided in both DG-1404 (addressing SAR Chapter 3) and the ARCAP Roadmap (DANU-ISG-2022-01). The ARCAP Roadmap guidance is more thorough and should be used, but DG-1404 may be the more appropriate location. Cross-referencing is appropriate, but guidance should be provided in one location.	Please place the aircraft impact assessment guidance from the ARCAP Roadmap into one location – either the ARCAP Roadmap or DG-1404. Delete the aircraft impact assessment guidance from the other location so the guidance is not spread among multiple documents.

File: DANU-ISG-2022-01, ARCAP Roadmap			
Comment #	Location	Comment	Proposed Change
16	Chapter 9	The ML application should only be required to include information to identify the kinds and quantities of radioactive materials expected to be produced during operation and the means for controlling / limiting effluents. Other information identified in Chapter 9 should be addressed in a COLA.	On page 16, at the end of the second full paragraph, add the following text: "For ML applications, the Chapter 9 discussion need only include information to identify the kinds and quantities of radioactive materials expected to be produced in the operation and the means for controlling and limiting radioactive effluents and radiation exposures within the limits set forth in part 20 (per 52.157(e)); the information required by 20.1406 (per 52.157(f)(9)); and the information with respect to the design of equipment to maintain control over radioactive materials in gaseous and liquid effluents produced during normal reactor operations as described in 50.34a(e) (per 52.157(f)(11). Other information identified in Chapter 9 should be addressed in a COL application."

File: DANU-ISG-2022-01, ARCAP Roadmap			
Comment #	Location	Comment	Proposed Change
17	Chapter 10	The ML application should only be required to address the facility and equipment design, and radiation sources. Operational programs and descriptions of management, policy and organizational structure necessary to ensure occupational radiation exposure are ALARA should be addressed in a COLA.	On page 17, at the end of the first full paragraph, add the following: "…of Occupational Dose (Ref. 30). An ML application only needs to address the facility and equipment design, and radiation sources. Operational programs and descriptions of management, policy and organizational structure necessary to ensure occupational radiation exposure are ALARA should be addressed in a COLA."
18	Chapter 11	An ML application would only require a description of the management plan for design and manufacturing activities (52.157)(f)(26). Operational programs including human-systems considerations and other Chapter 11 SAR content should be addressed in a COLA.	On page 17, at the end of the second paragraph, add the following text: "An ML application only needs to address a description of the management plan for design and manufacturing activities, per 52.157(f)(26). All other aspects of Chapter 11 SAR content should be addressed in a COLA."

File: DANU-ISG-2022-01, ARCAP Roadmap			
Comment #	Location	Comment	Proposed Change
19	p. 39, ITAAC	The language regarding ITAAC is correct for CP, OL, COL and DCs. However, 52.158(a)(1) requires ITAAC "that the licensee who will be operating the reactor shall perform, and the acceptance criteria that are necessary and sufficient to provide reasonable assurance that...(i) the reactor has been manufactured in conformity with the manufacturing license; the provisions of the Act, and the Commission's rules and regulations; and (ii) the manufactured reactor will be operated in conformity with the approved design and any license authorizing operation of the manufactured reactor." As such additional information is needed to address ML applications.	On page 39, at the beginning of the section "Overview -- Application guidance" add the following text: "An ML application should address the provisions in 10 CFR 52.158 regarding ITAAC for MLs. The other ITAAC requirements should be addressed by applicants for CPs, OLs, COLs, or DCs."
20	Appendix A, p. 8	The text states that "a prospective applicant should identify any novel design features through white papers or meetings during the pre-application review…interdependent effects among the safety features of the design is acceptable." While some examples are given in the text, does the NRC want to review in advance novel design features that are not SR or NSRST?	Please clarify under what circumstances novel design features should and should not be identified in advance of an application. If a prospective applicant should identify any safety-related or safety significant novel design features through white papers or meetings during the pre-application review that should be stated.

File: DANU-ISG-2022-01, ARCAP Roadmap			
Comment #	Location	Comment	Proposed Change
21	Appendix A, p. 8	The text states that during pre-application interactions, a prospective applicant should use a white paper to identify any consensus codes and standards, or code cases it intends to use. However DG-1404 states that this listing should be included in SAR. It's an error-likely situation to include the same information in multiple places in the licensing basis.	Please specify how the consensus codes and standards should be identified.
22	Appendix B, p. 15	Regulation 10 CFR 50.155 is noted as applicable to non-LWRs but there is no specification on whether this is applicable to OLs, COLs, and or CPs.	Please provide clarification on what applications should address 10 CFR 50.155 in the table.
23	Appendix B, p. 22	Bookmark not defined	Please correct bookmark
24	Appendix B, p. 23	The design features of some new reactor designs may remove the applicability of 50.34(f)(2)(i) when there is not a viable LOCA pathway. As such, there would not be a need for the control room to simulate a small-break LOCA.	Please consider noting that 50.34(f)(2)(i) may only be applicable to some designs in Table 4.
25	Appendix B, Attachment 1, p. 3	Typo, need space between 'against' and 'NUREG-0800'	Please correct the text as noted.

File: DANU-ISG-2022-01, ARCAP Roadmap			
Comment #	Location	Comment	Proposed Change
26	Appendix C p. 12	The Emergency Planning section only references regulations that are applicable to LWRs, there is no mention of using 10 CFR 50.160 and its accompanying RG 1.242, which is written specifically for advanced reactors. Is the NRC staff expecting advanced reactor PSARs and FSARs to follow the current LWR regulations for EP? Will the staff consider the new rulemaking effort for advanced reactor EP in order to minimize the regulatory burden of reviewing exemptions for EPZs, EROs, and EALs? The use of LWR guidance for non-LWR applicants will result in unnecessary and costly exemptions.	Please add clarification or additional information to address EP for advanced reactors.

File: DANU-ISG-2022-02, ARCAP Chapter 2			
Comment #	Location	Comment	Proposed Change
1	General	Throughout all the documents of the package, there are statements that this guidance is applicable to non-Light Water Reactors (LWRs). However, all the guidance is technology-inclusive and is equally applicable to LWRs. ARCAP is supposed to be applicable for any technology (non-LWR and LWR), any licensing approach (LMP, classical, etc.), and any licensing path (CP, COL, DC etc.). For the ARCAP guidance, industry specifically requested the NRC develop guidance applicable to both non-LWRs and LWR SMRs, and we were informed in various meetings that this would be the NRC's approach. While NEI 18-04 and NEI 21-07 were developed specifically for advanced non-LWRs, applicants with LWR designs should also be able to use the Licensing Modernization Project (LMP) methodology if they elect to do so (e.g., NEI 18-04 and NEI 21-07). It would be up to the applicants to justify the use of the guidance documents and associated regulatory guides.	Please rephrase to indicate the guidance is technology-inclusive and is equally applicable to both LWR and non-LWR designs.
2	General	The guidance should be reviewed with a specific focus to eliminate review of external hazards that are not possible for ML applicants, but remain applicable to CP, OL, and COL applicants (e.g., stability of slopes). Site related information can only be provided in terms of postulated site parameters for ML applicants.	Please add text similar to the following: For an ML application the site description should describe the site characteristics as they affect the design, e.g., a site parameter envelope. Other site characteristics are left to the COL applicant to provide as well the site-specific information necessary to demonstrate that site characteristics fit within the plant parameter envelope.

File: DANU-ISG-2022-02, ARCAP Chapter 2			
Comment #	Location	Comment	Proposed Change
3	First Line of p. 2	Typo, need space between 'a' and 'non-LWR'	Please fix typographical error.
4	p. 5	The last sentence of the third full paragraph indicates that external hazards not supported by PRA will be covered deterministically. The guidance should not preclude a potential combination of PRA and deterministic techniques.	Please revise the text to indicate that external hazards not supported by PRA will be covered using traditional deterministic or hybrid methods.
5	p. 13	Reg Guide 1.111 is specifically noted for LWRs. A statement indicating whether NRC staff have previously made determinations for its applicability to non-LWR designs or add a statement on the appropriateness of its application to non-LWR designs.	Please revise as noted.
6	p. 22	The last sentences of 2.6.5.1 and 2.6.5.2.c denote the need for analysis and operating experience. This is excessive and conflicts with other text in this section denoting 'current practice' and 'state-of-the-art' practices.	Please revise the text to remove this excess conservatism and align with the rest of the section text.
7	p. 24 Section 2.7.2	Additional guidance (or a more standardized approach) for screening external hazards via the screening flow chart diagram could help streamline the process and minimize the number/extent of pre-engagement discussions.	Please consider developing a standardized approach.

File: DANU-ISG-2022-03, ARCAP Chapter 9			
Comment #	Location	Comment	Proposed Change
1	General	Throughout all the documents of the package, there are statements that this guidance is applicable to non-Light Water Reactors (LWRs). However, all the guidance is technology-inclusive and is equally applicable to LWRs. ARCAP is supposed to be applicable for any technology (non-LWR and LWR), any licensing approach (LMP, classical, etc.), and any licensing path (CP, COL, DC etc.). For the ARCAP guidance, industry specifically requested the NRC develop guidance applicable to both non-LWRs and LWR SMRs, and we were informed in various meetings that this would be the NRC's approach. While NEI 18-04 and NEI 21-07 were developed specifically for advanced non-LWRs, applicants with LWR designs should also be able to use the Licensing Modernization Project (LMP) methodology if they elect to do so (e.g., NEI 18-04 and NEI 21-07). It would be up to the applicants to justify the use of the guidance documents and associated regulatory guides.	Please rephrase to indicate the guidance is technology-inclusive and is equally applicable to both LWR and non-LWR designs.

File: DANU-ISG-2022-04, ARCAP Chapter 10			
Comment #	Location	Comment	Proposed Change
1	General	Throughout all the documents of the package, there are statements that this guidance is applicable to non-Light Water Reactors (LWRs). However, all the guidance is technology-inclusive and is equally applicable to LWRs. ARCAP is supposed to be applicable for any technology (non-LWR and LWR), any licensing approach (LMP, classical, etc.), and any licensing path (CP, COL, DC etc.). For the ARCAP guidance, industry specifically requested the NRC develop guidance applicable to both non-LWRs and LWR SMRs, and we were informed in various meetings that this would be the NRC's approach. While NEI 18-04 and NEI 21-07 were developed specifically for advanced non-LWRs, applicants with LWR designs should also be able to use the Licensing Modernization Project (LMP) methodology if they elect to do so (e.g., NEI 18-04 and NEI 21-07). It would be up to the applicants to justify the use of the guidance documents and associated regulatory guides.	Please rephrase to indicate the guidance is technology-inclusive and is equally applicable to both LWR and non-LWR designs.

File: DANU-ISG-2022-05, ARCAP Chapter 11			
Comment #	Location	Comment	Proposed Change
1	General	Throughout all the documents of the package, there are statements that this guidance is applicable to non-Light Water Reactors (LWRs). However, all the guidance is technology-inclusive and is equally applicable to LWRs. ARCAP is supposed to be applicable for any technology (non-LWR and LWR), any licensing approach (LMP, classical, etc.), and any licensing path (CP, COL, DC etc.). For the ARCAP guidance, industry specifically requested the NRC develop guidance applicable to both non-LWRs and LWR SMRs, and we were informed in various meetings that this would be the NRC's approach. While NEI 18-04 and NEI 21-07 were developed specifically for advanced non-LWRs, applicants with LWR designs should also be able to use the Licensing Modernization Project (LMP) methodology if they elect to do so (e.g., NEI 18-04 and NEI 21-07). It would be up to the applicants to justify the use of the guidance documents and associated regulatory guides.	Please rephrase to indicate the guidance is technology-inclusive and is equally applicable to both LWR and non-LWR designs.

File: DANU-ISG-2022-05, ARCAP Chapter 11			
Comment #	Location	Comment	Proposed Change
2	p. 4	The ISG denotes that NRC staff expects to see general staffing plans for the construction pre-op testing, fuel load, and startup and power ascension testing. There is also text denoting CPAs include preliminary plans for the operating organization. What Reg Guide or NUREG will NRC staff use to verify staffing methodology for new reactor designs with advanced safety features and technologies that vendors believe will warrant fewer staff than current LWRs? Additional information on the level of detail expected in the CP and OL applications would be helpful to remove subjectivity from applicant reviews. For example, does the technical basis need to be provided in the CPA? Does the NRC just want a list of proposed staff, or does the eligibility requirements with justification need to be provided?	Please add clarification on the level of detail expected as noted.

File: DANU-ISG-2022-05, ARCAP Chapter 11			
Comment #	Location	Comment	Proposed Change
3	p. 15 and 16	The ISG acceptance criteria in sections 11.2 c, d, i, l, and m lack clear criteria with a basis to ensure both the reviewer and applicant will reach the same conclusion on whether the criteria is met. This could lead to rework by both applicant and reviewer. If no clear criteria can be identified, then these should not be part of the acceptance review.	Please add clarifying basis for the criteria similar to 11.2.g "… adequate number of licensed operators will be available at all required times to satisfy the minimum staffing requirements of 10 CFR 50.54(m), or the applicant has provided justification for an exemption. (10 CFR 50.54(i)–(m)..." This provides clear criteria with a basis that both applicant and reviewer can agree on. Alternatively, the criteria could be removed from the ISG if no clear acceptance criteria and basis can be identified.
4	p. 16	The requirement for engineering expertise on shift based on LWR operating experience from TMI comes from a Commission Policy statement rather than regulation, and may not be relevant to advanced reactor technologies. More relevant engineering expertise will be from the technology specific training programs that will teach engineering fundamentals and principles required to operate that specific technology. Information should be provided regarding how applicants can credit the technology-specific training program and design features that reduce the need for traditional engineering expertise (LWR technology scope not applicable to all designs) while identifying other activities more relevant to the applicant's design.	Please add clarification on technology neutral approaches for a site can meet the requirement for engineering expertise.Additionally, please provide clarification on what information and features would need to be demonstrated to enable engineering expertise to be on-call, part of the Emergency Response Organization (ERO), or remote.

File: DANU-ISG-2022-06, ARCAP Chapter 12			
Comment #	Location	Comment	Proposed Change
1	General	Throughout all the documents of the package, there are statements that this guidance is applicable to non-Light Water Reactors (LWRs). However, all the guidance is technology-inclusive and is equally applicable to LWRs. ARCAP is supposed to be applicable for any technology (non-LWR and LWR), any licensing approach (LMP, classical, etc.), and any licensing path (CP, COL, DC etc.). For the ARCAP guidance, industry specifically requested the NRC develop guidance applicable to both non-LWRs and LWR SMRs, and we were informed in various meetings that this would be the NRC's approach. While NEI 18-04 and NEI 21-07 were developed specifically for advanced non-LWRs, applicants with LWR designs should also be able to use the Licensing Modernization Project (LMP) methodology if they elect to do so (e.g., NEI 18-04 and NEI 21-07). It would be up to the applicants to justify the use of the guidance documents and associated regulatory guides.	Please rephrase to indicate the guidance is technology-inclusive and is equally applicable to both LWR and non-LWR designs.

File: DANU-ISG-2022-06, ARCAP Chapter 12			
Comment #	Location	Comment	Proposed Change
2	Purpose of ISG and language on p. 2	10 CFR 52.1 defines a manufacturing license as a license issued under subpart F, authorizing the manufacture of nuclear power reactors but not their construction, installation, or operation at the sites on which the reactors are to be operated. On page 2 of DANU-ISG-2022-06 it is noted that the guidance in the ISG is limited to the portion of non-LWR application associated with the development of a risk-informed post-construction inspection, testing, and analysis program (PITAP) and the staff review of that portion of the application. The applicability of the ISG clearly includes applications for MLs. Given the definition of an ML it is not clear how guidance on a PITAP is applicable to an ML.	The purpose and descripting discussion of the ISG should be revised to be clear how this ISG applies to an ML application since by definition the ML does not authorize construction, installation or operation.

File: DANU-ISG-2022-06, ARCAP Chapter 12			
Comment #	Location	Comment	Proposed Change
3	p. 5, Application Guidance, 1st sentence	The first sentence notes the PITAP is generally divided into two phases: Phase 1 is the preoperational phase (prior to initial fuel loading) and Phase 2 is initial startup testing (initial fuel loading and initial power ascension). The application should describe how all tests identified in the Phase 1 program can be performed prior to loading fuel. The expected content for an ML application to address Phase 1 is not clear. As background, 52.157 does not explicitly address post-manufacture inspection or testing although 52.158 includes a requirement for ITAAC to demonstrate the reactor has been manufactured in conformity with the manufacturing license, the provisions of the Act, and the Commission's rules and regulations. 52.157(f)(21) does require justification that compliance with the interface requirements of paragraph (f)(20) is verifiable through inspections testing, or analysis. The method to be used for this verification must be included as part of the proposed ITAAC required by 52.158.	The ISG should be revised regarding MLs to clearly distinguish between post-manufacturing inspection and testing that would be expected to be addressed in the factory and post-construction inspection and testing. One example of language that addresses post-manufacturing inspection comes from the draft proposed Part 53, specifically 53.620(b)(3): "post-manufacturing inspection and acceptance process must be established and implemented before transporting a manufactured reactor or portions of a manufactured reactor for installation at a commercial nuclear plant. The process must consider the results of inspections, tests, and analyses that have been performed and the acceptance criteria that are necessary and sufficient to conclude that manufacturing activities have been completed in accordance with the ML."

File: DANU-ISG-2022-06, ARCAP Chapter 12			
Comment #	Location	Comment	Proposed Change
4	Bottom of p. 6	The language in the last paragraph on Page 6 states, "For MLs, much of the post-construction inspection and testing to resolve ITAAC may be performed at the manufacturers facility and not at the final site." The text goes on to address the ML ITAAC requirements in 52.158(a). This language continues to confuse "manufacturing" and "construction" and is an unnecessary complication in the guidance.	There are two proposed changes: (1) revise the title and structure of the ISG to address post-manufacturing and post-construction; (2) restructure the guidance to make clear expectations for post-construction activities that are appropriate for CP, OL, and COLs versus the expectations for MLs. The discussion of the post-construction activities for sites that will utilize a reactor manufactured under an ML, the inspection activities should address construction and installation activities for the manufactured reactor.
5	p. 6	The last sentence of the first paragraph on page 6 states: "If the application is for a CP, the PITAP description can be limited to the Phase 1 (described below) inspection, testing, and verification that would be required by 10 CFR Part 50, Appendix B, along with a description of the scope, objectives, and programmatic controls associated with the pre-operational test program (prior to initial fuel loading)." This implies requirements that go beyond the quality assurance program descriptions required in 10 CFR 50.34(a)(7) and does not appear to be consistent with the first sentence of the second paragraph of the application guidance on page 5: "…program elements required by the quality assurance program under § 50.34(a)(7)."	Please confirm that this ISG is not adding additional requirements beyond what is required to be provided in a CPA per 10 CFR 50.34(a)(7) by removing or rewording the last sentence from the first paragraph of page 6.

File: DANU-ISG-2022-07, ARCAP Inservice Inspection and Inservice Testing			
Comment #	Location	Comment	Proposed Change
1	General	Throughout all the documents of the package, there are statements that this guidance is applicable to non-Light Water Reactors (LWRs). However, all the guidance is technology-inclusive and is equally applicable to LWRs. ARCAP is supposed to be applicable for any technology (non-LWR and LWR), any licensing approach (LMP, classical, etc.), and any licensing path (CP, COL, DC etc.). For the ARCAP guidance, industry specifically requested the NRC develop guidance applicable to both non-LWRs and LWR SMRs, and we were informed in various meetings that this would be the NRC's approach. While NEI 18-04 and NEI 21-07 were developed specifically for advanced non-LWRs, applicants with LWR designs should also be able to use the Licensing Modernization Project (LMP) methodology if they elect to do so (e.g., NEI 18-04 and NEI 21-07). It would be up to the applicants to justify the use of the guidance documents and associated regulatory guides.	Please rephrase to indicate the guidance is technology-inclusive and is equally applicable to both LWR and non-LWR designs.
2	General	There are a few references to design considerations of the facility to allow ISI/IST activities to be performed when operating. Why wouldn't those discussions be in the specific GDCs instead of this section? It creates uncertainty as to what governing document the designers should use.	Recommend that design specifics be placed in the applicable GDCs and not an inservice testing/inspection document.

File: DANU-ISG-2022-07, ARCAP Inservice Inspection and Inservice Testing			
Comment #	Location	Comment	Proposed Change
3	General	It is not clear why manufacturing licenses are in the scope of this ISG on ISI/IST. ISI/IST are operating reactor programs and therefore not directly applicable to MLs which, by definition in 52.1, do not address operation. The full description of the ISI and IST programs goes beyond what would be reasonable for an ML applicant. However, the ISG could provide guidance on using the PRA to identify the SSCs that would be part of the ISI program (for a reactor assembled using an ML) and this information would then be used in the design and manufacture of the reactor to ensure adequate accessibility of the component or region (e.g., accessibility to welds) to be inspected once deployed. Similarly, as part of the SSC classification and determination of special treatment for NSRST SSCs, the components that would require qualification prior to installation could be identified and the design and manufacture of the reactor modified to ensure adequate accessibility to permit conducting the tests.	Include descriptions in the ISG of the design and manufacture considerations that would affect the conduct of ISI and IST. This should include a discussion of using the PRA results to identify SSCs and locations to be included in the risk-informed ISI, and the components and locations to be included in the IST program.
4	p. 3	The ISG acknowledges the development of the ASME OM-2 code but states that applicants following the ISG will implement IST programs utilizing previously endorsed codes. On page 6, the ISG denotes that construction permit applications include what standards are going to be followed at the operating license stage. What are the requirements are for applicants who expect to follow an endorsed OM-2 code at the time of operating license issuance when submitting construction permits prior to OM-2 code endorsement?	Please add guidance stating that applicants may provide plans to follow codes not yet endorsed "at risk" in the construction permit application.

File: DANU-ISG-2022-07, ARCAP Inservice Inspection and Inservice Testing			
Comment #	Location	Comment	Proposed Change
5	p. 4 and 5	For plants that are factory built and scalable, it would be beneficial to only have a single IST program that is also scalable - e.g., not having to create a new update interval, testing etc... If the PRA is generic to the design, then a plant specific program doesn't make sense as well. This would be additional burden to licensees and NRC staff with no increase in the margin of safety. They should be the same and only needed one time for those type of reactors.	Recommend to revise text to indicate monitoring/corrective action should be done in accordance with code requirements and corrective action program.
6	p. 7	The text indicates that ISI should describe the process to be followed when degradation is identified. However, the code or facility corrective action process would describe the relevant next steps. If this information is also included here, it will result in a satellite corrective action program with duplicative information creating an error-likely situation.	Recommend to revise text to indicate monitoring/corrective action should be done in accordance with code requirements and corrective action program.

File: DANU-ISG-2022-08, ARCAP Tech Specs			
Comment #	Location	Comment	Proposed Change
1	General	Throughout all the documents of the package, there are statements that this guidance is applicable to non-Light Water Reactors (LWRs). However, all the guidance is technology-inclusive and is equally applicable to LWRs. ARCAP is supposed to be applicable for any technology (non-LWR and LWR), any licensing approach (LMP, classical, etc.), and any licensing path (CP, COL, DC etc.). For the ARCAP guidance, industry specifically requested the NRC develop guidance applicable to both non-LWRs and LWR SMRs, and we were informed in various meetings that this would be the NRC's approach. While NEI 18-04 and NEI 21-07 were developed specifically for advanced non-LWRs, applicants with LWR designs should also be able to use the Licensing Modernization Project (LMP) methodology if they elect to do so (e.g., NEI 18-04 and NEI 21-07). It would be up to the applicants to justify the use of the guidance documents and associated regulatory guides.	Please rephrase to indicate the guidance is technology-inclusive and is equally applicable to both LWR and non-LWR designs.

File: DANU-ISG-2022-08, ARCAP Tech Specs			
Comment #	Location	Comment	Proposed Change
2	p. 13	The text states: "RG 1.177, position 2.3.4, references the risk metrics of core damage frequency and large early release frequency based on LWRs as factors in determining completion times. Advanced reactor applicants should use other risk metrics, such as those described in NEI 18-04, for determining completion times." The NEI 18-04 approach involves direct quantification of risk metrics for comparison to the Quantitative Health Objectives (QHOs): latent cancer fatalities and early fatalities. RG 1.177, Section 2.4, "Acceptance Guidelines for Technical Specification Changes," provides quantitative acceptance criteria for technical specification changes in terms of CDF and LERF. There is interest in NRC development of similar acceptance criteria for the NEI 18-04 latent cancer fatality and early fatality integrated risk metrics.	NRC should consider providing additional clarification about how the acceptance criteria for CDF and LERF metrics in RG 1.177 should be interpreted with respect to the NEI 18-04 integrated risk metrics. For example, should a licensee interpret the incremental conditional core damage probability (ICCDP) metric in RG 1.177 as directly interchangeable with an incremental conditional latent cancer fatality risk metric?
3	p. 13-16	10 CFR 50.34(a)(5) requires "An identification and justification for the selection of those variables, conditions, or other items which are determined as the result of preliminary safety analysis and evaluation to be probable subjects of technical specifications for the facility, with special attention given to those items which may significantly influence the final design." For the surveillance requirements, design features, and administrative controls sections of the PSAR TS; what level of detail does the NRC staff expect to see in the PSAR?	Please provide clarification on the level of detail expected, based on the discussion in this draft guidance, for the surveillance requirements, design features, and administrative controls sections of the PSAR TS.

File: DANU-ISG-2022-08, ARCAP Tech Specs			
Comment #	Location	Comment	Proposed Change
4	p. 17	Item (8) mentions that TS are to meet 50.36, which were developed for LWRs. The draft ARCAP Roadmap DANU-ISG-2022-01 denotes that this regulation is applicable for non-LWRs but that in some cases, exemptions are expected to be taken.	Please clarify whether there is a plan to minimize the need for lengthy and costly exemptions for all non-LWR applicants. Either by revising 50.36 or otherwise.

File: DANU-ISG-2022-09, ARCAP Fire Protection			
Comment #	Location	Comment	Proposed Change
1	General	Throughout all the documents of the package, there are statements that this guidance is applicable to non-Light Water Reactors (LWRs). However, all the guidance is technology-inclusive and is equally applicable to LWRs. ARCAP is supposed to be applicable for any technology (non-LWR and LWR), any licensing approach (LMP, classical, etc.), and any licensing path (CP, COL, DC etc.). For the ARCAP guidance, industry specifically requested the NRC develop guidance applicable to both non-LWRs and LWR SMRs, and we were informed in various meetings that this would be the NRC's approach. While NEI 18-04 and NEI 21-07 were developed specifically for advanced non-LWRs, applicants with LWR designs should also be able to use the Licensing Modernization Project (LMP) methodology if they elect to do so (e.g., NEI 18-04 and NEI 21-07). It would be up to the applicants to justify the use of the guidance documents and associated regulatory guides.	Please rephrase to indicate the guidance is technology-inclusive and is equally applicable to both LWR and non-LWR designs.
2	General	This guidance describes the advanced reactor fire protection program as an operational program. What is the NRC expecting to see, if anything, in regards to plant fire protection for the Construction Permit Application (CPA)?	Please provide a statement of what is expected for the CPA.
3	p. 5	Is the NRC willing to consider endorsing NFPA 804?	No change required, just further engagements to explore the possibility of endorsing NFPA 804 for advanced reactors

File: DANU-ISG-2022-09, ARCAP Fire Protection			
Comment #	Location	Comment	Proposed Change
4	p. 6-11	The guidance that a plant should have a five-man fire brigade is based on the design basis fire causing a radioactive release to the public, and the manual suppression from the fire brigade mitigates the consequences of the design basis fire. The new ARCAP guidance continues to mention fire brigade should be addressed in the fire protection program. Advanced reactors following the NEI 18-04 process may demonstrate the fire design basis hazard levels (DBHLs) do not cause a radiation release to the public and environment that exceed the limits of 50.34. Therefore, is the NRC staff considering relaxing or rewording fire brigade requirements if manual suppression is not required for nuclear safety, in order to prevent exemption requests? Is the NRC considering adding to the guidance in RG 1.189 or revising the guidance in RG 1.189 to relax fire brigade requirements for advanced reactor technologies that do not require manual suppression?	Provide updated guidance or relaxation for fire brigades at advanced reactors that demonstrate a fire cannot impact safe shutdown and cannot violate offsite dose releases in 50.34.
5	p. 6 in B.2.iii	The document calls for "identification of Authority Having Jurisdiction (AHJ)." The term AHJ is specific to NFPA codes, and should not be used in this document as alternative codes and standards could be used, meaning that this term would not be relevant. A generic term such as "parties with responsibilities" should be used instead.	Replace as noted

File: DANU-ISG-2022-09, ARCAP Fire Protection			
Comment #	Location	Comment	Proposed Change
6	p. 8-9	There are several fire protection related regulatory requirements that may be less relevant and/or less important to smaller SMRs or microreactors. Such requirements include: (1) Fire protection staff training and qualification requirements (2) Manual fire fighting capabilities that do not rely on having a fire brigade. Having some generic guidance related to how smaller SMRs or microreactors can meet the intent of these regulations, or the type of information NRC would be looking for in an exemption request to these requirements, would be helpful to industry. Especially as demonstrating why some of these things may not be needed would require a developer/potential licensee to "prove a negative."	Please consider including guidance related to these regulatory requirements, including the kind of information NRC would be looking for to meet the intent of the regulations or in exemption requests.
7	p. 9 in B.11	The document describes a monitoring program similar to that performed for NFPA 805 and for maintenance rule. The purpose of such a program is to ensure that the risk-informed inputs to the fire protection program remain valid; such a monitoring program is not applicable to a non-NFPA 805 plant.	Section should be removed

File: DG-1404, TICAP Reg Guide			
Comment #	Location	Comment	Proposed Change
1	General	There are statements in the draft regulatory guide that this guidance is applicable to non-Light Water Reactors (LWRs). However, the guidance is technology-inclusive and is equally applicable to both LWRs and non-LWRs. While NEI 18-04 and NEI 21-07 were developed specifically for advanced non-LWRs, applicants with LWR designs should also be able to use the Licensing Modernization Project (LMP) methodology if they elect to do so (e.g., NEI 18-04 and NEI 21-07). It would be up to the applicants to justify the use of the regulatory guide.	Please rephrase to indicate the guidance is technology-inclusive and is equally applicable to both LWR and non-LWR designs.

File: DG-1404, TICAP Reg Guide			
Comment #	Location	Comment	Proposed Change
2	General	The NRC states on page 6 that it "…endorses the methodology described in NEI 21-07, Revision 1 as one acceptable method for use in developing certain portions of the SAR for an application for a non-LWR CP or OL under 10 CFR Part 50, or COL, ML, SDA, or DC under 10 CFR Part 52, with clarifications and additions described below." However, NEI 21-07, Rev. 1 Section A.3 does not include an ML or an SDA in its scope. Also, the NRC provides no additional guidance for how an applicant would address an ML or an SDA. It is noted that industry expects ML or SDA guidance to be very similar to that of a DC. NRC should provide guidance on how the additional licensing pathways should be covered, i.e., the ML and SDA which are not explicitly addressed by NEI 21-07, Rev. 1.	Delete mention of ML and SDA as a covered approach in DG-1404 p. 1, paragraph 1; p. 6, paragraph 1; and p. 11, paragraph 1. In DG-1404 Section C on p. 11, add the following paragraph: NEI 21-07 explicitly addresses several licensing pathways: a combined license (COL) under 10 CFR Part 52 Subpart C; a design certification (DC) under 10 CFR Part 52 Subpart B; and a two-step license (CP/OL) under 10 CFR Part 50. Applicants using licensing pathways other than those explicitly covered in NEI 21-07 should base the SAR content on the licensing pathway covered by NEI 21-07 and most similar to the approach they are using. Applicants seeking a manufacturing license (ML) under 10 CFR Part 52 Subpart F or standard design approval (SDA) under 10 CFR Part 52 Subpart E should start with the guidance for a DC and make appropriate modifications. It will be up to the applicant to justify the guidance as applied.

File: DG-1404, TICAP Reg Guide			
Comment #	Location	Comment	Proposed Change
3	Section 2	As noted in NEI 21-07 and DG-1404, the application should address the site description. However, for an ML, this is not possible. Rather, site related information can only be provided in terms of postulated site parameters. Text should be added to this effect.	Please add text similar to the following: For an ML application the site description should describe the site characteristics as they affect the design, e.g., a site parameter envelope. Other site characteristics are left to the COL applicant to provide as well the site-specific information necessary to demonstrate that site characteristics fit within the plant parameter envelope.
4	Section 2, C.2.e	For an ML application, only those items specified in C.2.e that would impact the design or its manufacture should be included. The other items should be included in the COLA.	Please add text similar to the following: For an ML application, only those items identified in C.2.e (1) and (3) that are relevant to the design or manufacture of the reactor need to be included. However, the RGs applicable to the design as noted in (2) should be included in the ML application. All other information identified in (1) and (3) is left to the COL applicant to provide.

File: DG-1404, TICAP Reg Guide			
Comment #	Location	Comment	Proposed Change
5	Section 3	The site discussion in Section 3 is relevant to an OL or COL, but the ML applicant cannot address site-specific information. A caveat should be added that makes clear the ML applicant need only address information directly related to the design, leaving site-related information and analyses to the COL applicant.	Please add text similar to the following: ML applicants should address methodologies and analyses specific to the design and manufacture of the reactor. All other information, including site evaluations that cannot reasonably be addressed through a plant parameter approach, are left to the COL applicant.
6	Section 4, C.4.c	Although ML applicants may identify and provide relevant information on design features that may be useful to applicants to address the requirements for aircraft impact assessments or mitigation of beyond-design-basis events, ML applicants do not need to address these requirements. Instead, a COL or CP/OL applicant referencing an ML should address these topics. For an ML applicant, the additional material noted in C.4.c (1) Aircraft impact assessments and (2) Mitigation of beyond design-basis events should be left to the COLA.	Please add text similar to the following to C.4.c: ML applicants do not need to address aircraft impact assessments or mitigation of beyond-design-basis events. A COL applicant referencing an ML should address these topics.
7	Section 5	It is generally not possible for an ML applicant to perform the Integrated Evaluations. The evaluations of Chapter 5 should be left to the COL applicant. The exception is evaluation of defense-in-depth adequacy that is specific to design attributes for the manufactured reactor. Other aspects of the DID adequacy should be left to the COL applicant.	Please add text similar to the following to Chapter 5: An ML applicant need only address DID adequacy in terms of plant capability. All other information required under Chapter 5 is left to the COL applicant.

File: DG-1404, TICAP Reg Guide			
Comment #	Location	Comment	Proposed Change
8	Section 6, C.6.a (1)	The PDC relevant to an ML do not include construction nor all aspects of testing since some of the testing is relevant to the installed manufactured reactor.	Please add text to C.6.a (1), after the first sentence: ML applicants need only propose PDC to establish necessary design, fabrication and performance requirements. PDC relevant to testing as part of the manufacturing process should also be included. However, a COL applicant should include all of the PDC in their SAR.
9	Section 9	ML applicants, similar to CP applicants, can only address Plant Programs to the extent that they are needed to implement special treatments and meet reliability and performance targets for SR SSCs and NSRST SSCs.	Please revise the penultimate sentence in the first paragraph under Section 9 to read: "Construction permit and Manufacturing License applications…."

File: DG-1404, TICAP Reg Guide			
Comment #	Location	Comment	Proposed Change
10	p. 6-7	The penultimate sentence of the first paragraph on p. 6 does not appropriately capture the scope of NEI 21-07. TICAP is much broader than "… describing the scope and level of detail for the fundamental safety functions of a design necessary for developing the safety analysis for the design." Similarly, the first sentence of the fifth full paragraph of p. 7 is too narrow in its description of TICAP; NEI 21-07 goes well beyond addressing "…the portions of the SAR that describe the fundamental safety functions of the design." It is important to explicitly tie NEI 21-07 back to NEI 18-04.	On p. 6, change the penultimate sentence of the first paragraph to read "The technology inclusive methodology of NEI 21-07, Revision 1, provides a common approach to the development of those portions of the SAR that address the implementation of the Licensing Modernization Plan (LMP) methodology as described in NEI 18-04, Revision 1, and endorsed by the NRC in Regulatory Guide 1.233." On p. 7, change the first two sentences of the fifth full paragraph to the following single sentence: "TICAP is an industry-led guidance activity focused on the scope and depth of information to include in the portions of the SAR that address the implementation of the LMP methodology as described in NEI 18-04, Revision 1, and endorsed by the NRC in Regulatory Guide 1.233."
11	p. 7	Typo in 4th full paragraph. "...an SAR that includes..." should be "… a SAR that included..."	Please change as noted.
12	p. 7	The last sentence in the 4th full paragraph is confusing. It mentions "… a SAR that includes technical specifications, an emergency plan, and other information such as physical security plans." Technical specifications are technically part of the license, not the SAR. The other documents are typically submitted separately, not as part of the SAR.	Please change to "… a complete non-LWR application should include, among other things, a SAR, proposed technical specifications, an emergency plan, and other information such as physical security plans."

File: DG-1404, TICAP Reg Guide			
Comment #	Location	Comment	Proposed Change
13	p. 12-13	Addition C.2.b is unnecessary. NEI 21-07, Sections A.1 and A.3, make it amply clear that the information addressed in NEI 21-07, Rev 1, is not the totality of the information required of the applicant. Moreover, the ARCAP Roadmap ISG reinforces the point. It is simply not credible that an applicant would be unclear on this point.	Please delete Addition C.2.b.
14	p. 13	Addition C.2.c is unnecessary. It provides guidance to "… non-LWR applicants pursuing a CP under 10 CFR Part 50 using a risk-informed, performance-based approach other than the LMP …" Such an applicant is clearly beyond the scope of NEI 21-07, which was developed for applicants using LMP (see NEI 21-07 Section A). It does not make sense for a regulatory guide endorsing NEI 21-07 to also attempt to address all possible deviations from NEI 21-07. NEI 21-07 Section C.1.3.1 places the onus on the applicant which deviates from NEI 18-04 to address and justify those deviations.	Please delete Addition C.2.c.
15	p. 13	Addition C.2.d is unnecessarily prescriptive. Industry does not contest the requirement for providing the information, but would like the flexibility of putting it in Chapter 2 if more appropriate for a particular applicant.	Please add the following to C.2.d: "… radioactive materials either along with the intended use of the reactor in Chapter 1 or in Chapter 2."

16	p. 13	Industry has concerns with both the letter and the spirit of Addition C.2.e, which would levy substantial documentation requirements that are largely not applicable to non-LWRs, thereby complicating the development of an application and the subsequent staff review. With respect to Item (1), generic safety issues, unresolved safety issues, and TMI action items are largely LWR-centric and not applicable to advanced non-LWRs; there should be no presumption to the contrary. There is no regulatory requirement that applicants address LWR GSIs and USIs in the SAR. The regulatory requirement to address TMI requirements in 10 CFR 50.34(f) is applicable only to LWRs. 10 CFR 52.47(a)(8) invokes most of the TMI requirements in 10 CFR 50.34(f) to the extent they are "technically relevant." This term, as well as the terms "technically applicable to the design" and "directly applicable to the design" used in DG-1404 Addition C.2.3, are undefined and subjective, and will be fertile ground for interpretation disagreements between applicant and regulator. At most, the TMI requirements should be applied only to Part 52 applicants. NRC expectations from LWR licensing experience should not be applied blindly to advanced reactors following NEI 18-04 guidance. In fact, applying LWR GSIs, USIs, and TMI action requirements to non-LWR advanced reactors stands the concept of risk-informed, performance-based regulation on its head. It adds an unnecessary backward-looking deterministic framework on top of the systematic evaluation of safety provided by NEI 18-04.With respect to Item (2), regulatory guides are not regulatory requirements and most were developed for light water reactors. There should be no presumption that regulatory guides are to be applied to non-LWRs, and the NRC should be clear on that point in its	Please delete Addition C.2.e. However, if the addition is retained, to the extent the NRC uses terms like "technically relevant" and "directly applicable to the design," clarify that the NRC does not presume applicability of LWR regulatory guidance to non-LWRs following the NEI 18-04 methodology.Furthermore, if the NRC insists that applicants provide lists of documents in Chapter 1 (e.g., regulatory guides and/or codes and standards), make it clear that those lists are simply catalogs of material addressed elsewhere in the SAR.

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		guidance. The NEI 18-04 approach to demonstrating safety is not centered around a deterministic checklist approach of following prescriptive guidance. If the NRC insists on including a requirement that the applicant catalog items like reg guides in Chapter 1 of the SAR, that guidance should make it clear that the Chapter 1 material is simply a list of items included by the applicant in subsequent sections of the SAR. The discussion relative to Item 3 (codes and standards) is similar. Codes and standards will be addressed in appropriate sections of the SAR. If the NRC insists on including lists of codes and standards in Chapter 1 of the SAR, it should be with the understanding that any substantive information is reserved for later chapters.	
17	p. 14	Paragraph 5 states "The NRC staff notes that additional guidance is being considered for development that would supplement the guidance in RG 1.247. Appendix A of this document identifies guidance that is being considered for development that could result in a revision of this Draft RG." These sentences are speculative and do not provide useful guidance to an applicant. Appendix A stands on its own and does not need specific mention with respect to the PRA. In the interest of removing superfluous and unnecessary material, these sentences should be deleted. If additional guidance is promulgated and deserves mention in a particular reg guide, that reg guide may be revised at the appropriate time.	Please delete sentences 2 and 3 of paragraph 5.

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18	p. 15	Clarification C.3.a is not necessary. It addresses separate licensing documents that are incorporated by reference in the SAR, and states that NEI 21-07, Rev. 1, does not address them. In fact, NEI 21-07 does address them thoroughly in Section B.3, which includes a reference to NEI 98-03, Rev. 1, for additional information. Moreover, this "clarification" should not be specific to Section C.2 of NEI 21-07. If the clarification was actually needed, it should be applied generically to the entire SAR. However, as noted above, it is not needed because NEI 21-07 Section B.3 already addresses the issue generically for the entire SAR.	Please delete Clarification C.3.a.
19	p. 15-16	Clarification C.3.c(2) (i.e., Option 2) uses undefined terms "bounding DBA" and "bounding BDBE." It also refers to "the bounding DBA" (presumably there is one bounding DBA) and "a bounding BDBE," which implies there are more than one bounding BDBE.	Please provide additional clarity on the meaning and use of the terms.

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20	p. 15-16	In Addition C.3.c the staff provides two options for demonstrating the facility meets the requirements of 10 CFR 50.34(a)(1)(ii)(D) or 10 CFR 52.79(a)(1)(vi) and the PDC for the control room (if applicable); however, it does not appear that these two options are the totality of options with respect to the staff's expectations for an assumed "major accident." Given the design of the plant and its safety features, when using the NEI 18-04 approach there may be no DBA or BDBE that would be considered a "major accident" due to lack of fuel damage or release. In this case, is it the NRC's expectation that the applicant must request an exemption in accordance with Option 1? Could an alternate approach (Option 3) be pursued by postulating a specific event only for the purposes of satisfying the "major accident" definition? It would appear this approach would satisfy regulations, but this is not provided as an option in DG-1404. There may be other alternatives as well, and the guidance should not foreclose them. The current wording ("… the applicant has two options …") seems to indicate the applicant must choose either Option 1 or Option 2.	Please revise the text to allow for Option 3 and clarify that applicants are free to propose approaches other than the stated options.

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21	p. 16	There is a nuance associated with Addition C.3.d. Industry agrees with the addition of "Identification of the sources of radionuclides addressed and the sources of radionuclides that were screened out" to the items from the Section C.2.1.1 list that should be addressed in a CP application. The nuance is that excluding items from the scope of the CP PRA is not the same as screening them out. Some sources may be excluded at the CP stage but included later.	Please insert the new penultimate sentence in the addition as shown below."It is noted that sources outside the scope of the CP PRA and therefore not listed in the PSAR may then become part of the PRA scope, and at that point they may or may not be screened out for the purposes of the OL PRA description. As noted above..."
22	p. 17	Clarification C.3.e is unnecessary. The NEI 21-07 guidance makes it clear that the description of the PRA in the PSAR goes beyond the "simple statement." NEI 21-07 states the "simple statement" applies only to the eventual qualification of the PRA at the OL stage, and not to the totality of PRA-related documentation for the PSAR. NEI 21-07 goes on to address clearly what documentation is needed (beyond the "simple statement") for the CP. The NEI 21-07 guidance states "In either case, the applicant should ..." so there is no ambiguity. In fact, the NRC states in its clarification "As noted in NEI 21-07..." The existing guidance in NEI 21-07 already addresses peer review and CP documentation - no further clarification is needed related to the "simple statement."	Please delete Clarification C.3.e.
23	p. 17	Clarification C.3.f is unnecessary. The "Note" is clearly part of, and applies to, the main section of NEI 21-07 C.2.1.1, which is the baseline guidance for a Part 50 operating license and a Part 52 combined license. Obviously, the note does not apply to the section below it, which addresses CP content.	Please delete Clarification C.3.f.

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24	p. 17	The information in numbered items (1), (2), and (3) under Addition C.3.g is a restatement of material in NEI 18-04 and NEI 21-07 and it is not clear why it needs to be restated in the regulatory guide. Similarly, the first sentence of the last paragraph is a restatement of NEI 18-04 information and is not needed in the regulatory guide. Moreover, the statement in the sentence that special treatments will be determined by an integrated design process panel (IDPP) is not an accurate depiction of the NEI 18-04 and NEI 21-07 text. NEI 18-04 allows for IDPPs but does not mandate them.	Please address the issues raised in the comment as noted, i.e., remove the numbered items and delete the first sentence of the last paragraph.

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25	p. 17	Addition C.3.h is unnecessary and overreaching. First, the term "analysis and calculation methodologies" is not clearly defined. It could refer to anything that involves a calculation. The SAR is not the compendium of all analyses and calculations related to a nuclear power plant, but this additional guidance in DG-1404 could be interpreted that way. It should be noted that NEI 21-07 already contemplates SAR Chapter 2 as a home for analyses such as site related information and analyses used to develop the design basis hazards levels (DBHLs) (see last paragraph of C.2 introduction on NEI 21-07). Moreover, the NRC addition was not discussed during the extensive interactions preceding the submittal of NEI 21-07. It defeats the purpose of SAR Chapter 2 as intended in NEI 21-07. SAR Chapter 2 was never intended to be the mandatory home of all analyses and calculation methodologies. Industry intended Chapter 2 primarily as a repository of convenience for cross-cutting information or evaluations (see first paragraph of the C.2 introduction on NEI 21-07). This concept was clearly communicated to the NRC, and the NRC raised no objection at the time. If retained and followed, Addition C.3.h would prevent applicants from describing analyses for a particular design basis accident (not repeated elsewhere) where it most logically belongs - i.e., in SAR Chapter 3, with the DBA description.	Please delete Addition C.3.h.

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26	p. 18	The introductory section of addition and clarification C.4.a is confusing and does not provide clear guidance. It is counter to the discussions in 2021 and 2022 about documenting dose calculations performed in the PRA. NEI 21-07 contained modifications to Section C.2.1.1 intended to address the NRC's desire to see documentation of the PRA methodology for calculating doses associated with anticipated operational occurrences (AOOs), design basis events (DBEs), and beyond design basis events (BDBEs). In fact, Clarification C.4.b states that the guidance in C.2.1.1 is adequate for the purpose – so why is Clarification C.4.a needed at all? If the applicant's information provided in SAR Chapter 2 on this aspect of the PRA is not adequate, it should be addressed in the review of that applicant's application, not in this guidance.	Please delete Addition and Clarification C.4.a.
27	p. 18	C.4.a(1) is not clear. What "supporting data" is desired here? It's not clear what information is being requested and whether that information would already be reviewed during a PRA audit. Can the NRC provide any specific examples of what is sought or provide the analogous information for a LWR SAR? The intent of the modifications provided in NEI 21-07, Rev. 1 to C.2.1.1 was to spell out the necessary and sufficient information. Clarification C.4.b indicates that NEI 21-07 subsection C.2.1.1 is adequate which conflicts with this Addition and Clarification C.4.a(1). Moreover, SAR Chapter 3 is not the appropriate place to address quantitative health objectives (QHOs). They are covered in SAR Chapter 4.	Please delete Addition and Clarification C.4.a(1).

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28	p. 19	Clarifications C.4.a(2), C.4.a(3), and C.4.a(4) are all unnecessary. With respect to AOOs, the guidance in Section C.3.3.1 states "The following information should be provided for any AOO with a release." A bulleted list follows. There is no possible interpretation that the information is not required. However, the NRC clarification is that all of the information be provided. The clarification is completely unnecessary. With respect to DBEs and BDBEs, the same logic applies. The words in Section C.3.4.1 states for DBEs: "For the most limiting DBE that was used to map into each DBA ... the following information should be provided." The NRC clarification that "... all of the information ... should be provided" is superfluous and unnecessary. Similarly, the words in Section C.3.5.1 for BDBEs are "The information below should be provided for any high consequence BDBEs ..." The NRC's admonishment that "all of the information ... should be provided" is again unnecessary.	Delete Clarifications C.4.a(2), C.4.a(3), and C.4.a(4).

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29	p. 19	Regarding Clarification C.4.b, industry does not agree that the second-to-last paragraph in each of NEI 21-07 Sections C.3.3.1, C.3.4.1, and C.3.5.1 conflicts with the guidance in NEI 21-07 Section C.2.1.1 on the level of detail in the SAR for AOOs, DBEs, and BDBEs respectively. Industry agrees with the NRC statement in Clarification C.4.b "Section C.2.1.1 … contains adequate guidance on the level of detail in the SAR to describe non-DBA LBEs." However, industry does not agree that the statement is needed as a clarification in the reg guide. By definition, the guidance is adequate and there is no need to add such statements on the validity of NEI 21-07 SAR Chapter 2 guidance, particularly in NEI 21-07 guidance for SAR Chapter 3. Regarding the remainder of the clarification, it is essentially equivalent to the guidance that is already in NEI 21-07 Section C.3.3.1 paragraph 3 on event-specific information, so it is not needed. Note: The industry assumes that the NRC's reference to the second-to-last paragraph in NEI 21-07 Section C.3.1.1 was actually intended to be to the 4th from last paragraph which begins "For AOOs that involve a 30-day EAB dose …"	Please delete Clarification C.4.b.

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30	p. 19	Industry understands that NRC wishes to include certain information related to deterministic events and requirements in SAR Chapter 3. Industry is amenable to that approach but would like to ensure the events are clearly delineated as separate from licensing basis events (AOO, DBEs, BDBEs, and DBAs) as defined in NEI 18-04. Therefore, it would be most appropriate to put that information in a new Section 3.7, Special Event Analyses, in SAR Chapter 3.	Modify C.4.c to read: Addition: In addition to the material identified in NEI 21-07, Revision 1, Section C.3 ~~Chapter 3 of the SAR should also discuss the following~~ that is derived by following the methodology of NEI 18-04, the applicant should address certain deterministic events and requirements in a new SAR Section 3.7, Special Event Analyses, as described below:
31	p. 19	The guidance provided for aircraft impact assessments [C.4.c(1)] is somewhat redundant to guidance provided in the draft ARCAP Roadmap DANU-ISG-2022-01 (p. 39 of 56). The ARCAP Roadmap guidance is more thorough and should be used, but DG-1404 may be the more appropriate location. Guidance should be provided in one document, not in multiple documents with different content in each.	Please place the aircraft impact assessment guidance from the ARCAP Roadmap into one location – either the ARCAP Roadmap or DG-1404. Delete the aircraft impact assessment guidance from the other location so the guidance is not spread among multiple documents.
32	p. 19-20	Addition C.4.c(2) addresses mitigation of specific beyond design basis events per 10 CFR 50.155. Industry requests NRC include in this addition a note that the information is not required at the CP stage unless the applicant is requesting design finality.	After the last bullet, please add words to the effect of "Applicants that are not requesting design finality for mitigation of beyond design basis events are not required to provide any information on the topic at the CP stage."

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33	p. 21	NRC Addition C.5.a pertaining to defense-in-depth (DID) is not clear and it does not appear to be necessary, as discussed below. (1) The first two sentences are essentially quotes from NEI 21-07 and are therefore not needed. (2) The next two sentences state "The CP application should provide a discussion in the SAR to establish DID adequacy. A discussion in the SAR to implement the DID adequacy assessment processes in RG 1.233 is considered acceptable for this purpose." Regarding the first of the two sentences, a discussion cannot establish DID adequacy, so industry believes the NRC may have intended to say "should provide a discussion of the approach to establishing DID adequacy." Moreover, the approach to establishing DID adequacy is already documented in NEI 18-04 and does not need to be repeated. Regarding the second of the two sentences, it appears the NRC is soliciting a commitment on the part of the applicant to follow the guidance in Regulatory Guide 1.233 for DID. This is not necessary, because NEI 21-07 subsection C.1.3.1 already requires the applicant to identify departures from NEI 18-04 and RG 1.233, and describe them in more detail in the appropriate section, which for DID is SAR Section 4.2.c) The remaining sentences address the situation in which the applicant does not intend to follow RG 1.233, and would then require an explanation of how the applicant intends to address DID. As noted above, this is already a requirement of NEI 21-07, and it does not need restatement in the regulatory guide.	Please delete Addition C.5.a.

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34	p. 21-22	Addition C.5.b requests detailed information underpinning the PRA calculations addressing QHOs in SAR Section 4.1. Industry believes the guidance goes well beyond what is needed for a SAR. The PRA methods would be addressed in the PRA peer review, and the detailed information would be available for NRC to inspect in an audit.Furthermore, it is not clear NRC appreciates the scope of this requirement. The requests are quite broad – e.g., "(5) key modeling assumptions." Because these are integrated analyses, the requirements pertain to each and every PRA realization that involves an offsite dose. Another specific concern is "(8) uncertainty/sensitivity analysis performed." No definition is provided as to what is intended. Depending on the interpretation, the amount of information required to satisfy this desire for each and every part of the integrated analyses could be huge. The approach prescribed in NEI 18-04 and NEI 21-07 is to rely on conformance with the non-LWR PRA Standard, provide general descriptive PRA information in the SAR, and encourage regulatory audits to address details of the analyses if necessary. Literal compliance with the expectations laid out by the NRC in Addition C.5.b could result in levels of detail on the order of those seen in SAR Chapter 19 of advanced light water reactors licensed under Part 52 – a level of detail which, it was thought, all parties agreed was excessive and inappropriate.	Please delete Addition C.5.b.

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35	p. 22	Addition C.5.c is unnecessary and, at the very least, inappropriate for SAR Chapter 4. Per discussions between industry and the NRC, human factors are to be addressed in SAR Chapters 6 and 7, in conjunction with the associated SSCs, and in SAR Chapter 11 per ARCAP. Appropriate guidance is already provided for HFE in other SAR chapters. Moreover, this proposed addition does not provide clear and actionable guidance for an applicant. It is more of a "kitchen sink" approach of "tell me everything about human factors." Such guidance is not consistent with the goal of focused, transparent, risk-informed guidance; it is more in line with a "business as usual" LWR approach.	Please delete Addition C.5.c.
36	p. 22	Addition C.5.d would require that the applicant provide a change control process for DID in the SAR. This requirement is inappropriate for a SAR, and there is no precedent for it. Change control is an operational issue. Moreover, industry is working with the NRC on change control for licensees who followed NEI 18-04. Specifically, the Technology Inclusive Risk Informed Change Evaluation (TIRICE) Project and draft NEI Guidance Document NEI 22-05 should address the issue.	Please delete Addition C.5.d. Additionally, consider adding NEI 22-05 to the list of guidance being developed in Appendix A of the NRC Reg Guide.
37	p. 22-23	Addition C.6.a(1) provides a discussion of PDC. However, it is not clear that the discussion includes any new guidance that is not already provided in NEI 21-07.	Please delete Addition C.6.a(1) or clarify what is actually new guidance.

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38	p. 23	Clarification C.6.a(2) discusses the "two-tiered" approach to PDC provided in NEI 21-07. However, it is not clear what part of the discussion is actually clarifying; it seems instead to be an endorsement of the approach.	Please delete Clarification C.6.a(2) or clarify what is actually being clarified.
39	p. 23	Addition C.6.a(3) addresses alternative approaches to PDC and potential exemption requests. The material seems largely to be covered by NEI 21-07 Section C.5.3.	Please delete Addition C.6.a(3) or clarify what is actually new guidance.

40	p. 23	Addition C.6.b addresses fuel qualification. Industry considers this additional guidance to be unnecessary and, as proposed, inappropriate, and counter-productive. Industry also notes that this addition raises an issue that was never discussed at any significant level of detail during industry-NRC interactions prior to submittal for endorsement. The issue was essentially absent from the NRC's draft additions, clarifications, and exceptions that formed the basis for detailed interactions during the fall and winter of 2021, prior to submittal of NEI 21-07, Rev. 1 for endorsement. First, fuel qualification should essentially be done at the time of a license application, with the possible exception of some confirmatory items. The emphasis for fuel qualification should be during pre-application interactions as is discussed in DANU-ISG-2022-01, Appendix A. The NRC proposal to address fuel qualification expectations in the SAR, as reflected in this proposed addition, is wholly out of sequence and unnecessary, and it detracts from the guidance overall. Second, the document states "The reactor core and its fuel are generally classified as SR" as if that point justifies this special deterministic carve out of SAR documentation requirements for fuel. It does not. NEI 18-04 provides a systematic means of identifying safety related structures, systems, and components, based on the approach taken to satisfy Required Safety Functions. Provisions are already in place to address safety-related SSCs in SAR Chapter 6. It is certainly expected that fuel performance will be particularly important to <u>some</u> advanced reactor designs, and if so the SAR documentation related to fuel will be more extensive than other SSCs, but there is no	Please delete Addition C.6.b.

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		need to arbitrarily address fuel in a special way as proposed in the text. Third, there is no rationale for addressing fuel qualification in SAR Chapter 5, as proposed herein. SAR Chapter 5 covers safety functions, design criteria, and SSC classification, but the document proposes to use it as a repository for additional information on one particular SSC (fuel). Fourth, the last two paragraphs of the "addition" are written like guidance for the staff, not for an applicant. If such staff guidance were needed, NRC should place such guidance in an ISG, not in a regulatory guide with the stated primary purpose of providing guidance to applicants. In summary, the approach taken by the NRC to fuel qualification is quite troubling to industry. Placing unnecessary special emphasis on certain SSCs is not technology-inclusive, and it detracts from the logical and systematic sequencing of NEI 18-04 and NEI 21-07 to do so. SAR Chapter 5 progresses in a step-wise, logical manner until it hits the rock of unnecessary and inappropriate fuel qualification guidance. This approach should be reconsidered.	

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41	p. 24	The last two sentences of the first paragraph of DG-1404 Section 7 are confusing and do not convey appropriate guidance to the applicant. The penultimate sentence requests a discussion of how the applicant intends to confirm, at the OL stage, that the reliability and capability performance targets assumed in the PRA have been met. NEI 21-07, Section C.6.2 already addresses reliability and capability targets, including plant programs used to maintain them. Moreover, Section C.6.2 makes it clear that reliability and capability targets are not "assumed in the PRA" as stated by DG-1404, but instead informed by PRA information. The last sentence of the first paragraph in DG-1404 Section 7 is confusing because it convolves inappropriately special treatments with testing and validation. Testing and validation are types of special treatments.	Please delete the last two sentences of the first paragraph of DG-1404 Section 7.
42	p. 24	The second paragraph of DG-1404 Section 7 is not necessary and it conveys inaccurate information. The LBE selection process is addressed in SAR Chapter 3, not SAR Chapter 2. The LBE selection process does not determine the Required Safety Functions. Footnote 10 also contains the inaccuracy "determined in the LBE selection process" and it is mostly a rehash of some elements of the NEI 18-04 methodology. In total, the paragraph and the footnote provide no useful guidance to an applicant.	Please delete the second paragraph of DG-1404 Section 7 and the associated footnote 10.

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43	p. 25	Paragraphs 3-5 of DG-1404 Section 7 repeat information from NEI 21-07 and NEI 18-04. It is not clear what purpose the information serves in DG-1404.	Please delete paragraphs 3-5 of DG-1404 Section 7.
44	p. 25	The first sentence of the sixth (last) paragraph of DG-1404 Section 7 states "Chapter 6 also establishes the DBHLs associated with NSRST SSCs and SSCs that are non-safety related with no special treatment (NST)." The sentence could be taken to imply there are different DBHLs associated with safety-related SSCs, which is not the case. A DBHL is a DBHL. The second sentence states "The design requirements for NSRST and NST SSCs are determined by the need to protect SR SSCs in the performance of their RSFs from adverse effects from the failure of NSRST or NST SSCs during and after DBEs." In fact, that is only one source of design requirements for NSRST and NST SSCs. Moreover, NSRST SSCs could have special treatments associated with DBHLs but not connected with a need to protect SR SSCs. The discussion in NEI 21-07 is already adequate in this area, and the additions in this paragraph in DG-1404 are confusing.	Please delete the sixth (i.e., last) paragraph of DG-1404 Section 7.
45	p. 25	Clarification and Addition C.7.a is unnecessary. The guidance is already provided in NEI 21-07 Section C.6.1.1.	Please delete Clarification and Addition C.7.a.

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46	p. 25	Related to Clarification and Addition C.7.a, there appears to be an inconsistency between the guidance in NEI 21-07 and DG-1404, compared to DANU-ISG-2022-01 (ARCAP Roadmap). Pages 12-13 of the ARCAP roadmap indicate that the information related to translation of DBHLs to loads (and evaluation of those loads) would be placed in SAR Chapters 5 and 6, while NEI 21-07 and DG-1404 would put that information in Chapter 2 or in external reports referenced in the SAR.	Please review and resolve the discrepancy.
47	p. 26	There is an inconsistency between Footnote 12 in C.7.b(1) and the actual footnote at the bottom of the page, which is labeled Footnote 11.	Please fix the footnote numbering.

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48	p. 26	Addition C.7.b(1) is unnecessary and inappropriate. The addition would put special requirements on certain safety-related SSCs based on what is apparently an arbitrary factor - they are safety-related instrumentation and control (I&C) systems. The additional requirements are not appropriate as the NEI 21-07 guidance already requires that special treatments be listed for all safety-related SSCs. The proposed text would include a special requirement to "describe the special treatments" and "analyze their capability to perform their credited safety functions" (presumably "their" refers to the I&C systems, not the special treatments). No justification is provided for this additional and burdensome SAR documentation requirement, nor why it is being applied to I&C. This type of information would be available in the design records and available for audit, if needed.This requirement is entirely new and was never discussed as part of the extensive discussions that took place between industry and NRC prior to the submittal of NEI 21-07 Revision 1 for endorsement.	Please delete Addition C.7.b(1)
49	p. 26	Addition C.7.b(2) is unnecessary and inappropriate. The addition imposes an additional SAR documentation requirement to justify the use of codes and standards. This requirement goes beyond standard practice for light water reactors. Moreover, it was never proposed by the NRC during the extensive discussions that took place between industry and NRC concerning NEI 21-07.	Please delete Addition C.7.b(2)

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50	p. 26	The last two sentences of the first paragraph of DG-1404 Section 8 are confusing and do not convey appropriate guidance to the applicant. The penultimate sentence requests a discussion of how the applicant intends to confirm, at the OL stage, that the reliability and capability performance targets have been met. NEI 21-07 Section C.6.2 already addresses reliability and capability targets, including plant programs used to maintain them. It is not envisioned that all targets be fully confirmed at the CP stage, or even provided on a preliminary basis. The penultimate sentence could be interpreted as meaning that the applicant must provide an SSC by SSC discussion of each target at the CP stage, which we hope was not the intention. The last sentence of the first paragraph in DG-1404 Section 8 is confusing because it convolves inappropriately special treatments with testing and validation. Testing and validation are types of special treatments.	Please delete the last two sentences of the first paragraph of DG-1404 Section 8.
51	p. 26	The second paragraph of DG-1404 Section 8 is not necessary and does not relate to the rest of Section 8.	Please delete the second paragraph of DG-1404 Section 8.

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52	p. 27	Addition C.8.a(1) is unnecessary and inappropriate. The addition would put special requirements on certain NSRST SSCs based on what is apparently an arbitrary factor – they are I&C systems. The additional requirements are not appropriate as the NEI 21-07 guidance already requires that special treatments be identified for all NSRST SSCs. The text would include a special requirement to "describe the special treatments" and "analyze their capability to perform their credited safety functions" (presumably "their" refers to the I&C systems, not the special treatments). No justification is provided for this additional SAR documentation requirement, nor why it is being applied to I&C. This NRC requirement is entirely new and was never discussed as part of the extensive discussions that took place between industry and NRC prior to the submittal of NEI 21-07 Revision 1 for endorsement.	Please delete Addition C.8.a(1)

File: DG-1404, TICAP Reg Guide			
Comment #	Location	Comment	Proposed Change
53	p. 27	The last two sentences of paragraph 1 of DG-1404 Section 9 are not necessary. Guidance for CP applications for Plant Programs is provided on NEI 21-07 and is adequate for the purpose. The penultimate sentence of the DG-1404 Section 9 paragraph 1 is unclear. Is the NRC seeking some kind of commitment at the CP stage to develop certain programs? If so, it should state that point directly, not ask for a "discussion." There seems to be no basis for the need for a commitment of that type. NEI 21-07 Section C.8 already provides ample guidance on what is needed in the SAR associated with the operating license application. If the NRC considers that an addition to the guidance is necessary (a position with which industry does not agree), NRC should call it out specifically as an addition and justify it.	Please delete the last two sentences of paragraph 1 of DG-1404 Section 9 or clarify the intent.
54	p. 31	The ADAMS accession number for Reference 14 should be ML102510405 not ML1025210405.	Please correct the ADAMS accession number.