

Analysis of Public Comments on Draft ISG DANU-ISG-2022-01

Advanced Reactor Content of Application Project

“Review of Risk-Informed, Technology-Inclusive Advanced Reactor Applications-Roadmap”

Comments on the draft interim staff guidance (ISG) are available electronically at <http://www.nrc.gov/reading-rm/adams.html>. From this page, the public can access the Agencywide Documents Access and Management System (ADAMS), which provides text and image files of the U. S. Nuclear Regulatory Commission (NRC) public documents. The following table lists the comments the NRC received on the draft ISG.

Comment Number	ADAMS Accession Number	Commenter Affiliation	Commenter Name
NRC-2022-0074 – DRAFT 0003	ML23167A034	Hybrid Power Technologies, LLC	Michael F. Keller
NRC-2022-0074 – DRAFT 0004	ML23174A049	Nuclear Energy Institute	Ben Holtzman
NRC-2022-0074 - DRAFT 0005	ML23213A060	Hybrid Power Technologies, LLC	Michael F. Keller
NRC-2022-0075 – DRAFT 0004	ML23234A052	X-energy, LLC	Travis Chapman
NRC-2022-0074 – DRAFT 0007	ML23234A040	SMR, LLC	Andrew Brenner
NRC-2022-0074 – DRAFT 0006	ML23234A039	Nuclear Energy Institute	Ben Holtzman

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NRC-2022-0074 DRAFT 0003-1	Regulations.gov Site	Not Applicable	Include in regulations.gov, as downloadable files, all documents for which public comments are being solicited	The NRC staff responded to the request as documented in ML23174A004. The NRC staff response states in part: “...the regulations.gov website identifies the documents (the ARCAP (Advanced Reactor Content of Application Project) ISGs and the TICAP (Technology Inclusive Content of Application Project) DG (Draft Guide)) for which the NRC staff is seeking public comment. While the Federal Register notices for the ARCAP ISGs reference NRC-issued, approved, or endorsed documents, the NRC staff is only requesting comment on the ARCAP ISG’s

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				proposed use of the referenced documents, and not the referenced documents themselves. As such, the NRC staff will not be providing documents referenced in the ARCAP ISGs on regulations.gov as this could imply that the NRC staff is seeking comments on these documents.”
NRC-2022-0074 DRAFT 0003-2	Extension of Comment Period	Not Applicable	Alter the Federal Register notices to establish a reasonable, staggered schedule for document review and comment by the public.	The NRC staff responded to this request as documented in ML23174A004. As a result of this request and the request from the Nuclear Energy Institute (NEI) (see NRC-2022-0074 DRAFT 0004-1) the NRC staff extended the comment period for nine interim staff guidance documents and DG-1404, revision 0, from July 10, 2023, to August 10, 2023.
NRC-2022-0074 – DRAFT 0004 -1	Comment Period	Not Applicable	Requested that the comment period for the nine advanced reactor content of application project (ARCAP) interim staff guidance documents and DG-1404 be extended by 30 days.	The NRC staff responded to this request as documented in ML23171B098. As a result of this request and the request from Hybrid Powers Technologies, LLC (see NRC-2022-0074 DRAFT 0003-2) the NRC staff extended the comment period for nine interim staff guidance documents and DG-1404, revision 0, from July 10, 2023, to August 10, 2023.
NRC-2022-0074 DRAFT 0005-CL-1	Use of Codes and Standards	Cover letter	The Nuclear Modernization Act reinforces earlier Congressional direction that industry Codes and Standards are lawful mechanisms for compliance with the Code of Federal Regulations. It is unclear why the staff insists that codes/standards must be staff endorsed. The staff should not state “staff endorsement” is needed unless the	The NRC staff disagrees with the comment. It is the NRC’s policy to (i) involve all interested stakeholders in the NRC’s regulatory development processes, (ii) participate in the development of consensus standards that support the NRC’s mission, and (iii) use consensus standards developed by voluntary consensus

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			code/standards has been shown to be materially deficient.	standards bodies consistent with the provisions of the National Technology Transfer and Advancement Act of 1995 (NTTAA) (Public Law 104-113). However, the NRC has not adopted an automatic endorsement of consensus standards as suggested by the commenter because (i) such an action could constitute an unlawful delegation of power to a private entity and (ii) possible efficiency gains of such a process would be limited compared to existing practice of review and endorsement (with appropriate exceptions and clarifications) of consensus codes and standards for use by applicants and licensees to address specific topics important to the safety of a nuclear power plant. NRC review is required in both the current process of reviews performed at the request of standards development organizations and the proposed case-by-case reviews to determine if changes or limitations on the use of a standard are needed to ensure compliance with regulations, or to be technically correct. (See SECY-99-029, "NRC Participation in the Development and Use of Consensus Standards," January 28, 1999, available at http://www.nrc.gov/reading-rm/doc-collections/commission/secys/1999/secy1999-029/1999-029scy.pdf, and the related Staff Requirements Memorandum dated February 17, 1999 (ML003751820). No change made to the ISG.

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NRC 2022 0074 DRAFT 0005-CL-2	ISG structure	Cover letter	The ISG should identify key topic areas and require the applicant to identify how applicable industry codes and standards implement the topics. If summary information from some elements of the codes and standards is considered necessary for inclusion in the application, this should be identified in the ISG.	The NRC staff disagrees with the comment. It is the responsibility of applicants to identify the design features, human actions, and programmatic controls needed to fulfill safety functions and NRC regulations. Applicants are afforded some flexibility in when and how to use consensus codes and standards except for those cases where specific codes and standards are incorporated into regulations. The NRC's practice of endorsing consensus codes and standards in regulatory guides in response to requests from standards development organizations provides appropriate exceptions and clarifications and otherwise provides guidance on important information for applicants to provide in licensing submittals related to the use of the subject consensus standard. Applicants may also use and reference consensus standards not previously reviewed and endorsed by the NRC to address specific topics and the NRC staff will consider such references on a case-by-case basis. No change made to the ISG.
NRC-2022-0074 DRAFT 0005-CL-3	Reference to additional guidance documents	Cover letter	The ISG contains references to well over 100 regulatory guidance documents of various types. The ISG states "Additional guidance documents referred to in this DG may provide useful information to applicants, the NRC staff or both." The logical conclusion is that the staff will use these guidance documents to impose	The NRC staff partially disagrees with the comment but recognizes there may be confusion on this point and clarified the language. The inclusion of additional documents for the purpose of providing "useful information to applicants" is not intended to impose additional requirements. It is to provide applicants with

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			requirements on the applicant or require the applicant to justify not conforming to the guidance documents.	background information they may, or may not, want to review to assist in preparing their applications. The staff does not use these documents to impose additional requirements or require additional justification. That said, it may be useful to better explain in the ISG the purpose of the additional guidance documents to avoid confusion. The NRC staff added the following sentences to page 9, the 3rd paragraph, page 11, the 3rd paragraph, page 16 the 3rd paragraph, page 17 the 3rd paragraph, page 18 the 1st paragraph, page 20 the last paragraph, page 22 the last paragraph, page 24 the last paragraph, page 26 the 2nd paragraph, page 28 the 2nd paragraph, page 29 the 1st full paragraph, page 30 the last paragraph, page 31 the last paragraph, page 33 the 1st paragraph, page 34 the 2nd paragraph, page 35 the 1st paragraph, and page 36 the 1st paragraph: “The additional guidance documents are provided as background that an applicant may find useful in preparing the application. Although the ISGs referenced in DANU-ISG-2022-01 (this Roadmap) indicate that some of these documents are acceptable for meeting identified NRC regulations, they are not requirements.”
NRC-2022-0074 DRAFT	Adding unwarranted requirements	Cover letter	The staff appears to be manufacturing new license obligations. The staff is using “risk-informed, performance based” as an excuse to add unwarranted new requirements. Also, citing the unapproved 10 CFR 53 or	The NRC staff disagrees with the comment. The ISG describes one approach that the staff finds acceptable when applicants are using the LMP methodology to meet the licensing

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0005-CL-4			possible future revisions to the CFR is inappropriate.	requirements in 10 CFR Part 50 or 52. Since no examples or explanation were provided, the staff does not understand the basis for this comment. Any reference to the performance-based technology-inclusive regulatory framework for licensing nuclear power plants designated as 10 CFR Part 53 now under development is only for the applicant's information and does not impose new requirements. No change made to the ISG.
NRC-2022-0074 DRAFT 0005-1	Rationale	Pg 6	Delete and replace with "10 CFR 50/52 are partially directed towards LWRs and as such modified regulatory information is necessary to support advanced reactors license applications." This statement avoids the numerous serious issues associated with coercive use of guidance documents.	The NRC staff disagrees with the comment. The "Rationale" statement in the ISG provides a detailed explanation of why the ISG is needed. The basis for the comment is unclear and the comment does not identify "the numerous serious issues" sought to be voided. No examples or explanations were provided. No change made to the ISG.
NRC-2022-0074 DRAFT 0005-2	Purpose of informational regulatory guidance	Pg 9 – Guidance Docs Referenced in DG-1404	This is the same comment as number 0005-CL-3 above.	See response to comment 0005-CL-3 above.
NRC-2022-0074 DRAFT 0005-3	Site evaluation guidance	Pg 11	Codes and Standards have more weight than regulatory guidance. The applicant should be able to use industry codes and standards and/or regulatory guidance. Identify key hazards and let the applicant	The NRC staff disagrees with the comment. Applicants can use both codes and standards as well as regulatory guidance. The ISG does not preclude or constrain that approach. Consensus codes and standards that are not incorporated

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			identify the codes/standards or regulatory guidance to be used.	into NRC regulations do not have more weight than regulatory guidance. See response to similar comment 0005-CL-2 above. No change made to the ISG.
NRC-2022-0074 DRAFT 0005-4	Guidance documents	Pgs 11+12	Clearly state conformance with the informational regulatory guidance documents is not required and that industry codes and standards take precedence.	The NRC staff disagrees with the comment. See response to comment 0005-CL-3 above.
NRC-2022-0074 DRAFT 0005-5	Design of Structures, Components, Equipment and Systems	Pgs 12+13	Delete the last sentence on page 12 and the three bulleted items at the top of page 13. Such design detail is unnecessary for the SAR. Simply require the applicant to identify the hazards for which design measures have been implemented to protect safety-related systems/structures, which should be listed.	The NRC staff disagrees with the comment. The design information being requested is necessary so that the staff can understand the basis for the design and its ability to withstand the hazards considered in the design. Adoption of the changes suggested in the comment would likely result in NRC audits to obtain such information, which could introduce inefficiency and possible delay into application reviews. No change made to the ISG.
NRC-2022-0074 DRAFT 0005-7	Principal Design Criteria	Pg 14 1 st 2 para under PDC section	Delete the last two paragraphs on page 14 requiring the applicant to address the full scope of PDCs described in the regulations. This is open ended and essentially impossible to meet. The collective elements of the CFR provide for the protection of the public.	The NRC staff disagrees with the comment. Regulatory Guide (RG) 1.232, "Developing Principal Design Criteria for Non-Light Water Reactors," was issued to provide guidance on Principal Design Criteria (PDCs) for non-Light Water Reactors (LWRs), including examples for liquid metal cooled reactors and High Temperature Gas-cooled Reactors. The RG was developed with industry input and clearly shows

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				that the PDCs are not open ended or impossible to meet. No change made to the ISG.
NRC-2022-0074 DRAFT 0005-8	Guidance documents	Pg 16	Clearly state that conformance with these informational regulatory guidance documents is not required and that industry codes/standards take precedence.	See response to comment 0005-CL-3 above.
NRC-2022-0074 DRAFT 0005-9	Guidance documents	Pg 17	Same comment as 0005-CL-3 above.	See response to comment 0005-CL-3 above.
NRC-2022-0074 DRAFT 0005-10	Chapter 11	Pg 17	Delete entire chapter. The relationship with safety-related is tenuous, casting doubt on whether or not the chapter is meaningfully risk significant.	The NRC staff disagrees with the comment. Organization and human-system considerations are important factors included in regulations to ensure safe operation and response to off-normal events. No change made to the ISG.
NRC-2022-0074 DRAFT 0005-11	Guidance documents	Pg 18	Same comment as 0005-CL-3.	See response to comment 0005-CL-3 above.
NRC-2022-0074 DRAFT 0005-12	Chapter 12	Pg 19	Add a sentence that industry codes/standards must be identified by the applicant, including a summary discussion of how the codes/standards are used since this section involves IST.	The NRC staff disagrees with the comment to the extent that it suggests that changes are needed to the roadmap ISG.

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				ISG DANU-ISG-2022-06, Chapter 12, “Post Construction Inspection, Testing, and Analysis Program,” is referred to on page 19 of the ARCAP Roadmap ISG and is the applicable guidance document for post-construction activities. DANU-ISG-2022-06 does call for the applicant to identify the industry codes and standards to be used in the program. No change made to the ISG.
NRC-2022-0074 DRAFT 0005-13	Technical Specifications	Pg 19	Simply paraphrase 10 CFR 50.36 and require the applicant to identify (1) safety-related systems for which technical specifications are used and (2) safety-related systems for which limiting conditions of operation are employed. A summary of the basis for these systems and a summary of the methods to control set-point values should also be provided. The basis provided by the comment includes “SARs do not need to contain specific set points or specific instruments/components. The analyses used to generate the set points can be audited by the staff, as can be the list of the specific components/instruments/items. Specific limiting conditions can be similarly managed.”	The NRC staff disagrees with the comment. The content of technical specifications is codified in 10 CFR Part 50 and the implementation of the technical specifications regulation, 10 CFR 50.36, reflects many years of experience, including the approval of industry initiatives to achieve an appropriate balance between requirements within technical specifications and information provided in the SAR. To the extent the comment is suggesting that setpoints should be controlled through a setpoint control program, such a program would need to be governed by an administrative technical specification. Further, such a technical specification would need to specify the analysis methodology for establishing setpoints and the FSAR would need to include information sufficient to demonstrate the adequacy of that methodology. No change made to the ISG.

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NRC-2022-0074 DRAFT 0005-14	QA Plan	Pg 24 – QA Plan – 1 st para	a) Prominently cite 10 CFR 50, Appendix B. b) Move fuel related discussion to an appendix.	a) The NRC staff agrees with the comment. The following sentence has been added after the 1st sentence in the paragraph: “Quality Assurance Plans should meet the requirements in 10 CFR Part 50, Appendix B, “Quality Assurance,” unless an exemption can be justified.” b) The NRC staff disagrees with the comment. The reference to the Argonne National Lab (ANL) program for qualifying legacy fuel data is potentially useful to some non-LWRs, since the NRC anticipates that many non-LWR applicants will need to rely on data gathered during past fuel-related programs sponsored by DOE or its predecessors. Therefore, the ANL program deserves a high visibility in the ISG, which an appendix may not provide. No change made to the ISG.
NRC-2022-0074 DRAFT 0005-15	Fire Protection Program (Design)	Pg 25	a) The applicant must identify the National Fire Protection Association (NFPA) standards used and the basis for their use. In addition, the applicant must identify the areas in the plant where fire protection features are employed to protect safety-related items and, potentially, risk-significant items.	a) The NRC staff agrees with the comment. The last sentence in the first paragraph of the fire protection for design section is revised as follows: “In addition, the application should identify the NFPA [National Fire Protections Association] standards used in the design,

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			b) The SAR should not go into detail on specific measures. Keep the guidance general. Any mention of specific reactor types should be in an appendix.	including the basis for their use, describe the results of the fire hazard analysis,..." b) The NRC staff disagrees with the comment. Since the ISG is written for non-LWRs, it is reasonable to discuss the general fire protection issues associated with non-LWR technologies. No change made to the ISG.
NRC-2022-0074 DRAFT 0005-16	Security Plans	Pg 28	Suggest that this section be kept broad and general. The basis provided by the comment included 'Need-to-know' from a security standpoint. The comment also stated that details can be obtained through appropriate channels.	The NRC staff disagrees with the comment, to the extent it suggests changes are needed to the ISG. The guidance is general in nature and the staff recognizes that some security information will be sensitive and not included in the Safety Analysis Report (SAR). No change made to the ISG.
NRC-2022-0074 DRAFT 0005-17	Fire Protection Program (operational)	Pg 31	Various NFPA and industry codes and standards apply.	The NRC staff disagrees with the comment to the extent it suggests changes are needed to the ISG. The fire protection program (operational) section refers to ISG DANU-ISG-2022-09 which does identify NFPA standards. No change made to the ISG.

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NRC-2022-0074 DRAFT 0005-18	ISI/IST	PG 34	List key topic areas, the pertinent codes and standards and generally how the codes and standards implement the topics. Identify the systems/components subject to testing and the tests to be implemented.	The NRC staff disagrees with the comment to the extent it suggests changes are needed to the ISG. This section refers to ISG DANU-ISG-2022-07 which addresses In-service Inspection (ISI)/In-service Testing (IST) in more detail, including identification of the topic areas, the American Society of Mechanical Engineers (ASME) codes and standards, and the systems/components within the scope of the ISI/IST programs. No change made to the ISG.
NRC-2022-0074 DRAFT 0005-19	ITAAC	Pg 39	List key topic areas, require applicant identify pertinent codes/standards and generally how these codes/standards implement the topics. Identify major systems/components subject to ITAAC and the tests to be performed. The referenced regulatory guidance document (NUREG-0800) is overly prescriptive, particularly for the SAR and is inconsistent with the Licensing Modernization Act (LMA).	The NRC staff disagrees with the comment. The key topic areas and codes/standards are design dependent and therefore cannot be generalized in a guidance document. NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition," provides guidance for the NRC staff review of LWR applications. It is listed for information in this context, not as guidance related to SAR content. No change made to the ISG.
NRC-2022-0074 DRAFT 0005-21	Overview-Application Guidance	Pg 41	a) Reword paragraph to more simply state the expectations for demonstrating the performance of designs or features that differ significantly from LWR designs.	a) The NRC disagrees with the comment. The wording in this section is based on the wording in 10 CFR 50.43(e)) and, thus, should remain unchanged. No change made to ISG.

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			b) Delete the “Staff Review Guidance” paragraph and replace with “Staff to audit analyses and testing as appropriate.”	b) The NRC staff disagrees with the comment. Demonstrating the performance of new designs or features is a fundamental part of safety and should be documented in the SAR and evaluated in the staff safety evaluation report (SER). No change made to the ISG.
NRC-2022-0074 DRAFT 0005-22	Backfitting and Issue Finality	Pg 44	The entire document appears to be the epitome of backfitting while being at odds with the Licensing Modernization Act (LMA).	The NRC staff disagrees with the comment. As explained in the Backfitting and Issue Finality section, the staff does not intend to use this ISG in a manner that would constitute backfitting as defined in NRC regulations and management directives. In addition, the document does not impose new requirements but provides guidance to staff and potential applicants. No explanation is provided as to why the document is at odds with the NEIMA or any other statute. No change made to the ISG.
NRC-2022-0074 DRAFT 0005-23	References	Pg 46	State that conformance with these informational regulatory guidance documents is not required and that industry codes/standards take precedence.	The NRC staff disagrees with part of the comment. The response to comment 0005 CL-3 above indicates that the ISG will be modified to clarify that the documents identified as “useful information” are for background only and are not requirements.

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NRC-2022-0074 DRAFT 0005-24	Appendix B		Appendix B is very useful. The requirements identified in Appendix B as applicable to non-LWRs could have been used as the backbone for 10 CFR Part 53.	The NRC staff acknowledges the comment but notes that it did not suggest changes to the ISG.
NRC-2022-0074 DRAFT 0005-25	Appendix D		These documents still under development should be released to the public for review and comment. Otherwise, the public is excluded from rulemaking activities.	The NRC staff acknowledges the comment. The documents listed in Appendix D either have been or will be published as drafts for public comment when sufficiently complete.
NRC-2022-0075 DRAFT 0004-18	Construction Permit Guidance-PDC section	Pg 1 ⁵ - 3rd full para in PDC section	This paragraph states “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).” Does this imply that we could have SSCs classified as SR and NSRST that are not informed by NEI 18-04? Suggest revising to read “The NRC also considers this approach to be appropriate for developing proposed PDCs for those design functions and features of the facility that are classified as NST by the LMP process (e.g., normal operations).”	The NRC staff agrees with the comment. See responses to NEI comments NRC-2022-0074 DRAFT 0006-12 and NRC-2022-0074 DRAFT 0006-13 below. As noted in the resolution of these comments, the language in the ISG has been revised to: “Accordingly, each applicant is responsible for identifying the need for additional PDCs, not informed by the LMP process, that, due to the technology, design, or site, are necessary to protect public health and safety.”
NRC-2022-0075 DRAFT 0004-19	Appendix A “Novel Design Features”	Pg 8	The paragraph reads as if it applies to all novel design features, whether they are safety-significant or NST. Clarify if the paragraph applies to NST SSCs.	The NRC staff agrees with the comment. See response to NEI comment NRC-2022-0074 DRAFT 0006-20 below.

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NRC-2022-0075 DRAFT 0004-20	Appendix A “Consensus Codes and Standards and Code Cases”	Pg 8	The paragraph states that during pre-application interactions a white paper should be used to identify consensus codes and standards or code cases intended to be used. DG.-1404 states that a listing of codes and standards should be included in Chapter 1 of the SAR. Can an applicant incorporate by reference the white paper in lieu of listing the codes and standards in Chapter 1?	Regarding the use of incorporating white papers into an application, the NRC staff notes that white papers are not formally approved and historically have not been maintained or controlled like topical reports. As discussed in DANU-ISG-2022-01, white papers are a mechanism for NRC staff to provide feedback to an applicant that would be useful in preparation of an application. While an approach described in a white paper can be used to inform the development of an application, the staff’s experience is that white papers have not historically been prepared by applicants or reviewed by the NRC staff in anticipation of an applicant’s incorporating the white paper by reference into an SAR. In contrast to white papers, as noted in DANU-ISG-2022-01 Appendix A, topical reports are reviewed and an NRC SE is prepared with findings on the individual technical matters covered in the topical report that can be relied on for the application review if the content of the application conforms to the information approved in the topical report and any limitations and conditions placed on its approval. The discussion on Codes & Standards in DG-1404 has been moved to the Roadmap ISG.
NRC-2022-0075	Appendix B “Applicability of NRC Regulations”	Pg 22-Table 4-1 st para	The second sentence states “Error! Bookmark not defined”. Please clarify.	The NRC staff agrees with the comment. The ISG has been revised. The second sentence now reads “See Footnote 6 of this Appendix for

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DRAFT 0004-21				a discussion of applicability to 10 CFR Part 50 applicants.”
NRC-2022-0075 DRAFT 0004-22	Appendix B “Applicability of NRC Regulations”	Attachment 1 – Pg 3	Editorial error – The third sentence in the first paragraph needs a space between “against” and “NUREG-0800”.	The NRC staff agrees with the comment. ISG revised to correct editorial error.
NRC-2022-0075 DRAFT 0004-23	Appendix C “Construction Permit Guidance”	Pg 12 - EP	The guidance only references regulations that are applicable to LWRs. There is no mention of 10 CFR 50.160 and RG 1.242, “Performance-Based Emergency Preparedness for Small Modular Reactors, Non-Light-Water Reactors, and Non-Power Production or Utilization Facilities.” Will the staff consider the new rulemaking effort for advanced reactor EP? Add clarification to address EP for advanced reactors.	The NRC staff partially agrees with the comment. The guidance was being prepared while the NRC was finalizing the referenced rulemaking, which was published in the Federal Register as a final rule on November 16, 2023 (88 FR 80050). The ISG has been revised to reflect the issuance of the final rule.
NRC-2022-0074 DRAFT 0007-TL-1	Application of ARCAP to LWRs	General	The SMR transmittal letter (page 2) states that they believe the ARCAP technology-inclusive guidance is also intended to apply to LWRs.	The NRC staff disagrees with the comment, to the extent it suggests changes are needed to the ISG. The NRC staff is considering expanding the applicability of ARCAP guidance documents beyond non-LWRs. However, expansion of the guidance beyond non-LWRs at this time is premature. The final ISG continues to note that the NRC is developing an optional performance-based, technology-inclusive regulatory framework for licensing nuclear power plants designated as 10

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				CFR Part 53, “Licensing and Regulation of Advanced Nuclear Reactors,” (RIN 3150-AK31). If the NRC promulgates a final 10 CFR Part 53 rule, the NRC staff plans to apply the 10 CFR Part 53 guidance to both LWRs and non-LWRs. Should the 10 CFR Part 53 rulemaking include requirements for both LWRs and non-LWRs, the NRC staff envisions that the guidance documents supporting that rulemaking would provide a basis to expand the concepts found in the ARCAP ISGs guidance beyond non-LWRs. So, although the LMP methodology that supports much of the TICAP and ARCAP guidance could hypothetically be used for any reactor technology, some LWR-specific infrastructure such as codes and standards (including those related to PRA) and NRC regulations introduce challenges to its immediate use for LWRs. In the interim, the NRC staff notes that the applicability section of the ISG notes that an applicant desiring to use the ISG for a light water reactor application should contact the NRC staff to hold pre-application discussions on its proposed approach. No change to the ISG.
NRC-2022-0074 DRAFT 0007-TL-2	CP Guidance for Non-LWRs – Fuel Qualification”	Appendix C – Pg 14	The SMR transmittal letter (page 4) indicates that in comparing the CP application guidance for qualifying accident evaluation methodologies specified in DRNL-ISG-2022-01(for LWRs) to the guidance in DANU-ISG 2022-01 (for non-LWRs), it appears that at	The NRC disagrees with the comment. The staff notes that DNRL-ISG-2022-01, “Safety Review of Light Water Power Reactor Construction Permits,” (ML22189A099) states, in part, the following:

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			the CP stage LWRs are being held to a more stringent standard than non-LWRs. Specifically, at the CP stage LWRs must verify that the evaluation methods used are approved and applicable to the design, whereas, non-LWRs only need to describe their plan for qualifying the evaluation methods. SMR requests clarity if this understanding is consistent with NRC's interpretation of the pertinent regulations and guidance.	“At a minimum, the NRC staff should ensure the preliminary safety analysis report includes all the information required by 10 CFR 50.34, with a focus on the following: • Verification that the loss of coolant accident (LOCA) evaluation methods used are approved and applicable to the design. • Verification that non-LOCA evaluation methods are at a minimum under active NRC staff review and any open items can reasonably be left for later consideration in the final safety analysis report, and that there is reasonable assurance that the proposed facility can be constructed and operated without undue risk to public health and safety.” The discussion found in the first bullet is driven by the requirements in 10 CFR 50.46, which is not applicable to non-LWRs as indicated in Appendix B of the ARCAP roadmap ISG. Further, the discussion in the ARCAP roadmap ISG Appendix C associated with safety and accident analysis methodologies and associated validation is wholly consistent with the guidance found in the second bullet from DNRL-ISG-2022-01 discussed above. No changes to the ARCAP roadmap ISG are being made because of this comment.
NRC-2022-	Applicability to LWRs	General	All the guidance is technology-inclusive and is equally applicable to LWRs.	See response to NRC-2022-0074 DRAFT 0007-TL-1.

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0074 DRAFT 0006-1			ARCAP is supposed to be applicable for any technology, any licensing approach and any licensing path. 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 LMP methodology if they elect to do so. Please rephrase to indicate the guidance is technology-inclusive and is equally applicable to both LWR and non-LWR designs.	
NRC-2022-0074 DRAFT 0006-2	Duplication of information	General	The roadmap denotes the lists of guidance documents referenced in different documents of this package (e.g., DG-1404, DANU-ISG-2022-02). 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 the documents from the roadmap.	The NRC staff disagrees with the comment. The roadmap is intended to provide an integrated picture of the guidance contained in the ISGs and DG-1404. As such, it needs to describe the extent of the guidance covered in ARCAP so as to provide a complete and consistent picture of the ARCAP scope. The individual ARCAP documents are an extension of the guidance in the roadmap. The NRC staff acknowledges that additions or deletions from the list of documents in either the roadmap or one of the other referenced ISGs will necessitate conforming changes in one or more ARCAP guidance documents to maintain consistency. No revision made to the ISG.
NRC-2022-0074 DRAFT 0006-3	Scope of Programs Included in the Roadmap	General	Are there any programs an applicant using LMP is expected to develop that are not noted in the roadmap or other relevant TICAP/ARCAP chapters? Please add any programs that the NRC expects an	The NRC staff agrees with the comment. There are some additional programs that the applicant will need to describe in the application. These can be identified by reviewing the

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			applicant using LMP to provide that are not noted in the roadmap.	regulations applicable to non-LWRs listed in Appendix B of the roadmap. Some of those regulations require programs not specifically discussed in the TICAP/ARCAP documents (e.g., maintenance program, operator training program). It is the applicant's responsibility to comply with these regulations, including development of any needed program descriptions. The numerous programs developed for LWRs may provide a useful starting point and are identified in guidance documents such as RG 1.206 and NUREG-0800. The NRC staff agrees additional clarification is needed. Page 43 of the ISG "Operational Programs" has been revised to state: "An OL or COL applicant should consider the regulations identified in Appendix B of this ISG and other ARCAP ISGs as applicable to non-LWRs to identify those requirements that call for operational programs to be developed and described in the SAR. It is the applicant's responsibility to identify and include in the SAR a description of these programs."
NRC-2022-0074 DRAFT 0006-4	Tie between NEI 21-07 and NEI 18-04	Pg 3 – next to last para and pg 9 – 1 st para	It is important to explicitly tie NEI 21-07 back to NEI 18-04 since NEI 21-07 covers more than just addressing portions of the SAR that describe fundamental safety functions of the design. Replace the sentences that begin with "TICAP is an industry led activity..." with:	The NRC staff agrees with the comment. The sentences on pages 3 and 9 have been replaced with the sentence recommended by the comment with minor editorial changes as noted below. "TICAP is an industry led guidance activity focused on the scope and depth of information to

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			“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.”	include in the portions of the the an 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.”
NRC-2022-0074 DRAFT 0006-5	Applicability of Appendix B to MLs	Pg 5 – last sentence of 1 st full para	Since the overall scope of this ISG includes MLs, the scope of Appendix B should also include MLs. Appendix B should be revised to include MLs. The last sentence of the 1 st full paragraph on page 5 should be revised to include MLs.	The NRC staff partially agrees with the comment. As a result of this comment Appendix B has been updated to include applicability of regulations to manufacturing licenses. The changes to the document include changes to the first page of Appendix B and changes to Table 2, Table 5, and Table 6 of Appendix B. However, the staff has not made broader revisions to the roadmap to fully address manufacturing licenses (MLs).
NRC-2022-0074 DRAFT 0006-6	Facility Safety Program	Pg 6 – bulleted list and pg 38 (footnote)	The Facility Safety Program (FSP) is reserved for incorporation into Parts 50/52 if approved by the Commission for Part 53. This program would create an unjustified additional burden on the licensee and is in direct conflict with NRC’s backfit rule. Please remove the references to the FSP.	The NRC staff agrees with the comment. Reference to the FSP has been removed from page 6 and page 38, including the footnote.
NRC-2022-0074 DRAFT 0006-7	RG 1.181	Pg 9 – list of guidance documents	Typo – RG 1.181, “Content of the Updated Final Safety Analysis Report in Accordance with 10 CFR 50.71(e),” is for 50.71(e), not 50711.	The NRC staff agrees with the comment. ISG revised – typo corrected.
NRC-2022-	Design of Structures,	Pg 12-14	Much of the discussion under this heading is applicable to LWRs that operate well	The NRC staff agrees with the comment.

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0074 DRAFT 0006-8	Components, Equipment and Systems		above atmospheric pressure. The guidance is not relevant to non-LWRs that operate at or near atmospheric pressure. It would be helpful to clarify if NRC has expectations for non-LWR applicants with system operating pressures at or near atmospheric to address piping failures. Add the following paragraph on page 14 after the bullet on Section 3.6.3: “The applicability of specific guidance will vary between designs and whether certain hazards are addressed within licensing basis events or a deterministic methodology used to show that the failure of non-safety-related SSCs have no adverse impacts on required safety functions. For example, applications for designs that operate at or near atmospheric pressure need not address Sections 3.6.1, 3.6.2 and 3.6.3 above. If the reactor design does not include SSCs that could generate missiles or otherwise compromise required safety functions inside the containment or confinement, then Section 3.5.1.2 of NUREG-0800 need not be addressed in the application. However, internally generated missiles outside containment and turbine missiles may still need to be addressed. In addition, designs that operate at or near atmospheric pressure must still address the environmental effects of fluid leaks on SSCs in the vicinity of the leak, considering factors such as the fluid	Page 14 (first full paragraph) of the ISG has been revised as suggested with revisions to conform the language to the staff review guidance in the ISG section to which the comment applies (as opposed to application guidance) and minor edits plus an additional sentence to address leaks in low energy lines as follows: “The applicability of specific guidance will vary between among designs and will depend on whether certain hazards are addressed within through risk-informed analysis of licensing basis events or a deterministic methodology used to show that the individual failures of non-safety-related SSCs have no adverse impacts on required safety functions. For example, for applications for designs that operate at or near atmospheric pressure, a reviewer need not apply the guidance in SRP Sections 3.6.1, 3.6.2 and 3.6.3 above. If the reactor design does not include SSCs that could generate missiles or otherwise compromise required safety functions inside the containment or confinement as a result of component overspeed failures, fluid system failures, or as a consequence of gravitational effects, then the reviewer need not apply the guidance in SRP Section 3.5.1.2. The staff review, however, may still need to consider internally generated missiles outside containment and turbine missiles. In addition, the staff should ensure that designs that operate at or near atmospheric pressure address the environmental effects of fluid system failures on SSCs in the vicinity of the leak considering factors such as

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			temperature, corrosive effects, flammability, and radioactivity.”	fluid temperature, corrosive or caustic effects, flammability, and radioactivity.”
NRC-2022-0074 DRAFT 0006-9	Design of Structures, Components, Equipment and Systems	Pg 12	Revise the 1 st sentence of this section to include reference to Chapter 7 as follows: The TICAP guidance (i.e., NEI 21-07 and DG-1404) for the design of structures, components, 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...”	The NRC staff agrees with the comment. ISG revised to reflect suggested wording.
NRC-2022-0074 DRAFT 0006-10	Section 3.6.3	Pg 14	Typo – Correct “Leak-Before-Brea” to “Leak-Before-Break”.	The NRC staff agrees with the comment. ISG revised to correct typo.
NRC-2022-0074 DRAFT 0006-11	PDCs	Pg 14 – last para	a) The first sentence states that “the requirement to propose PDC includes a requirement to address the full scope of PDCs described in the regulations which includes...design, fabrication, construction, testing and performance requirements”. This is not practical for ML applicants. Suggest adding the following sentence 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	a) The NRC staff disagrees with the comment. 10 CFR 52.157(a) specifies that ML applications include the PDC for the reactor to be manufactured. The regulation also references Appendix A of 10 CFR part 50, "General Design Criteria for Nuclear Power Plants," which provides guidance to applicants in establishing principal design criteria for other (non-LWR) types of nuclear power units. There is no deferral of PDC to the combined operating license (COL) stage specified in the regulations. No change to the ISG.

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			process should also be included. However, a COL applicant should include all of the PDC in their SAR.” b) Additionally, it would be helpful to provide a distinction between “fabrication” and “construction” as fabrication is included in the definition of construction provided in 10 CFR 50.2.	b) The NRC staff partially agrees with the comment. Although it might be helpful in certain contexts to distinguish between fabrication and construction, such distinctions may depend on the particular structure, system, or component and therefore it is not practical to revise the guidance. No change to the ISG.
NRC-2022-0074 DRAFT 0006-12	PDCs	Pg 15 – 3 rd para in PDC section	The guidance on PDCs for those aspects of the facility design not informed by the LMP process lists Normal Operation as the only example. More specifically, the guidance only refers to the guidance in DANU-ISG-2022-03, Chapter 9, as guidance for PDCs beyond those derived from the LMP process. It is unclear if other PDC are expected from an applicant. Please clarify the guidance for PDCs for those aspects of the facility not informed by LMP.	The NRC staff generally agrees with the comment, although NRC staff cannot identify in advance all other areas outside of the Licensing Modernization Project (LMP) scope where a PDC may be necessary to address public health and safety concerns, especially considering the technology and potential unique nature of non-LWR designs. The designers will be responsible for determining if PDCs beyond those within the LMP scope or traditionally considered are necessary to “establish the necessary design, fabrication, construction, testing, and performance requirements for structures, systems, and components (SSCs) important to safety,” as defined in 10 CFR Part 50, Appendix A. The ISG has been revised to add the following right after the 4th sentence in the third paragraph in the PDC section (page 15):

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				“Accordingly, each applicant is responsible for identifying the need for additional PDCs, not informed by the LMP process, that, due to the technology, design, or site, are necessary to protect public health and safety.”
NRC-2022-0074 DRAFT 0006-13	SR and NSRST	Pg 15 – 3rd para in PDC section	The fourth sentence in this paragraph implies that components can be classified as SR and NSRST and not be informed by the LMP process. It is not clear that SR and NSRST classifications have meaning outside the context of NEI 18-04. In the fourth sentence please replace the words “SR and NSRST and not informed “ with “classified as NST”.	The NRC staff agrees with the comment but has not adopted the suggested language <i>verbatim</i>. The ISG has been revised. The fourth sentence in the first paragraph has been modified to read: “The NRC also considers this approach to be acceptable for developing proposed PDCs for those design functions and features of the facility not informed by LMP but determined important to the protection of public health and safety (e.g., normal operations).” Also, see the response to comment NRC-2022-0074 DRAFT 0006-12above.
NRC-2022-0074 DRAFT 0006-15	Aircraft Impact Assessment	Pg 39	Guidance for the aircraft impact assessment is provided in both the roadmap and in DG-1404, with cross references between the documents. The guidance should be provided in one location.	See response to comment NRC-2022-0074-DRAFT-0006-31 on DG-1404. As stated in the response to the DG-1404 comment, the detailed proposed addition in DG-1404 regarding aircraft impact assessments was deleted in RG 1.253 and replaced with a short description of the aircraft impact requirements and a statement that directs the reader to this ISG for guidance regarding aircraft impact assessments.

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				No change made to the ISG.
NRC-2022-0074 DRAFT 0006-16	Chapter 9	Pg 16	ML applications 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.	The NRC staff agrees with the comment. Although the staff has not made broader revisions to the roadmap to fully address MLs, DANU-ISG-2022-03 (Chapter 9) has been revised to add the following after the first paragraph under “Application Guidance”: “For Chapter 9 content, DC [design certification], SDA [standard design approvals], and ML applications need only include (i) 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 10 CFR 52.47(a)(5), 52.137(a)(5) and 52.157(e), respectively); (ii) information required by 10 CFR 20.1406 (per 10 CFR 52.47(a)(6), 52.137(a)(6), and 52.157(f)(9), respectively); and (iii) information with respect to the design of equipment to maintain control over radioactive material in gaseous and liquid effluents produced during normal reactor operations as described in 10 CFR 50.34a(e) (per 10 CFR 52.47(a)(10), 52.137(a)(10), and 52.157(f)(11), respectively). Programmatic information identified below related to Chapter 9 (e.g., radiation protection program description) that is not included in an application for a DC, SDA, or ML should be addressed in the subsequent COL applications.”

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NRC-2022-0074 DRAFT 0006-17	Chapter 10	Pg 16	ML applications should only be required to address the facility and equipment design and radiation sources. Operational programs and descriptions of management, policy and organizational structure should be addressed in the COL application. At the end of the first full paragraph add the following sentence: “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.”	The NRC staff partially agrees with the comment. The guidance in the ISG for SAR Chapter 10, “Control of Occupational Dose” (DANU-ISG-2022-04) provides guidance for ML applications in this area. It states that ML applications should provide information on facility and equipment design and radiation sources that are necessary to ensure that the occupational radiation protection standards set forth in 10 CFR Part 20 are met. It further states that for ML applications, programmatic information may be provided using COL action items. No change to this ISG.
NRC-2022-0074 DRAFT 0006-18	Chapter 11	Pg 17	An ML application would only require a description of the management plan for design and manufacturing activities (see 52.157(f)(26)). At the end of the second paragraph add the following sentence: “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.”	The NRC staff disagrees with the comment. The ISG for SAR Chapter 11, “Organization and Human-System Considerations,” (DANU-ISG-2022-05) provides guidance to ML applicants regarding organizational information. The ISG distinguishes between applications by stating that: “A DC, ML, or SDA application should focus on the corporate-level management and technical support organizations of the design organization.” The ISG identifies additional information on management plans for the design, construction, and preoperational periods that would be applicable to other types of applications (e.g., a COL). As mentioned in the comment, 10 CFR 52.157(f)(26) identifies the

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				required information for management plans for design and manufacturing activities under an ML. The NRC staff nonetheless has revised DANU-ISG-2022-05 (Chapter 11) to more clearly delineate the organization and management plan information an ML application should include, where that information differs from that which should be included in other types of applications. No change to the Roadmap ISG.
NRC-2022-0074 DRAFT 0006-19	ITAAC	Pg 39 – 1 st para in ITAAC section	The first sentence in the paragraph requires that applicants for a ML provide the proposed ITAAC that must be performed and their acceptance criteria. 10 CFR 52.158(a)(1) expands on the purpose of the ML ITAAC, which should be acknowledged in this paragraph. Suggest that the following sentence be added at the beginning of the paragraph: “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.”	The NRC staff disagrees with the comment. First, construction permits (CPs) and operating licenses (OLs) are not required to provide ITAAC. Second, the ISG for SAR Chapter 12 “Post-manufacturing and construction Inspection, Testing, and Analysis Program,” (DANU-ISG-2022-06) addresses ITAAC for ML applications and it references 10 CFR 52.158. The Chapter 12 ISG does not mention “other ITAAC” for ML applications but does not preclude that ITAAC could consist of both ITAAC for the ML and additional site-specific ITAAC for the COL. To provide clarity, the following text from the 1st paragraph on page 39 is revised: “Instead, gGuidance for the post-manufacturing and construction inspection testing and analysis program for non-LWR CP and OL applicants is

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				provided in DANU-ISG-2022-06, “Chapter 12 – ‘Post Manufacturing and Construction Inspection, Testing, and Analysis Program,’” <u>which includes guidance for ITAAC in COL, DC, and ML applications.</u> ”
NRC-2022-0074 DRAFT 0006-20	Appendix A- “Novel Design Features or Approaches”	Pg 8	The text states that any novel design features should be identified during the pre-application review. Does the NRC want to review in advance novel design features that are not SR or NSRST? If the pre-application review is limited to SR and NSRST novel design features, this should be clarified.	The NRC staff agrees with the comment. The first sentence on page 8 of the ISG has been revised to read as follows: “A prospective applicant should identify any novel design features that are classified as SR [safety related] or NSRST [non-safety related with special treatment] or that are credited in any LBE [licensing basis event] sequence through white papers...” To be clear, the NRC staff will not be reviewing novel design features during pre-application interactions unless requested to do so through the submittal of topical reports or a similar vehicle. Pre-application interactions are usually intended to help the staff become familiar with the application, particularly in areas where new concepts or novel design features are being proposed.
NRC-2022-0074 DRAFT 0006-21	Appendix A	Pg 8	This is the same comment as NRC-2022-0075 DRAFT 0004-20 above.	See response to comment NRC-2022-0075 – DRAFT 0004-20 on page 15 above and NRC-2022-0074-DRAFT-0006-D49 on page 38 below.

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NRC-2022-0074 DRAFT 0006-22	Appendix B	Pg 15	Please clarify what applications should address 10 CFR 50.155, "Mitigation of Beyond-Design-Basis Events".	The NRC staff agrees with the comment. The applicability column has been revised to indicate that for section 50.155: "Yes (for OLs and COLs)"
NRC-2022-0074 DRAFT 0006-23	Appendix B	Pg 22 – 1 st para	This is the same comment as NRC-2022-0075 DRAFT 0004-21 above.	See response to comment NRC-2022- 0075 DRAFT 0004-21 on page 16 above.
NRC-2022-0074 DRAFT 0006-24	Appendix B "Table 4"	Pg 23	Please note that 50.34(f)(2)(i) may only be applicable to some non-LWRs. For those non-LWR designs where there is no viable LOCA pathway, there would not be a need for the control room simulator to simulate small break LOCAs.	The NRC staff agrees with the comment. The applicability column has been revised to indicate that for section 50.34(f)(2)(i): "Yes (noting that the discussion of small break loss of coolant accidents may not be technically relevant to some non-LWR designs)."
NRC-2022-0074 DRAFT 0006-25	Appendix B	Attachment 1 - Pg 3	This is the same comment as NRC-2022-0075 DRAFT 0004-22 above.	See response to comment NRC-2022-0075 DRAFT 0004-22 above.
NRC-2022-0074 DRAFT 0006-26	Appendix C	Pg 12	This is the same comment as NRC-2022-0075 DRAFT 0004-23 above.	See response to comment NRC-2022-0075 DRAFT 0004-23 above.
NRC-2022-0074-	Applicability of 10 CFR 50.150 (aircraft impact	N/A – comment on DG-1404	The NRC staff received a comment on DG-1404 Revision 0 that stated manufacturing	The NRC staff disagrees with the statement that MLs do not need to address the requirements of 10 CFR 50.150 and responds to it here because it

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DRAFT-0006-D6 and NRC-2022-0074-0006-D2	rule) to manufacturing licenses and general guidance for manufacturing licenses	DANU-ISG-2022-01 appendix B applicability of regulations and general guidance for manufacturing licenses	license applicants do not need to address the requirements in 10 CFR 50.150. The NRC staff received a separate comment on DG-1404 Revision 0 that related to applicability of manufacturing licenses to NEI 21-07, Revision 1.	is related to changes in DANU-ISG-2022-01 (the Roadmap ISG). As stated in the applicability portion of 10 CFR 50.150 and as noted in RG 1.217, “Guidance for the Assessment of Beyond-Design-Basis Aircraft Impacts,” the aircraft impact rule applies to applicants for new CPs; new OLs that reference a new CP; new DCs; new SDAs; MLs that do not reference a standard DC or SDA; and combined licenses that do not reference a DC, SDA, or manufactured reactor. As a result of this comment and in response to comment NRC-2022-0074-DRAFT-0006-6 on DG-1404, the NRC staff is changing the applicability of regulations portion found in the ARCAP roadmap ISG appendix B, Table 2, to add section 52.157(f)(32), which requires ML applications to include the information required by 10 CFR 50.150(b). The NRC staff also made conforming changes to the ARCAP roadmap ISG to provide additional guidance for manufacturing licenses.
NRC-2022-0074-DRAFT-0006-D16	Applicability of Generic Issues	N/A – comment on DG-1404 DANU-ISG-2022-01	The NRC staff received a comment of DG-1404 Revision 0 that stated the information found in DG-1404 Section C.2.e regarding generic issues was not appropriate. The comment on DG-1404 is as follows: Industry has concerns with both the letter and the spirit of Addition C.2.e, which	The NRC staff partially agrees with the comment and responds to it here because it resulted in changes DANU-ISG-2022-01 (the Roadmap ISG). As a result of the comment, the NRC staff has removed addition C.2.e from RG 1.253 and added this guidance to the ARCAP Roadmap

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			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	ISG. For reasons more fully explained below, the NRC staff has determined that the information provided in this addition is appropriate to include in summary form in the SAR. The NRC staff notes that in accordance with the concepts in NEI 21-07, Revision 1, RGs and consensus codes and standards that are applicable to the outcomes derived from the LMP process should be discussed in the applicable portions of the SAR that are derived from the LMP process. Regarding the applicability of 10 CFR 50.34(f) to non-LWRs, the ARCAP roadmap guidance will continue to include a reference to ARCAP Roadmap ISG Appendix B on applicability of regulations. Appendix B, Table 1, notes that 10 CFR 50.34(f) does not apply to applications under 10 CFR Part 50, but includes a footnote that provides a clarification regarding the need for the staff to ensure that an applicant addresses the technically relevant Three Mile Island-related items during the review process and propose license conditions requiring the appropriate items in the interim while the Commission is considering rulemaking on this issue. While a majority of the requirements in section 50.34(f) by their terms apply only to LWRs, 10 CFR 52.47(a)(8), 52.79(a)(17), and 52.157(f)(12) require applicants for design certification, COLs, or MLs, respectively, to include information in their applications to address those requirements identified as applicable in the ARCAP Roadmap ISG, Appendix B, Table 4.

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			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 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. <u>Proposed Change</u> Please delete Addition C.2.e. However, if the addition is retained, to the extent the NRC uses terms like “technically relevant”	Regarding the discussion of providing a listing of consensus codes and standards in summary form, the NRC staff notes that this guidance is consistent with the guidance found in the ARCAP roadmap ISG Appendix A. In short, for preapplication activities, a prospective applicant should identify any consensus codes and standards or code cases that have not been endorsed or previously accepted by the staff. The following was added to ARCAP roadmap ISG Section on SAR content for Chapters 1 through 8. The addition appears under the section titled “Additional Considerations.” An applicant should include in SAR Chapter 1 summary tables with the following information, which appears in full elsewhere in the SAR: (1) The generic safety issues, unresolved safety issues, and Three Mile Island action items technically relevant to the design, and the applicant’s proposed resolution (for generic safety issues, see NUREG-0933, Resolution of Generic Safety Issues). The guidance on applicability of regulations in Appendix B to this ISG may provide useful insights in this area. (2) RGs directly applicable to the design, and whether the applicant proposes an alternative approach to satisfy a

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			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.	regulation rather than following the guidance in one of these RGs. If so, each alternative should be discussed in the relevant portions of the SAR, including the technical justification for the alternate approach. (3) The consensus codes and standards (from ASME, the American Nuclear Society (ANS), the American Concrete Institute (ACI), the Institute of Electrical and Electronics Engineers, etc.) used in the design, and whether the applicant proposes to request an exemption from or alternative to the IEEE standard that is incorporated by reference into 10 CFR 50.55a. Regarding ASME, ANS, ACI, or any other code or standard used in the design, the applicant should also identify every departure from every such code or standard and, if the NRC has endorsed the code or standard, every departure from the RG in which the NRC did so. The portion of the SAR covering the technical subject matter of each code or standard used in the design should discuss the code or standard, including the justification for each departure from the code, standard, or endorsing RG. The guidance for providing these summary tables is consistent with previous NRC guidance for new reactors in RG 1.206, as well as the practice

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				employed in FSARs for many operating plants. The staff has found these tables to be useful references during the review of applications, reports on changes to the licensing basis through applicable change processes (e.g., 10 CFR 50.59, “Changes, tests and experiments”), and license amendment requests.
NRC-2022-0074-DRAFT-0006-D17	Future guidance under consideration	N/A – comment on DG-1404 DANU-ISG-2022-01	The NRC staff received a comment on DG-1404 Revision 0 that stated that the following two sentences were inappropriately included in DG-1404 revision 0: “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.”	The NRC staff acknowledges the comment and responds to it here because it resulted in changes DANU-ISG-2022-01 (the Roadmap ISG). The NRC staff notes in its response to this comment on DG-1404 revision 0, the information has been removed from RG 1.253 and has been relocated to the ARCAP roadmap ISG discussion section on SAR content for the Chapters 1 through 8. Conforming changes were made to reflect that Appendix D of the ARCAP roadmap ISG (and not Appendix A of the TICAP RG) identifies guidance that is under development.
NRC-2022-0074-DRAFT-0006-D48	NRC-Design Review Guide on Instrumentation & Controls	N/A – comment on DG-1404 DANU-ISG-2022-01	The NRC staff received a comment on DG-1404 Revision 0 that stated a reference to Design Review Guide (DRG) addressing instrumentation and control is not appropriate to include in DG-1404.	The NRC staff acknowledges the comment and responds to it here because it resulted in changes DANU-ISG-2022-01 (the Roadmap ISG). The NRC staff notes in its response to this comment on DG-1404 revision 0, the information has been removed from RG 1.253 and has been relocated to the ARCAP roadmap ISG discussion section on SAR content for the Chapters 1 through 8.

Comment Identifier	Topic	Section of Document	Specific Comments	NRC Staff Response
NRC-2022-0074-DRAFT-0006-D49	Codes and Standards	N/A – comment on DG-1404 DANU-ISG-2022-01	The NRC staff received a comment on DG-1404 Revision 0 that stated a discussion of RG 1.87 Revision 2, and associated discussion with codes and standards is not appropriate to include in DG-1404. The comment on DG-1404 is as follows: Addition [DG-1404 Section] 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. <u>Proposed Change</u> Please delete Addition C.7.b(2)	The NRC staff acknowledges the comment and responds to it here because it resulted in changes DANU-ISG-2022-01 (the Roadmap ISG). The NRC staff notes in its response to this comment on DG-1404 revision 0, the information has been removed from RG 1.253 and has been relocated to the ARCAP roadmap ISG discussion section on SAR content for the Chapters 1 through 8. The NRC staff notes that the information provided in DG-1404 Section C.7.b(2) including the reference to RG 1.87, revision 2, “Acceptability of ASME Code Section III, Division 5, 'High Temperature Reactors,’” and the reference to materials compatibility guidance being developed was provided as additional background that may be useful to license applicants. However, this guidance is not directly related to NRC’s endorsement of NEI 21-07. On this basis DG-1404 Section C.7.b(2) has been deleted from RG 1.253. However, the material in DG-1404 Section C.7.b(2) has been included in the SAR Section 1-8 of the Roadmap ISG for applicant awareness. Regarding the use of codes and standards, the NRC staff has made changes as discussed in the above response to comment NRC-2022-0074-DRAFT-0006-D16 on DG-1404. In addition, the NRC staff notes that the use of other codes and

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				standards, or editions of the Code that have not been endorsed, for SR SSCs should be justified.