

From: Segala, John
Sent: Monday, August 17, 2020 3:31 PM
To: NICHOL, Marcus; AUSTGEN, Kati
Cc: Sebrosky, Joseph
Subject: Proposal for ARCAP Guidance Document

Hi Marc and Kati,

The purpose of this email is to provide you with a proposal for an ARCAP guidance document. This proposal is an outcome of the July 31, 2020, ARCAP meeting. We would like to discuss the proposal with you during our normal biweekly call tomorrow to support possible discussions during the August 27, 2020, TICAP/ACRAP/CP meeting.


I look forward to our discussions tomorrow.

Thanks, John

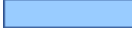
Proposal

As a result of feedback from the July 31, 2020, meeting, the ARCAP team met and developed a roadmap document describing that ARCAP will provide high-level guidance that will provide pointers to advanced reactor guidance that is under development (e.g., TICAP, security and emergency planning rulemaking) and provide guidance for areas that are not being addressed under an advanced reactor activity. There is a very limited set of new guidance that will be developed as part of ARCAP. ARCAP new guidance will be developed such that it is technology inclusive, to the maximum extent possible, so a light water or non-light water reactor applicant can use the guidance if they so desire. A subset of the ARCAP guidance will address construction permit guidance and will be developed in parallel with industry's effort to develop TICAP construction permit guidance. A fundamental assumption is that it has never been the intention of ARCAP to develop an approach similar to the guidance found in the standard review plan (NUREG-0800) for large light water reactors or the guidance found in thousands of regulatory documents (e.g., regulatory guides, NUREGs, etc..) that have been developed over the last 50 plus years for large light-water reactors. The proposed structure of the ARCAP guidance document would be in the form of a roadmap that would list various parts of an application and point to where guidance is being developed outside of ARCAP (e.g., TICAP, emergency planning and security rulemaking) and would contain appendices for portions of the application for which ARCAP is providing standalone guidance. The Table below provides a listing of the portions of the application (using the INL-developed annotated structure available at ADAMS Accession No. ML20107J565) and how the ARCAP would address the guidance. Please note that the ARCAP annotated outline and the industry TICAP annotated outline described during the July 30, 2020, TICAP meeting have not yet been consolidated so the chapter names are subject to change. The Table is color coded showing where ARCAP would simply point to guidance outside of ARCAP, where new stand-alone guidance is being developed, and where a combination of new ARCAP guidance and pointers to guidance outside of ARCAP is being considered for development. As shown in the Table there is a very limited set of new ARCAP guidance that is being considered for development.

Preliminary ARCAP Roadmap

Legend:  - ARCAP points to guidance that is being developed as part of another advanced reactor activity (e.g., TICAP)

 - New ARCAP guidance being developed

 - Combination of new ARCAP guidance and pointers to guidance that is being developed as part of another advanced reactor activity (e.g., TICAP, rulemaking etc.)

Item #	Description	ARCAP Disposition	Comment
1	FSAR Chapter 1 - General Information	Combination of TICAP and ARCAP-developed guidance	INL developed annotated outline suggests that major portions of chapter 1 would come from TICAP and would layout the safety case for the design
2	FSAR Chapter 2 – Site Information	Combination of TICAP and ARCAP – developed guidance	Portions of this chapter expected to come from TICAP (see TICAP chapter 8, “External Hazards Assessment,” from proposed outline found in July 30, 2020 meeting handouts available at: https://www.nrc.gov/docs/ML2021/ML20210M083.pdf). In addition, ARCAP will consider Commission guidance associated with SECY-20-0045, “Population Related Siting Considerations for Advanced Reactors,” as part of the Chapter 2 guidance development.
3	FSAR Chapter 3 – License Basis Event Analysis	ARCAP points to TICAP	
4	FSAR Chapter 4 – Integrated Plant Analysis	ARCAP points to TICAP	https://www.nrc.gov/docs/ML2021/ML20210M083.pdf
5	FSAR Chapter 5 – Description and Classification of SSCs	ARCAP points to TICAP	
6	FSAR Chapter 6 – Design Basis Accident Analysis	ARCAP points to TICAP	
7	FSAR Chapter 7 –	ARCAP points to TICAP	

	Defense in Depth		
8	FSAR Chapter 8 – Control of Routine Plant Radioactive Effluents and Solid Waste	ARCAP – developed guidance	ARCAP team developed draft guidance that discusses a performance based approach. The draft guidance has been well received by stakeholders in public meetings. Team is furthering refining the approach
9	FSAR Chapter 9 – Control of Occupational Dose	ARCAP – developed guidance	ARCAP team to develop draft guidance based on FSAR chapter 8
10	FSAR Chapter 10 – Human Factors Analysis	ARCAP points to TICAP	
11	FSAR Chapter 11 – Physical Security	ARCAP to point to physical security rulemaking guidance and other existing physical security guidance	See physical security plan below
12	FSAR Chapter 12 – Overview of PRA	ARCAP points to TICAP	
13	FSAR Chapter 13 – Administrative Control Programs	ARCAP points to TICAP	
14	FSAR Chapter 14 – Initial Startup Programs	Combination of TICAP and ARCAP-developed guidance	Unclear at this point how much TICAP guidance will be provided in this area
15	Technical Specification	Combination of TICAP and ARCAP-developed guidance	TICAP will have a major impact on technical specifications. NRC and INL have identified the need for TICAP to consider tech spec development as part of TICAP. Unclear at this point how much TICAP guidance will be provided in this area
16	Technical Requirements Manual	Combination of TICAP and ARCAP-developed guidance	Existing guidance in this area needs to be adjusted to reflect LMP terminology
17	Quality Assurance Plan (design)	Combination of TICAP and possibly ARCAP-developed guidance	TICAP outcomes expected to heavily influence quality assurance plan for the design. Appendix B expected to apply to safety-related SSCs. Unclear at this point how TICAP will address QA for Non-safety related special treatment SSCs
18	Fire Protection Program (design)	Combination of TICAP and possibly ARCAP-developed guidance	Results of TICAP developed affirmative safety case expected to influence fire protection program
19	PRA	Mostly TICAP. ARCAP will point to Non-LWR PRA review standard that is under development	See FSAR Chapter 12 and Non-LWR PRA review standard that is under development
20	Quality Assurance Plan (Construction and Operations)	Combination of TICAP and possibly ARCAP-developed guidance	Similar to item 17 above
21	Emergency Plan	ARCAP point to EP rulemaking	EP rulemaking expected to develop guidance in this area
22	Physical Security Plan	ARCAP point to physical security rulemaking	Physical security rulemaking expected to develop guidance in this area
23	SNM physical protection plan	ARCAP point to existing guidance	
24	SNM material control and accounting plan	ARCAP will point to guidance that is expected to be developed	MC&A is an issue that has identified as needing to have guidance developed for some of the non-lwrs. A pebble-bed MC&A application standard and review standard has been developed by ORNL. MC&A for liquid fueled molten salt reactors will be a particular challenge
25	Fire Protection Program (Operational)	Combination of TICAP and possibly ARCAP-developed guidance	See item 18 above
26	Radiation Protection Program	ARCAP – developed guidance	Relates to FSAR chapter 8 above
27	Offsite Dose Calculation Manual	ARCAP – developed guidance	Relates to FSAR chapter 8 above
28	Inservice Inspection/Inservice testing (ISI/IST)	Combination of TICAP and ARCAP guidance	TICAP outcomes expected to heavily influence ISI/IST. In addition ASME Section XI Section 2 guidance identified as needing to be developed
29	Environmental Report and Site Redress Plan	ARCAP pointer	Point to environmental guidance that is being developed
30	Financial Qualification and Insurance and Liability	ARCAP pointer	SECY paper under development to address issues
31	Cyber Security Plan	Combination of TICAP	Unclear at this point how much TICAP guidance will be provided in

and ARCAP guidance

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