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December 14, 2021

Subject: Transmittal of "**eVinci**™[1] Micro-Reactor Group 1 White Papers Post-Submittal" Presentation

I am pleased to submit on behalf of Westinghouse Electric Company the enclosed **eVinci** micro-reactor presentation. This presentation will be used to support the December 16th, 2021 meeting between Westinghouse and the NRC. The purpose of the December 16th meeting and the presentation is to provide an overview of the **eVinci** micro-reactor Group 1 white papers. These white papers were previously transmitted to the NRC via EVR_LTR_210076 on December 9th, 2021.

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Enclosure:
1. WAAP-12185, "**eVinci**™ Micro-Reactor Group 1 White Papers Post-Submittal"

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eVinci™ Micro-Reactor Group 1 White Papers Post-Submittal

December 16, 2021

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Purpose & Agenda

Purpose: Provide an overview of the Group 1 **eVinci** micro-reactor white papers to support NRC review and feedback.

Agenda

- White Paper Development Plan Review
- Summary of Group 1 White Papers

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White Paper Development Plan Review

#	Topic	Submittal Group
1	LMP Implementation	1
2	Principal Design Criteria	1
3	Safety and Accident Analysis Methodologies and Associated Validation	1
4	Plant Description, Plant Purpose, and Novel Methodologies Report	1
5	Fuel Qualification and Testing	2
6	Regulatory Analysis (Exemptions/'Not Applicables')	2
7	Functional Containment	2
8	Mechanistic or accident source term development	2
9	Test & Analysis Plan	2
10	Deployment Model	2
11	Safeguards Information Plan	2
12	Composite Material Qualification and Testing	2

#	Topic	Submittal Group
13	Code Qualification	3
14	Advanced Logic System® (ALS)-II	3
15	Emergency Planning and EPZ Sizing Methodology	3
16	Component Qualification	3
17	Physical Security	3
18	Heat Pipe Design, Qualification, and Testing	3
19	Nuclear Design Report	3
20	Transportation and Packaging	3
21	Operations & Remote Monitoring	4
22	Refueling/Decommissioning	4
23	UCA, EDU, Transient Testing Report	4
24	Phenomena Identification and Ranking Table (PIRT)	4
25	Seismic Methodology	4

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Summary of Group 1 White Papers

Topic 1: LMP Implementation

- Purpose:
  - Demonstrates how the project will implement the LMP process described in NEI 18-04
  - Provides preliminary list of SSC classification
- Request for NRC feedback:
  - Is the process an acceptable way to classify SSCs?
    - If not, what challenges do you see with this approach?
  - Is the process an acceptable way to evaluate the adequacy of DID equipment?
    - If not, what challenges do you see with this approach?
  - Are there any aspects of the design that appear to prevent adherence to the NEI 18-04 and RG 1.233 guidance?

Summary of Group 1 White Papers

Topic 2: Principal Design Criteria

- Purpose:
  - Establishes the necessary design, fabrication, construction, testing, and performance requirements for safety related SSCs
  - Describes the method of how the PDC were developed
  - Based on Regulatory Guide 1.232, within input from NEI 18-04 and NEI 21-07
- Request for NRC feedback:
  - Does NRC find the PDC development process an acceptable way to apply 10 CFR 50 Appendix A, NRC RG 1.232, NEI 18-04, and NEI 21-07?
    - If not, what challenges do you see with this approach?
  - Was the PDC development process implemented satisfactorily?
  - Are any design features not adequately addressed? If so, which ones?
  - Is the rationale for including and excluding certain GDC acceptable? If not, which are problematic and why?

Summary of Group 1 White Papers

Topic 3: Safety and Accident Analysis Methodologies and Associated Validation

- Purpose:
  - Demonstrates the safety analysis methodology
  - Describes the treatment of uncertainties, the required level of model validation, and the plan for code qualification and validation
- Request for NRC feedback:
  - Are there any documents not included in the list of expected safety analysis deliverables in Section 4.0 that would help facilitate a review of the safety analysis?
  - Are safety analysis elements adequately addressed. If not, what could be improved?
  - Are the rationale for either including and excluding the safety analysis events acceptable? If not, which do you find problematic and why?

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Summary of Group 1 White Papers

Topic 4: Plant Description, Plant Purpose, and Novel Methodologies Report

- Purpose:
  - Describes the purpose and need for the project
  - Describes the basic plant design
  - Describes novel/first-of-a-kind (FOAK) design features and methodologies
- Request for NRC feedback:
  - Confirm basic understanding **eVinci** micro-reactor facility design
  - Is there any feature or function of the conceptual design in which the NRC needs further clarification?

Questions