



# **PUBLIC MEETING**

## **NEI White Paper - First Principles for Use in Developing Design Cert Tier 1 Info & ITAAC**

**Division of New Reactor Licensing  
Office of New Reactors**

**November 16, 2017  
1:30-4:30 pm**



# **NEI - First Principles for Use in Developing Design Cert Tier 1 Info & ITAAC**

## **Public Meeting – Category 2**

**<https://www.nrc.gov/pmns/mtg?do=details&Code=20171375>**

**PURPOSE:** The purpose of the meeting is to discuss the Nuclear Energy Institute's White Paper entitled "First Principles for Use in Developing Design Certification Tier 1 Information and Inspections, Tests, Analyses and Acceptance Criteria"

**Please join my meeting from your computer, tablet or smartphone.**

**<https://global.gotomeeting.com/join/826393829>**

**Join the conference call:**

Bridge No. (301) 415-7027

Passcode 69594

Barbara Hayes; [Barbara.Hayes@nrc.gov](mailto:Barbara.Hayes@nrc.gov) ; 301-415-7442



# AGENDA

<b><u>Time</u></b>	<b><u>Topic</u></b>	<b><u>Speaker</u></b>
1:30 p.m.	Opening and Introductions	NRC
1:45 p.m.	Presentation from NEI with open discussion	NEI
2:30 p.m.	NRC General Observations on NEI White Paper	NRC
3:00 p.m.	Discussion organized by First Principles	NRC & NEI
4:00 p.m.	Review and Next Steps	NRC & NEI
4:15 p.m.	Comments or questions from the public	NRC
4:30 p.m.	Adjourn	



# Documents

- ❑ [ML17235A591](#) - NEI White Paper, First Principles for Use in Developing Design Certification Tier 1 and Information and Inspections, Tests, Analyses and Acceptance Criteria, dated June 2017.
- ❑ [ML17319A097](#) - NEI Handout on First Principles for 11/16/17 Public Meeting, Received 6/14/2017.
- ❑ [ML17319A167](#) - Public Meeting on NEI First Principles White Paper 11/16/2017 - Agenda.



## Tier 1 Definition

Tier 1 Information is defined in the 10 CFR Part 52 appendices under II.D as follows:

“Tier 1 means the portion of the design-related information contained in the generic DCD that is approved and certified by this appendix (Tier 1 information). The design descriptions, interface requirements, and site parameters are derived from Tier 2 information. Tier 1 information includes:

1. Definitions and general provisions;
2. Design descriptions;
3. Inspections, tests, analyses, and acceptance criteria (ITAAC);
4. Significant site parameters; and
5. Significant interface requirements”.



## NRC High Level Comments

Tier 1 Information other than design description & ITAAC: It is unclear how the First Principles apply to Tier 1 information other than design description and ITAAC.

Scope beyond LWR: It is unclear how the proposed first principles relate to advanced reactors.

Regulatory Bases: The regulatory basis/source associated with each item listed as a "First Principle" is unclear.

Bases for First Principles: It is unclear how the proposed first principles would align with the definition of Tier 1 and with topics important to essential safety performance criteria (e.g. reactivity control, decay heat removal, and retention of radionuclides).

Practical Implementation: It is unclear how the proposed first principles would be applied in the development of a certified design.



## NRC Additional Comments

First Principles as "stand alone" or "group": The basis is unclear for the following statements: "These First Principles must be applied together..." and "Selective application or reliance on a single criterion...could result in inappropriate information being included in Tier 1".

Dimensions (FP#2): The discussion minimizes the importance of using dimensions and material identification in ITAAC for a variety of design issues such as spent fuel pool criticality analysis, shielding, seismic response, etc.

Operations (FP#4): The discussion excludes design aspects that pertain to operation from Tier 1. This appears to be an overstatement.

Tier 1 limited to pre-10 CFR 52.103(g) finding and for lifetime of plant (FP#4): This appears to be overly restrictive when considering a number of issues (e.g, fuel system design, control rod, and core design).



## NRC Questions

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DAC: How does DAC factor into this document?

Objective Criteria: In Section 3, what objective criteria does NEI envision to determine whether safety or risk significance is sufficiently high for inclusion in Tier 1? In Section 3.2, NEI states that a graded approach is applied to determine the level of detail in Tier 1 Design Descriptions. What objective criteria does NEI propose be used to determine that level of detail?

Priority & timeline: What timeline would be associated with the benefits envisioned by NEI?





# **THANK YOU!**

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