

Regulatory Frameworks and Technical Approaches for Qualification and Through-Life Performance of Materials in Advanced Reactors

When?

3 - 5 June 2025

US NRC Headquarters - 11555 Rockville Pike, Rockville, Maryland 20852

Contact

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[Register for the event](#)

The [NEA Working Group on New Technology \(WGNT\)](#) is organising a hybrid international workshop on 3-5 June 2025. The workshop will be hosted at the US Nuclear Regulatory Commission headquarters.

Background and objectives

Adequate material performance and through-life performance is critical for successfully licensing advanced non-water-cooled reactors. The NEA is writing a report on how to support adequate material performance and through-life performance for these unique reactor environments via regulatory frameworks and technical approaches.

This workshop seeks to bring together regulators and key stakeholders, including subject matter experts from technical support organisations and vendors. The workshop will enable development of the report via the following process:

- Prior to the workshop, presenters will submit a paper on established regulatory frameworks (e.g., regulations, approved guidance) or technical approaches (e.g., methods and models). These papers will be incorporated directly into the report, similar to a conference proceedings.
- During the workshop, presenters will share their established regulatory practices or technical approaches. Discussion will follow with workshop participants establishing best practice attributes and identifying key areas for future consideration.

Topics

The focus is on technical approaches with high technical maturation that have been or are planned to support regulatory engagement. Traditional light water reactor approaches with principles that can be applied to advanced non-water-cooled reactors are also within scope. The following topics will be covered during the workshop:

1. General qualification (Q-Gen);
2. Qualification of advanced manufacturing technologies (Q-A);
3. Qualification of graphite (Q-G);
4. Qualification of composites (Q-C);
5. General through-life performance (T-Gen);
6. Through-life performance of advanced manufacturing technologies (T-A);
7. Through-life performance of graphite (T-G);
8. Through-life performance of composites (T-C).

Note:

- Qualification comprises efforts to inform the design of structures, systems, and components.
- Through-life performance comprises efforts to ensure that operation occurs within the design envelope once structures, systems, and components go into service.

Participation and registration

Participation is open to the public subject to the policies of the US NRC. **All participants must [register](#) before 5 May 2025.**

- Participants wishing to submit an abstract should use the following link: <https://forms.office.com/g/sykbmBTqS3>
The deadline for electronic submission of abstracts is 10 March 2025.
- Full-length papers should be submitted electronically as MS Word files by 12 May 2025.
- Presentations should be submitted by 28 May 2025.

** For more information on the timeline, please see the “Call for abstracts” document.*