



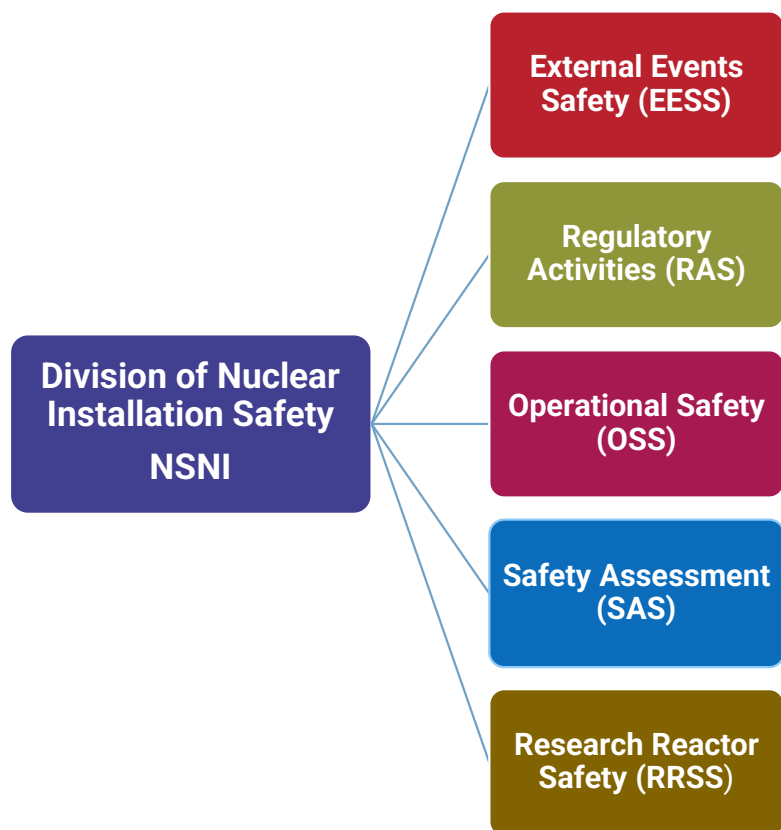
IAEA

IAEA Initiatives Supporting Advanced Reactor Deployment

Anna Hajduk Bradford

**Division of Nuclear Installation Safety (NSNI)
International Atomic Energy Agency (IAEA)**

Division of Nuclear Installation Safety (NSNI)



- Development of **safety standards** for nuclear installations.
- Provision of **safety reviews and advisory services** to support the effective application of the safety standards.
- Support to Member States in **building and sustaining capability and capacity** in nuclear safety.

NHSI Regulatory Track Timeline

Build a common basis for regulatory cooperation

Common processes to cooperate in regulatory reviews

NHSI Phase I (2022-2024)



Build trust and understanding among regulatory bodies through cooperation

Support the implementation of cooperation processes and gather implementation feedback and lessons learned

NHSI Phase II (2025-2026)



Global Framework for Advanced Reactor Reviews (GFARR)

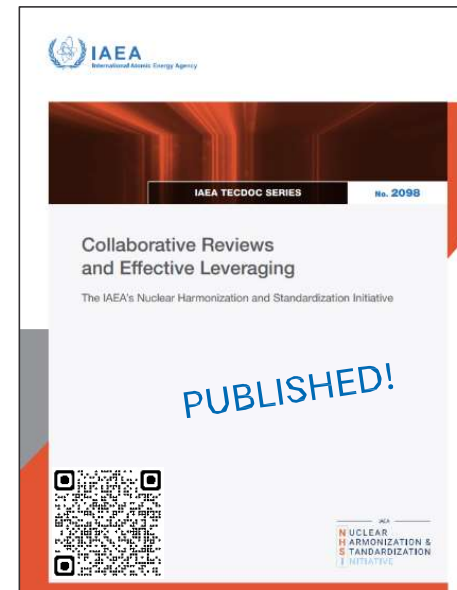
Common review scope and shared regulatory requirements and when possible, provide a mutual understanding of how to fulfill them

To achieve this aspiration, it is essential that regulatory bodies and the industry contribute by using the new NHSI processes and sharing feedback on the cooperation.

NHSI Regulatory Track Phase I Products (2022-2024)

Three technical documents outlining common processes to cooperate in regulatory reviews:

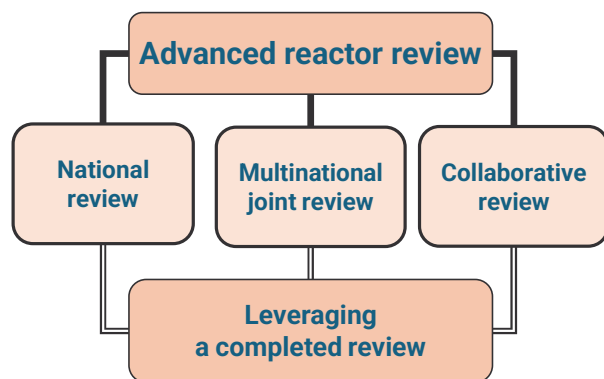
- two published in 2025 (WG1/WG3), one other just published last week (WG2)



GFARR Components

GFARR Safety Report

Review pathways



Technical aspects

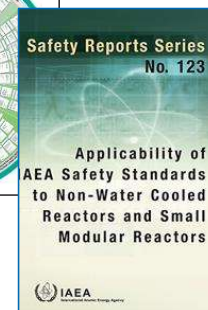
Review technical scope

Review criteria

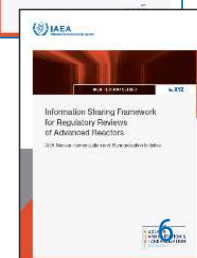
Common interpretation

Practical review guidelines and templates

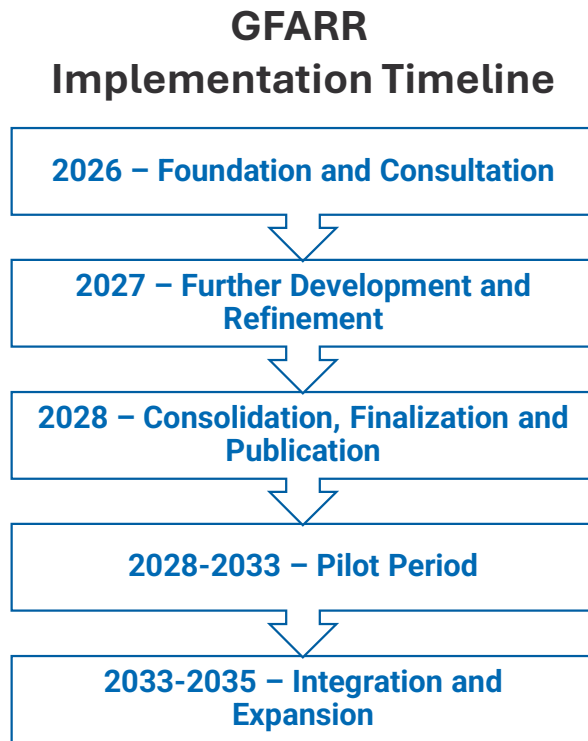
Blueprint for Development of the **Global Framework for Advanced Reactors Reviews (GFARR)** was just published last week.



Blueprint published in March 2026



GFARR Implementation Plan and Outcomes



Applications of the GFARR

- Early issue identification (during pre-licensing)
- Harmonized safety approaches
- Harmonized regulatory reviews
- Facilitating multinational projects

Benefits for regulatory bodies

- Efficient allocation of resources
- Access to global expertise
- Enhanced understanding of innovative technologies
- Strengthened international cooperation
- Opportunity to harmonized
- Improved public confidence

Benefits for reactor designers and license applicants

- Design acceptance across jurisdictions
- Credible path towards full compliance
- Cost savings through standardization
- Enhanced market access
- Improved public confidence

EAGLES-300 NHSI International Pre-Licensing Pilot Project

- **Multinational joint review** of the relevant technologies in the EAGLES technology roadmap (including LEANDREA and ALFRED design concepts) **against requirements of a selected reference framework** by Belgian and Romanian regulatory bodies and observation by the Italian regulatory body
- **Implemented under NHSI through the IAEA**, in support of the potential future licensing phases in the respective countries
- **A detailed workplan for the whole project life** was developed including review meetings, workshops, review questions, outcomes and meetings with the Consortium.



NHSI Pilot

- ✓ Coordinated review plan
- ✓ Common submission
- ✓ Common review requirements as much as possible
- ✓ Alignment with SSR-2/1 revision
- ✓ Common review queries and answers
- ✓ Common review meetings
- ✓ Common outcomes
- ✓ Easy to leverage review



EAGLES-300 NHSI International Pre-Licensing Pilot Project



September 2025

Signature of PAs
between IAEA and
the Consortium,
FANC and CNCAN

January 2026

1st Steering
Committee
Meeting in Vienna



November 2025

1st Meeting with
regulatory bodies
to prepare the
review of package

1

9-13 March 2026

WS on design
options and fuel
qualification
strategy

**Monthly tag-up meetings to discuss project
status and administrative issues**

Peer Reviews for SMRs

Site and External Events Design Review Service(SEED)

Focus on site selection, site assessment and design of structures, systems and components, taking into consideration site specific external and internal hazards.

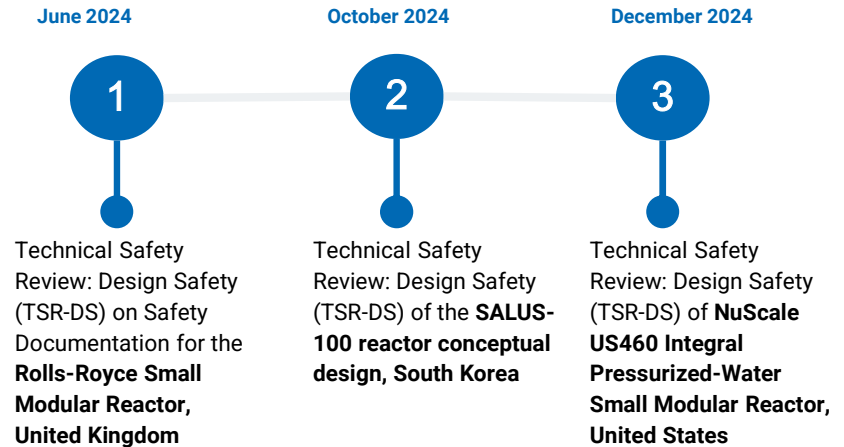


- **Site Selection Process**
Regina, Canada in September 2024
- **Safety Review Mission on Site Evaluation Report**
Uzbekistan, Tashkent, November 2023
- **Site Selection for Deployment of Small Modular Reactors**
Romania, Bucharest, August 2022 with a follow up mission conducted in April 2024.



Technical Safety Review (TSR)

To assess and address the specific needs of IAEA Member States at different stages of the development and deployment of a nuclear power programme. It provides a tailored independent evaluation of plant design safety and safety assessment.



Atomic Technologies Licensed for Applications at Sea (ATLAS)

Vision :

ATLAS is an IAEA initiative intended to create a framework that promotes and supports the safe and secure development and deployment of peaceful forms of nuclear applications at sea, specifically:

- civil nuclear-powered ships
- floating nuclear power plants (FNPPs)



Status & Next Steps

- **Terms of Reference**
Terms of reference drafted and reviewed by internal stakeholders
- **Engagement with IMO**
Ongoing bilateral discussions with IMO on planning efforts
IAEA participation in IMO SDC 12 (January 2026)
Revision of Code of Safety for Nuclear Merchant Ships
- **Bilateral Discussions**
Held multiple informal bilateral meetings with regulatory bodies and other stakeholders
- **Launch Event**
Targeting August 2026 at a port facility in the United States
- **Identification of Experts**
Solicitation of participants for each of the Project Groups





Thank You!



GFARR Implementation Plan

2026

Foundation and Consultation

- Prepare Draft Technical Aspects
- Launch Consultation on Technical Aspects
- Pilot Review Experience
- Prepare Draft Review Pathways



2027

Further Development and Refinement

- Resolve Comments on Technical Aspects
- Develop Guidelines and Templates
- Consult on Review Pathways



2028

Consolidation and Finalization

- Integrate Content
- Publish GFARR as a Safety Report, setting the stage for a five-year pilot phase (2028–2033)