World Status of Fast Reactors Technology and role of IAEA

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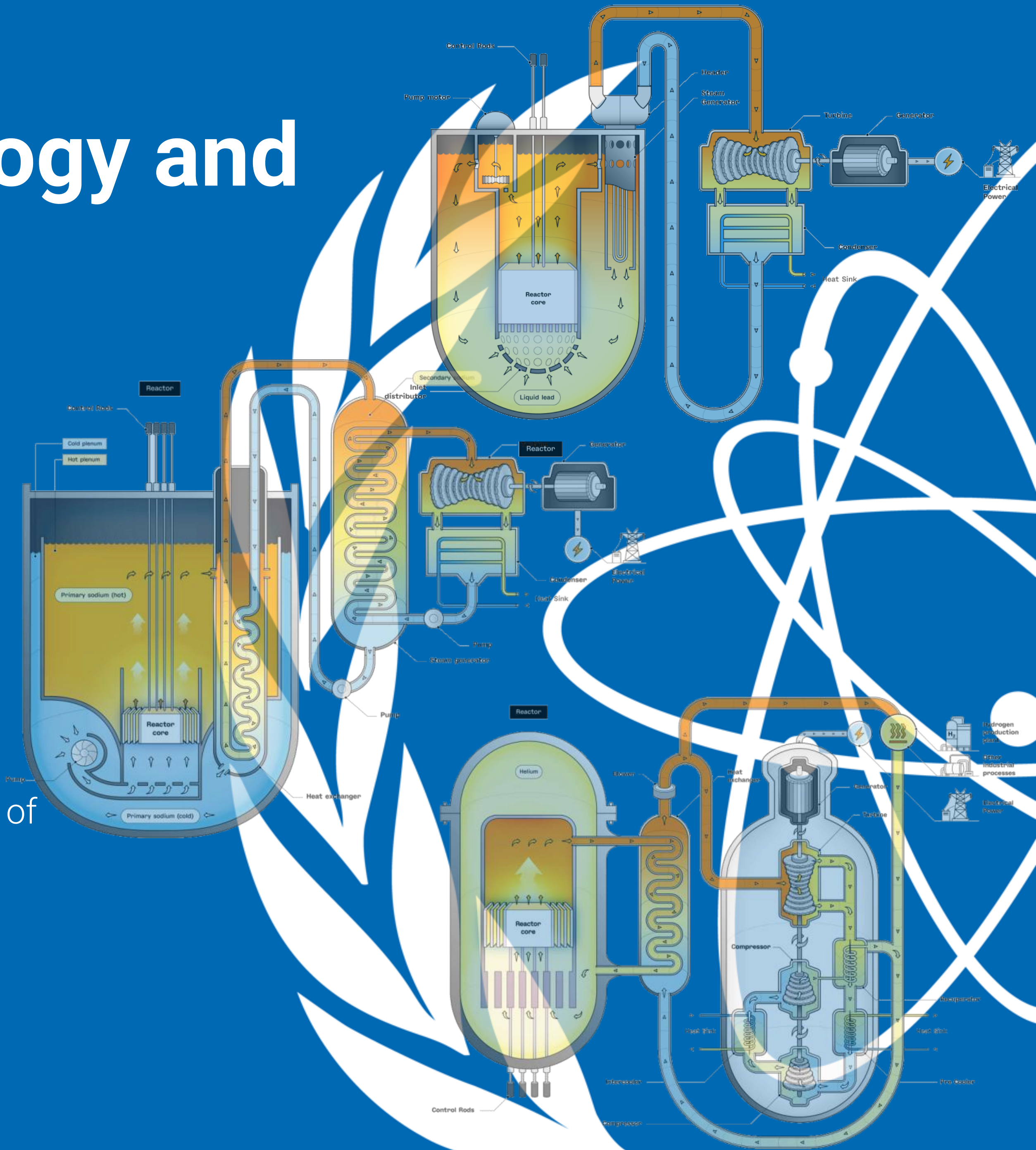

5th Joint ICTP-IAEA Workshop on Physics and Technology of Innovative Nuclear Energy Systems

13 – 17 July 2026, Trieste, Italy

https://www.iaea.org/topics/fast-reactors

Progress in Fast Reactor Technology Development

- Role of the IAEA
- Fast Reactors: World Status
  - in Operation
  - under Construction
  - in Development
  - IAEA Advanced Reactors Information System (**ARIS**)
- **IAEA activities on FRs**

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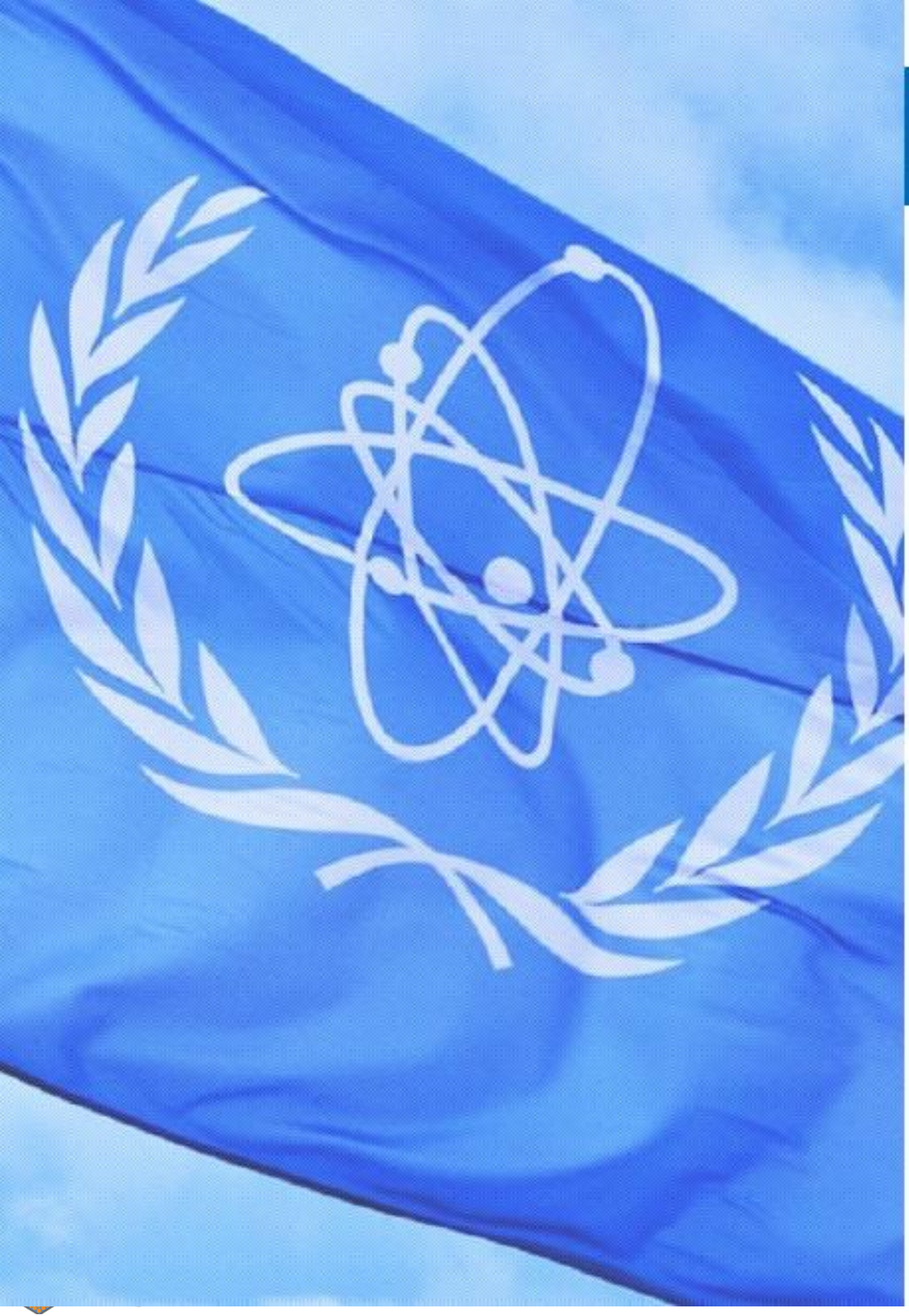


As an autonomous international organization within the United Nations system, **the IAEA is the global centre for cooperation in the nuclear field.**

IAEA at a Glance

180
Member States
(as of November 2024)

2,500+ staff
from over **100 countries**

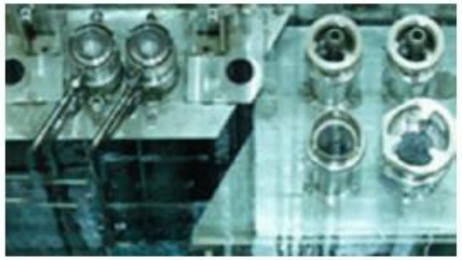
HQ in Vienna

Laboratories in Seibersdorf, Monaco and Vienna.

Regional offices in Toronto and Tokyo.

Liaison offices in New York and Geneva.

What does the IAEA do?



Assists Member States in using nuclear science and technology for peaceful purposes

Promotes strong and sustainable global nuclear safety and security framework to protect people, society and the environment

Verifies that States are honoring their international legal obligations to use nuclear material and technology only for peaceful purposes

Main Areas of Work

Nuclear Energy and Applications

Nuclear Safety and Security

Safeguards and Verification

Nuclear Safety and Security

Incident and Emergency Preparedness and Response

Safety of Nuclear Installations

Radiation and Transport Safety

Management of Radioactive Waste

Nuclear Security

The purpose of IAEA safeguards

IAEA nuclear verification (safeguards) provides assurance that States are fulfilling their commitments concerning the peaceful use of nuclear energy and deters States, through the risk of early detection, from acquiring or using nuclear material, facilities and/or other items subject to safeguards for proscribed purposes

History of safeguards

IAEA Statute enters into force

Establishes the IAEA as an autonomous international organization, authorized **“to establish and administer safeguards”**

1957

IAEA Safeguards

Safeguards are a set of **technical measures** applied by the IAEA to **independently verify** States' undertakings under their safeguards agreements

States **accept these measures** through the conclusion of safeguards agreements – CSA required under the Nuclear Non-Proliferation Treaty

190 States have SG agreements in force

IAEA Safeguards

- Three generic safeguards objectives apply to all States having a Comprehensive Safeguards Agreement

No diversion of declared nuclear material

No misuse of nuclear facilities for production of undeclared material

No undeclared nuclear material processing anywhere in the State

Safeguards are a State obligation, but implementation of safeguards ***relies upon facility operators***

Safeguards Technical Measures

In-field and HQ Safeguards measures

- ✓ Nuclear material accountancy
- ✓ Containment and Surveillance
- ✓ Design Information Verification
- ✓ Sample collection
- ✓ Open source analysis
- ✓ ...more

Technical measures are applied in accordance with SG agreements

NPT and IAEA Safeguards

NPT: Treaty on the Non-Proliferation of Nuclear Weapons was opened for signature on 1 July 1968 and entered into force on 5 March 1970.

Requires each NNWS to:

- Bring into force a comprehensive safeguards agreement with the IAEA
- Place all nuclear material in its territory, under its jurisdiction or control under IAEA safeguards
- Allow IAEA to verify that such nuclear material is not diverted to nuclear weapons or other nuclear explosive devices

Nuclear Energy

About
415
power reactors in operation in 32 countries

Over
60
power reactors under construction
(2/3 in Asia)

About
30
countries consider introducing nuclear power

Nuclear power reactors today provide ~10% of global electricity.

<u>This is actually about A QUARTER of the world's LOW CARBON electricity.</u>

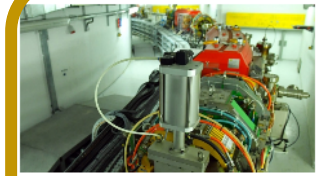
Department of Nuclear Energy
Division of Nuclear Power

Nuclear Power Engineering Section

The Section supports countries operating nuclear power plants or expanding their existing programmes to improve engineering, performance, management systems, human resource management, stakeholder involvement and technical infrastructure. It shares best engineering practices and innovations consistent with the global objectives of nuclear safety, security and non-proliferation. Read more →

Nuclear Infrastructure Development Section

This Section is responsible for coordinating IAEA assistance to Member States considering or embarking on nuclear power programmes. It supports capacity-building, conducts review missions and offers guidelines, standards and workshops on developing the infrastructure for a safe, secure and sustainable nuclear power programme. Read more →



Nuclear Power Technology Development Section

Fostering information exchange and collaborative research and development for advanced nuclear reactor technologies, this Section provides information to the IAEA's Member States on technology status and development trends for advanced reactor systems and their applications. Read more →

International Project on Innovative Nuclear Reactors and Fuel Cycles Section

The Section coordinates the activities of the membership-based International Project on Innovative Nuclear Reactors and Fuel Cycles (INPRO) to increase international cooperation on global nuclear energy sustainability, long term strategies and institutional and technical innovations for nuclear energy development and deployment. Read more →

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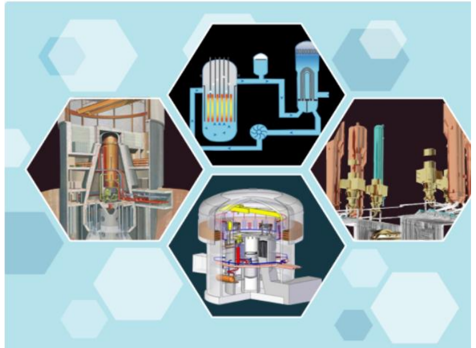
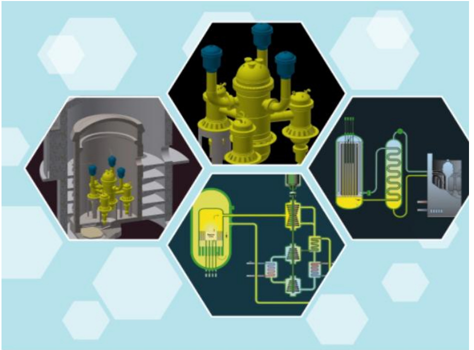
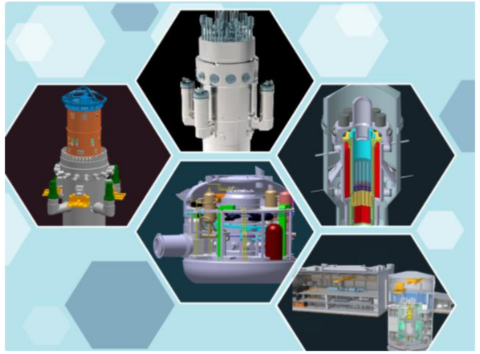


Advanced Water Cooled Reactors

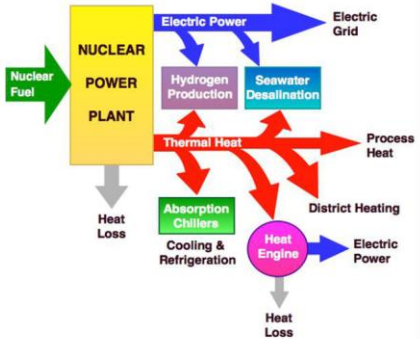
Advanced Technology for Fast Reactors



High Temperature Reactors



SMRs



Non-Electric Applications

GIF: Goals for Gen-IV Nuclear Energy Systems

Sustainability-1	Generation IV nuclear energy systems will provide sustainable energy generation that meets clean air objectives and provides long-term availability of systems and effective fuel utilisation for worldwide energy production.
Sustainability-2	Generation IV nuclear energy systems will minimise and manage their nuclear waste and notably reduce the long-term stewardship burden, thereby improving protection for the public health and the environment.
Economics-1	Generation IV nuclear energy systems will have a clear life-cycle cost advantage over other energy sources.
Economics-2	Generation IV nuclear energy systems will have a level of financial risk comparable to other energy projects.
Safety and Reliability-1	Generation IV nuclear energy systems operations will excel in safety and reliability.
Safety and Reliability-2	Generation IV nuclear energy systems will have a very low likelihood and degree of reactor core damage.
Safety and Reliability-3	Generation IV nuclear energy systems will eliminate the need for offsite emergency response.
Proliferation Resistance and Physical Protection	Generation IV nuclear energy systems will increase the assurance that they are very unattractive and the least desirable route for diversion or theft of weapons-usable materials, and provide increased physical protection against acts of terrorism.

See at: www.gen-4.org

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- FR26: International Conference on Fast Reactors and Related Fuel Cycles

Fast Reactors in Operation & under Commissioning

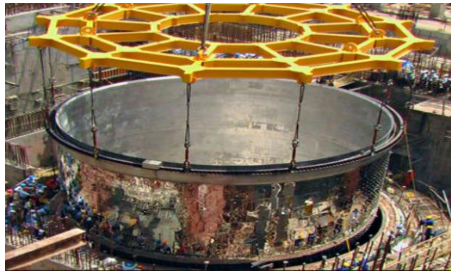
Country	Name	Coolant	Fuel	Purpose	Power (th/e) MW	Year (Op.)	Status
Russia	BOR-60	sodium	UO_2	experimental	**60/10**	1969	operating
	BN-600	sodium	UO_2	prototype	**1470/600**	1980	operating
	BN-800	sodium	UO_2/MOX	commercial	**2100/880**	2015	operating
China	CEFR	sodium	UO_2	experimental	**65/20**	2011	operating
	CFR600-1	sodium	UO_2/MOX	prototype	**1500/650**	2023	operating
India	FBTR	sodium	UO_2/UC	experimental	**40/13**	1985	operating
	PFBR	sodium	UO_2/MOX	prototype	**1250/500**	2026	commissioning
Japan	JOYO	sodium	UO_2/MOX	experimental	**100/--**	1978	lic renew (2026)


BN-600, Russia, 1980


BN-800
Russia, 2015


CEFR, 20 MW(e)
China, 2011

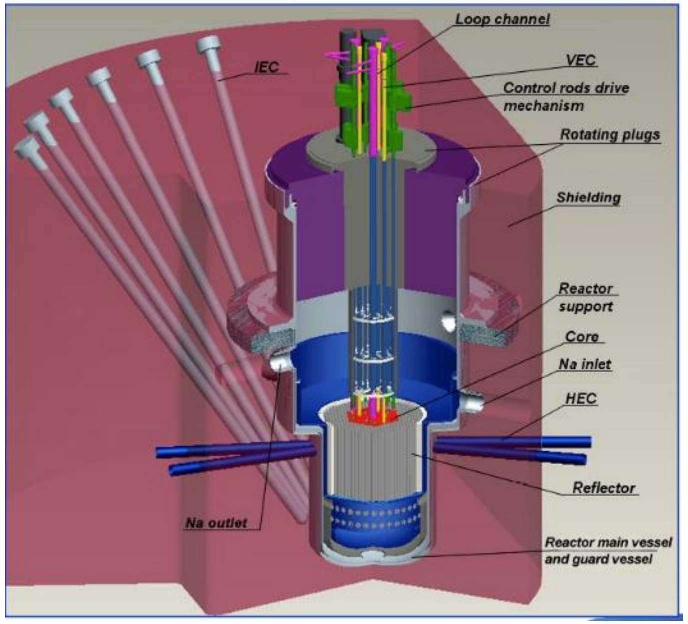

FBTR, 13 MW(e)
India, 1985


PFBR, 500 MW(e)
India, 2024

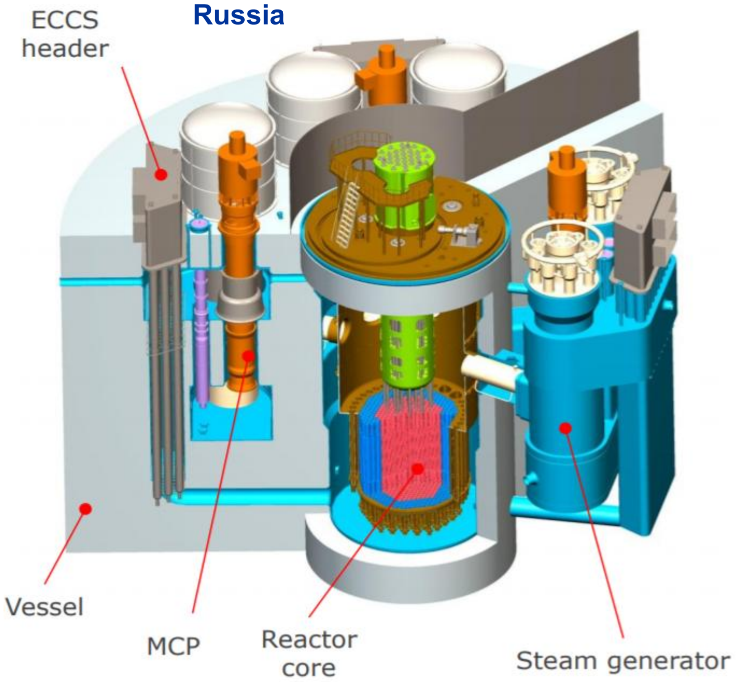
Fast Reactors under Construction

Country	Name	Coolant	Fuel	Purpose	Power, MW(th/e)	Year (Op.)	Status
Russia	MBIR	sodium	MOX	experimental	**150/50**	~2028	construction
	BREST-OD-300	lead	PuN/UN	demonstrator	**700/300**	~2028	construction
China	CFR600-2	sodium	UO_2/MOX	prototype	**1500/650**	~202?	construction
USA	NATRIUM	sodium	U-Zr	demonstrator	1000/345-500	?	NRC License

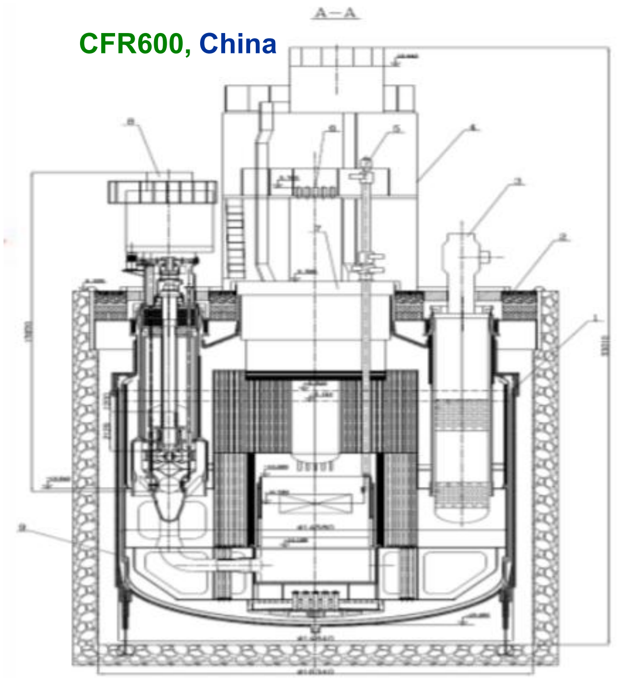
MBIR, Russia



BREST-OD-300 Russia



CFR600, China



Innovative SFRs under Development and Design

Country	Name	Fuel	Purpose	Power (th/e), MW	Status
Russia	BN-1200	PuN/UN/MOX	Gen-IV, industrial	2900/1220	design
China	CFR1200	MOX	Gen-IV, industrial	2800/1200	design
	CiFR1000	U-Pu-Zr	Gen-IV, industrial	2800/1000-1200	design
France	ASTRID	MOX	demonstrator	1500/600	suspended
	HEXANA	MOX	SMR prototype	2x400/Flexible	concept
	OTRERA	MOX	AMR prototype	295/110	concept
	Large SFR?	MOX?	Gen-IV Industrial	/1500?	plan
EU	ESFR	MOX, (U,Pu)Zr	Gen-IV prototype or AMR	3600/1500 360/150	concept
India	FBTR-2	U-Zr	experimental/SMR	320/100	concept
	FBR 1&2	MOX	prototype	1250/500	design
R. of Korea	KALIMER-600	U-TRU-10%Z	GEN-IV, prototype	1523/600	design
	PGSFR	U-Zr/U-TRU-Zr	GEN-IV, prototype	400/150	suspended
	SALUS-100	U-10%Zr	AMR prototype	267/100	design
USA	VTR	U-Pu-Zr?	experimental	300/-	suspended
	ARC-100	U-Zr	demonstrator	260/100	concept
	Oklo (Aurora)	U-Zr	demonstrator	/<75	breaks g 2025

Innovative LFRs under Development and Design

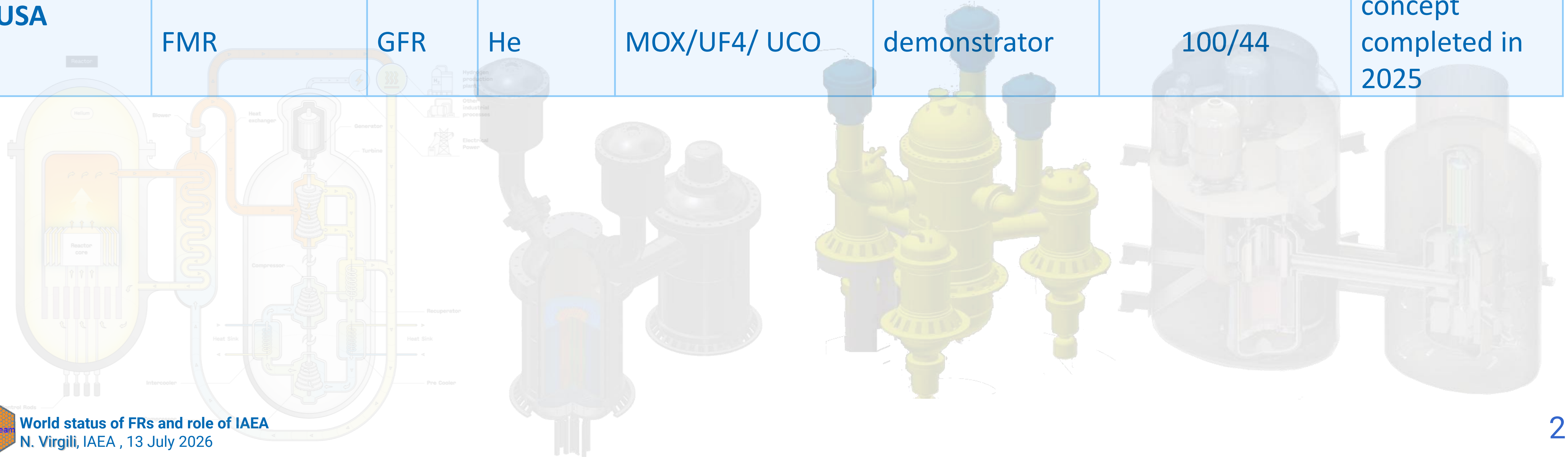
Country	Name	Type	Coolant	Fuel	Purpose	Power (th/e), MW	Status
Russia	**BR1200**	LFR	Pb	PuN/UN	commercial	2900/1200	design
	SVBR-100	LFR	LBE	UO_2	prototype	280/100	design
China	CLFR-300	LFR	LBE/Pb	UO_2	demonstrator	740/300	concept
	CLEAR-I	LFR	LBE	UO_2	experimental	10/-	design
	CLEAR-M10d	LFR	Pb	UO_2	demonstrator	25/10	concept
Belgium	**MYRRHA**	LFR ADS	LBE	MOX	experimental	100/-	design
Italy + EU	**LFR-AS-30/200 (newcleo)**	LFR	Pb	MOX	Experimental /prototype	/30 or /200	concept
EU	**EAGLES-300 (ALFRED)**	LFR	Pb	MOX	Gen-IV, industrial	900?/350	concept
Sweden	**SEALER-55**	LFR	Pb	UN	commercial	140/55	design
USA	Westinghouse	LFR	Pb	MOX	demonstrator	950/450	design
	SSTAR	LFR	Pb		experimental	45/20	suspended
	FANCO (EAGL-1)	LFR	LBE	Haleo UO_2	?	600/240	design

Innovative Fast MSRs under Development and Design

Country	Name	Type	coolant	fuel	Purpose	Power (th/e), MW	Status
Canada	SSR-W	MSR	molten salt	UO_2	demonstration	750/300	demo
France	MSFR	MSR	molten salt (LiF-AFn)	U/Th/TRU	Gen-IV, prototype	3000/	concept
	STELLARIA	MSR	NaCl	$TRUF_3$	Prototype SMR	250/110	concept
	XS(A)MR (~~Naarea~~)	MSR	molten salt	ThO_2/UO_2	Prototype SMR	80/40	concept
Netherlands/ EU	Thorizon	MSR	molten salt	U/Th/TRU	Prototype SMR	250/100	concept
Russia	MOSART	MSR	molten salt	U/TRU	prototype	2400/	concept
USA	MCFR	MSR	NaCl	U/TRU	experimental	1800/800	design
R. of Korea	MARINA	MSR	molten salt	U/TRU	Commercial Ship propulsion & FNPP	100/35 per module	Concept

Innovative GFRs under Development and Design

Country	Name	Type	coolant	fuel	Purpose	Power (th/e), MW	Status
Japan	KAMADO FBR	GFR	CO_2	Oxide	demonstrator	3000/1000	concept
EU	ALLEGRO HeFASTo TREASURE	GFR	He	MOX	Gen-IV, demonstrator	75/- 200/	design
USA	EM^2	GFR	He	UC	demonstrator	500/265	concept
	FMR	GFR	He	MOX/UF4/ UCO	demonstrator	100/44	concept completed in 2025



Progress in Fast Reactor Technology Development

- IAEA Technical Working Group on Fast Reactors: 2026-2029
- Fast Reactors: World Status
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  - IAEA Advanced Reactors Information System (**ARIS**)
- **IAEA Activities on fast Reactors**

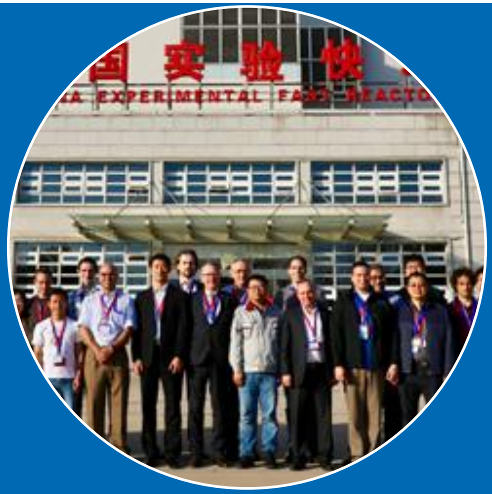
Main IAEA Activities on Innovative Reactor Technology

Knowledge Sharing

Publications

Conferences

TMs



Technology Development

Coordinated Research Projects (CRPs)

Capacity Building

Training Courses

Workshops

Webinars

e-Learning

TECDOCs

Advanced Reactors Information System (ARIS)

Designs in ARIS	Design Organizations	Countries
127	> 75	~25

Web accessible database and a tool for Member States at various stages of nuclear power development, offering standardized, impartial data on reactor designs, including evolutionary and innovative concepts, to support informed reactor technology assessments

Access online: Advanced Reactor Information System | ARIS

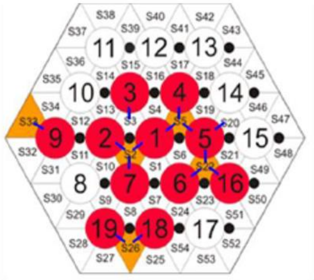
NACIE CRP: Benchmark of Transition from Forced to Natural Circulation Experiment with Heavy Liquid Metal Loop

The Italian National Agency for New Technologies, Energy and Sustainable Economic Development (ENEA) proposed this CRP to TWG-FR 2020, launched in 2022.

ENEA operates NACIE-UP facility:

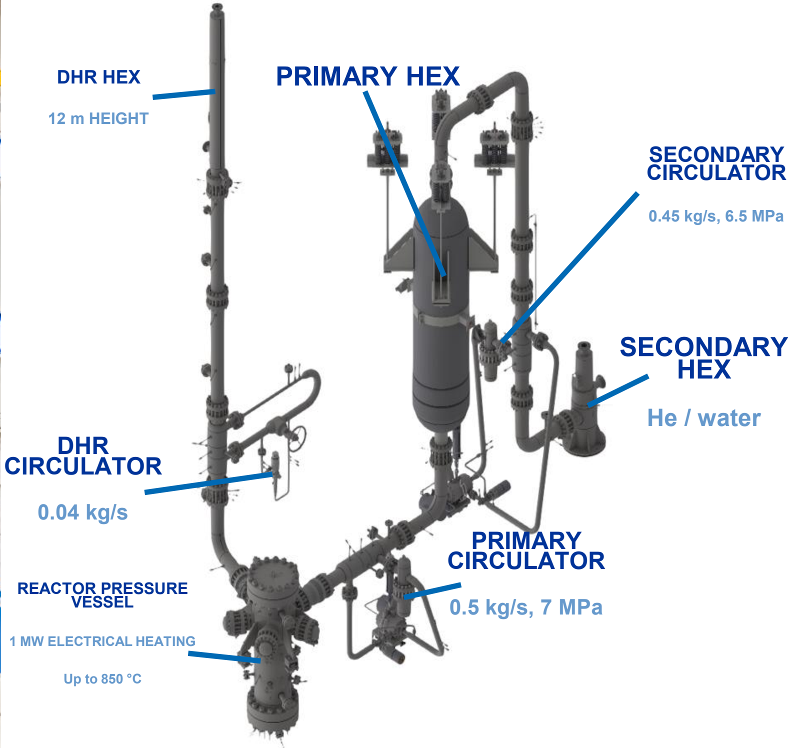
- Rectangular LBE flow loop
- Containing a wire spaced 19 pin fuel pin simulator
- Operating up to 250 kW for qualification and instrumentation testing.

- **Objective**: Validation of computational fluid dynamics (CFD), subchannel, and system analysis codes for heavy liquid metal systems.
- First CRP dedicated to TH of lead and LBE technology



Italian National Agency for New Technologies, Energy and Sustainable Economic Development

New CRP: S-Allegro Facility



CRP: Benchmark Exercise: Simulation of Thermal Hydraulic Transients

1st Research Coordinated Meeting
3 – 5 March 2025, Vienna

Primary circuit	
Working fluid	Helium
Max. temperature	850°C
Max. pressure	7 MPa
Max. mass-flow rate	0.5 kg/s
DHR loop height	12 m
Reactor vessel	
Max. heating power	1.05 MW
Height	2.99 m
External diameter	0.62 m
N of heating assemblies	7
Secondary circuit	
Working fluid	Helium
Maximum temperature	820°C
Maximum pressure	6.5 MPa
Maximum mass-flow rate	0.45 kg/s
Tertiary circuit	
Working fluid	Water
Nominal temperature	Ambient
Maximum pressure	0.6 MPa
Maximum mass-flow rate	100 m3/h
Heat exchangers	
Primary HX nominal power	1.05 MW
Primary HX dimensions	D=1.4 m, H=5 m
Secondary HX nom. power	1.05 MW
Secondary HX dimensions	D=0.4 m, H=1.4 m
DHR HX nominal power	47 kW
DHR HX dimensions	D=0.25 m, H=3 m

CRP on STELLA-2 Sodium Facility

STELLA-2: Sodium Thermal-Hydraulic Effect Test Loop for Safety Simulation and Assessment: Phase 2

- Liquid Sodium facility in Republic of Korea

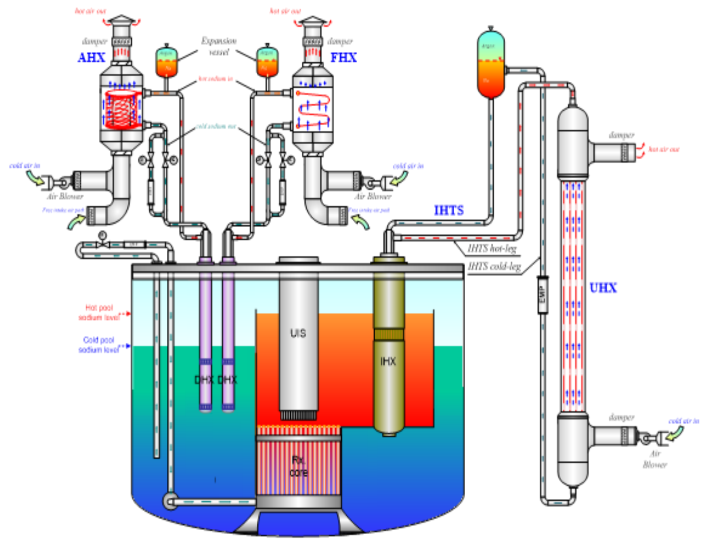
Main field of activity

- The CRP aims to validate thermal hydraulics simulation codes for sodium cooled fast reactors (SFRs) using experimental data provided by KAERI from the STELLA-2 facility, thereby enhancing SFR safety and performance.

Background

- Proposed by Republic of Korea at the 56th Meeting of TWG-FR in 2023
- STELLA-2 CRP proposal discussed and finalized at CM in December 2025

Open for Proposals

Item	Description	Schematic representation
System constituent	• Main vessel: core, cold pool, hot pool, UIS • Na loops: PSLS (2), IHTS (2), DHRS (4; 2 PDHRS, 2 ADHRS) • Na-Na HXs: IHX (4), DHX (4) • Na-air HXs: UHX (2), FHX (2), AHX (2) • Auxiliary systems: cold trap, Na storage tank, cover gas control, I&C	
Design temp./pres.	• 600 °C / 5 bar (structures)	
Dimensions	• Facility as a whole: 18 m × 15 m × 30 m (L × W × H) • Main vessel: 2.2 m × 3.7 m (D × H)	
Sodium inventory	• 15 ton	
Max. Na flow rate	• 25 kg/s	
Electrical power rating	• Core (electrical core simulator): ~ 500 kW • Total (including trace heaters): ~ 3.0 MW	

Joint ICTP-IAEA Workshops

Physics and Technology of Innovative Nuclear Energy Systems

- ***In 2016, 2018, 2022 and 2024,*** *in ICPT Trieste, Italy; next in July 2026*
- *Contributed by NPTDS, INPRO, GIF and external experts*

Open-Source Nuclear Codes for Reactor Analysis (**2023**: IAEA ONCORE)

- ***OpenFOAM*** *and its derivatives for CFD simulation of multi-physics and multi-scale problems*
- ***GenFOAM*** *for core thermal hydraulics, neutron transport and structural mechanics modelling*
- ***OpenMC*** *Monte-Carlo neutron transport*
- ***ARMI*** *Advanced Reactor Modelling Interface*

2nd ONCORE Workshop: 22-26 September 2025:

- https://indico.ictp.it/event/10868

Joint ICTP–IAEA Workshop on Open-Source Nuclear Codes for Simulation of Fast Reactors

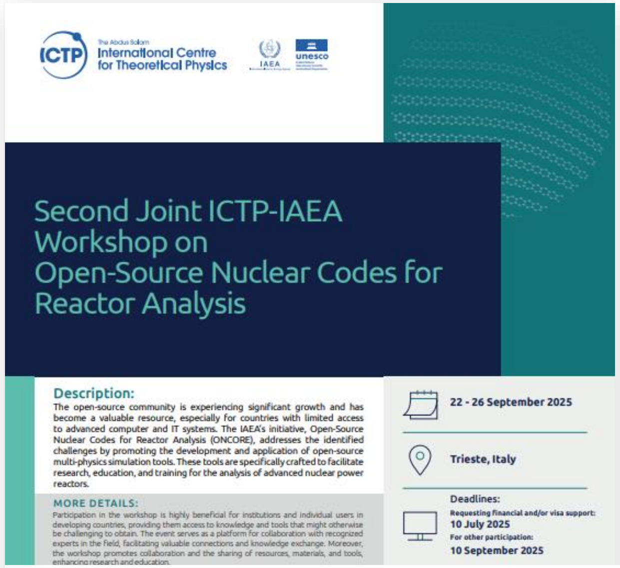
IAEA

The focus was on the following topics:

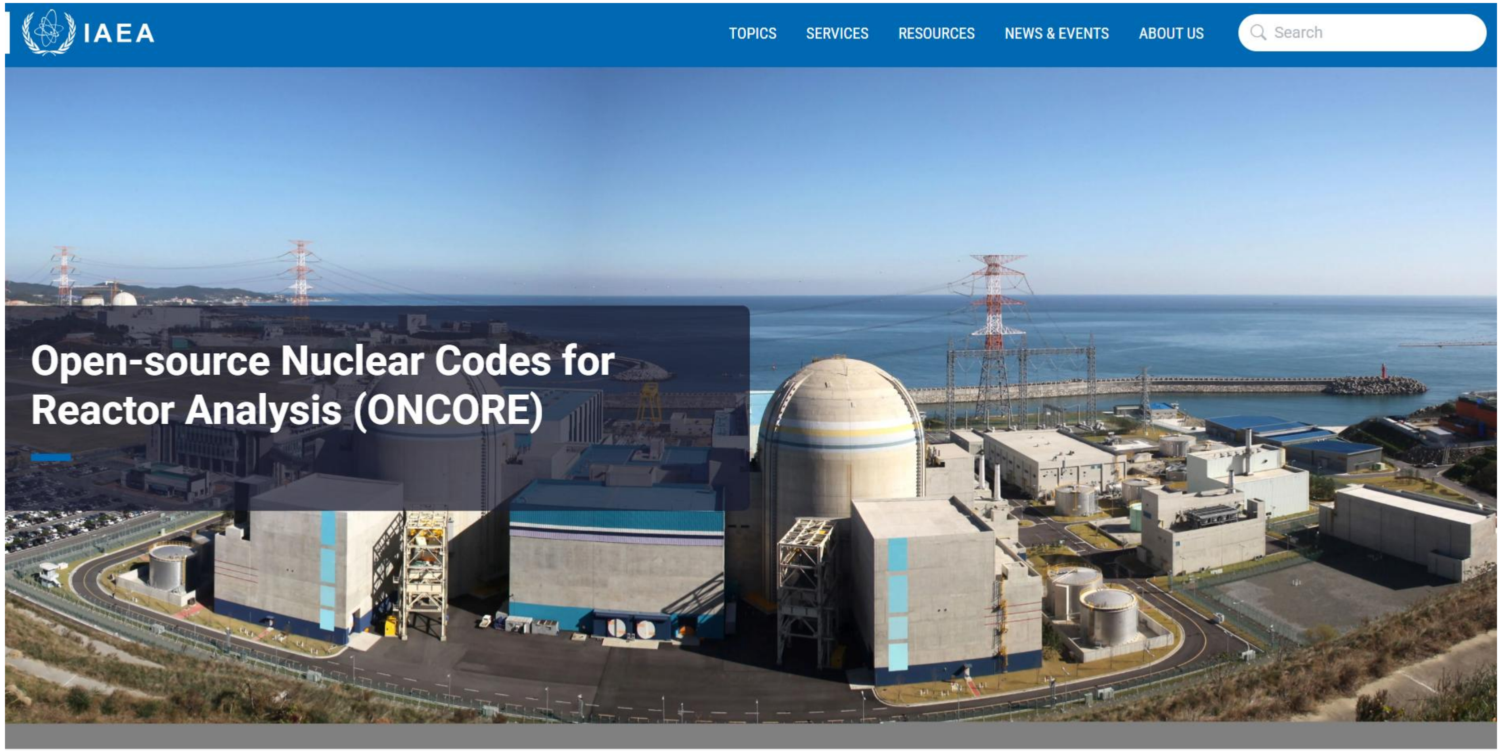
- **General overview**, theoretical background, benefits and challenges of the open-source approach in simulation of nuclear reactors
- **OpenMC** Monte-Carlo Neutron Transport Code: Applied to both fission reactors and fusion systems
- **OpenFOAM** and its Derivatives for Computational Fluid Dynamics (CFD) simulations of nuclear reactor thermal hydraulics and coupled neutronics, including GenFOAM
- **MOOSE** Parallel Finite Element Framework: Employed for multi-physics and multi-scale simulations, and
- **Cardinal**
- **Modelica**

22 - 26 Sep 2025, ICTP Trieste, Italy

- https://indico.ictp.it/event/10868



IAEA ONCORE



The ONCORE initiative makes use of several tools, including a public Git repository and a public SharePoint site with a members' area to facilitate exchange of information among experts.

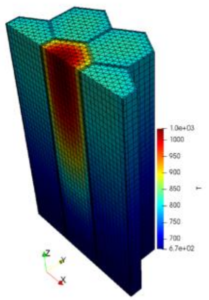
The Open-source Nuclear Codes for Reactor Analysis (ONCORE) initiative is an **IAEA-facilitated international collaboration framework** for the development and application of open-source multi-physics simulation tools **to support research, education and training** for the analysis of advanced nuclear power reactors.

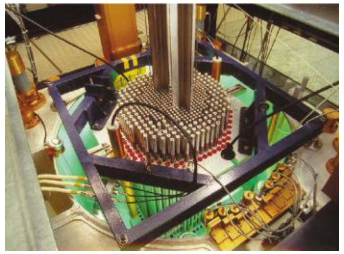
https://www.iaea.org/topics/nuclear-power-reactors/open-source-nuclear-code-for-reactor-analysis-oncore

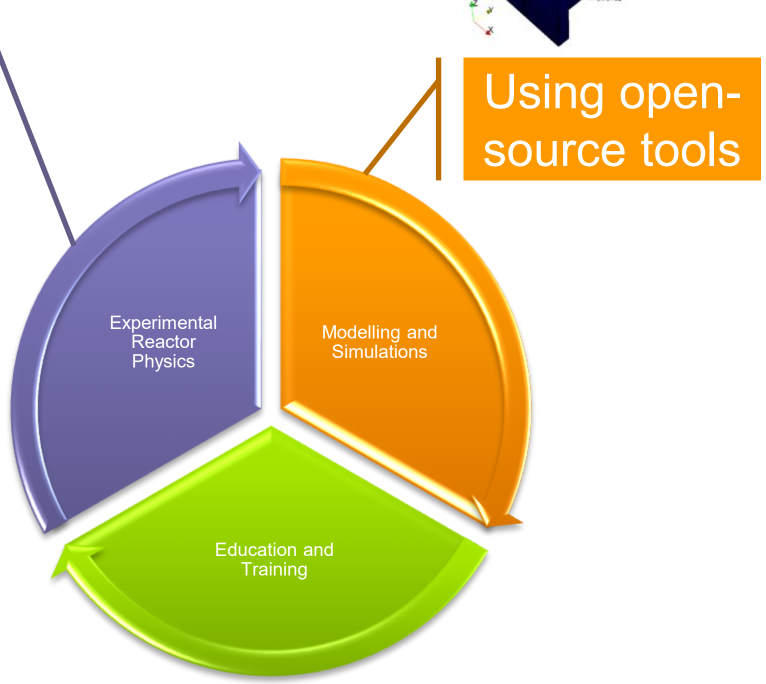
https://nucleus.iaea.org/sites/oncore

ONCORE Platform

- **Common platform** in advanced reactor experiments and high-fidelity multi-physics nuclear simulation techniques **for open-source code development and validation**
- Links to 35+ Open source tools
  - Neutronics
  - Thermal-hydraulics, system analysis, containment
  - Structural mechanics, Fuel behavior, Materials
  - Multi-physics applications and libraries
  - Data processing, optimization, pre-post processing
  - Application frameworks
- 2 tools hosted and distributed by ONCORE
  - VSOP99/11: HTR pebble-type design and safety analysis
  - STACY: V/HTR safety analyses for the quantification of fission product release from the fuel
  - HCP: HTGR safety analysis integrated code







https://nucleus.iaea.org/sites/ONCORE

ONCORE Webinar Series on Multiphysics Modelling of Nuclear Reactors using OpenFOAM

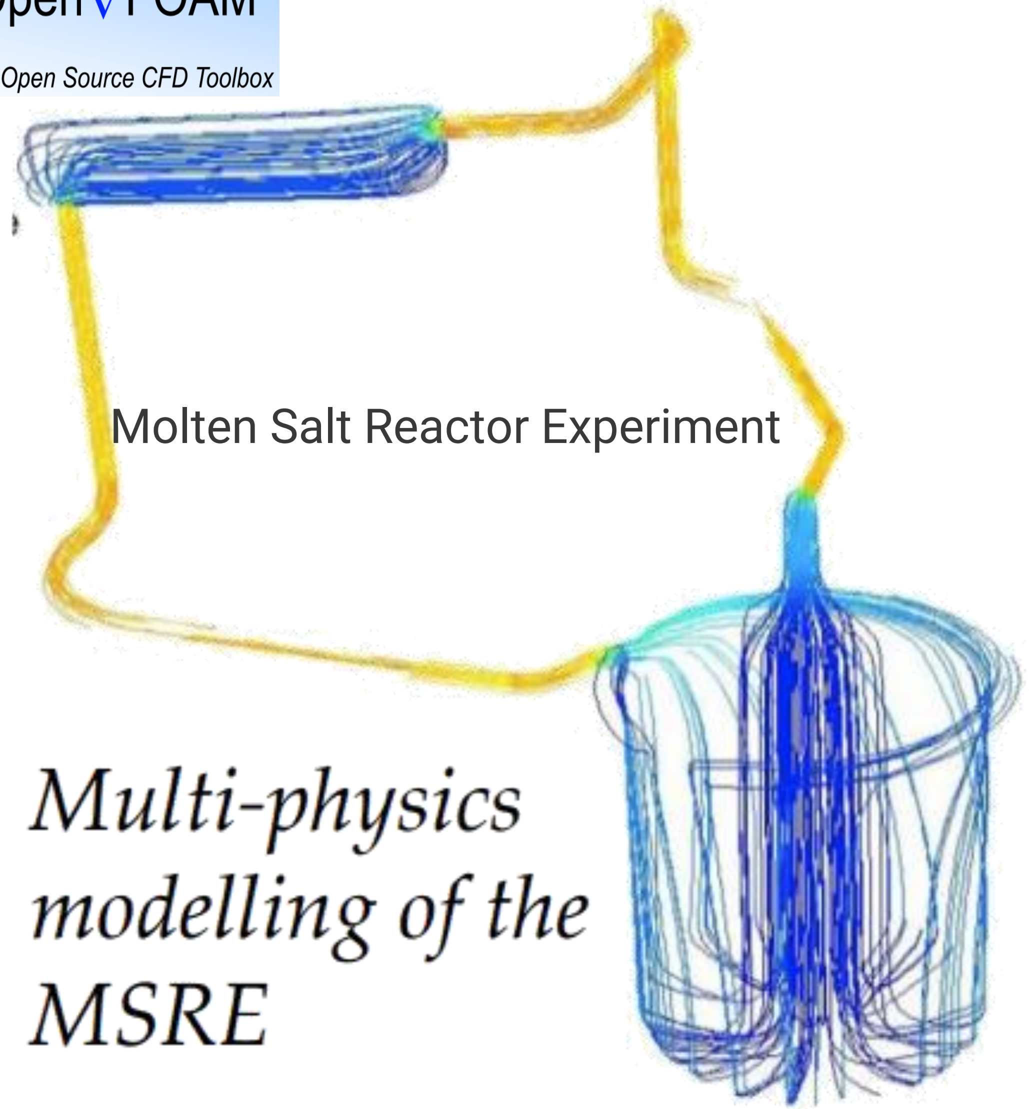
IAEA

OpenFOAM
The Open Source CFD Toolbox

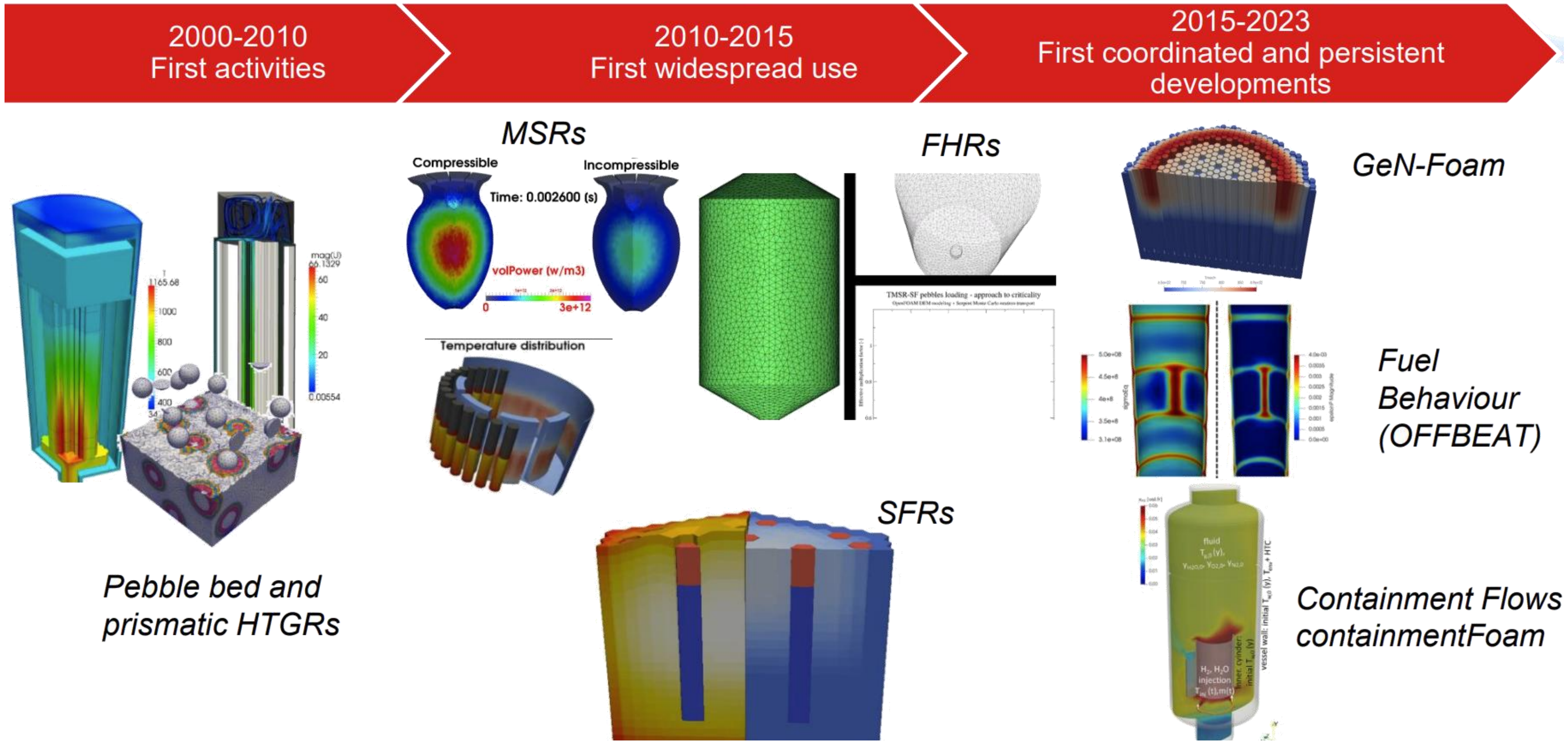
12 lectures in the series covering:

- Overview of using OpenFOAM as a multi-physics library for nuclear reactor analysis
- Brief introduction to the use of finite-volume methodologies
- Basics of Partial Differential Equations (PDEs)
- Problem definition
- Geometry and mesh generation
- Introduction to OpenFOAM's source code and object-oriented programming
- ContainmentFOAM tool for system-scale CFD analysis of containment atmosphere pressurization, H2/CO mixing and mitigation.
- GeN-Foam tool as multi-physics solver in nuclear reactor design and safety analysis
- OFFBEAT tool, a solver for fuel behavior analysis in nuclear reactors. As a multi-dimensional code, it allows studying the evolution of the fuel in 1-D, 2-D or 3-D, and it can simulate both transient and steady-state conditions.
- GeN-ROM, a data-driven model-order reduction tool for nuclear applications based on GeN-Foam

Recordings of all lectures available here:
https://elearning.iaea.org/m2/course/view.php?id=1286

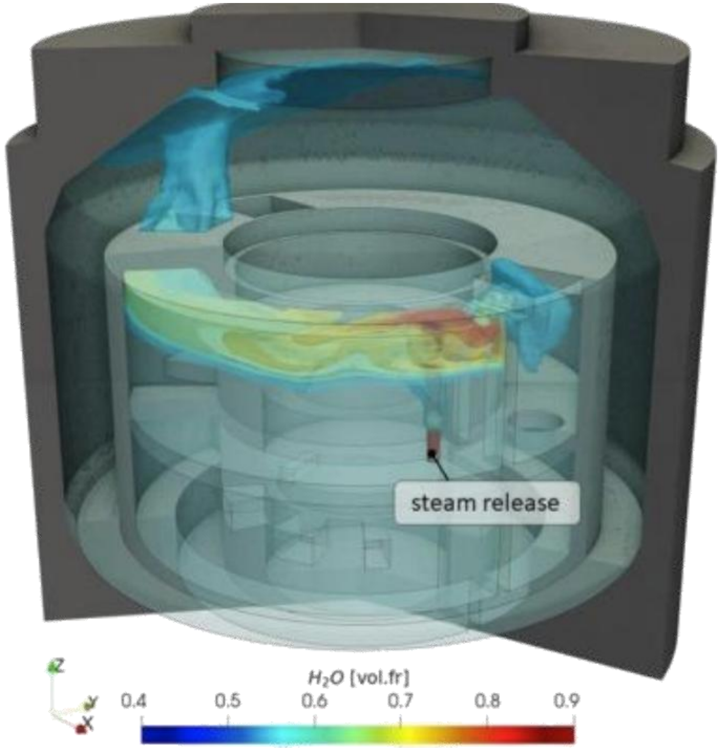


Open∇FOAM in Nuclear Applications



OpenFOAM Derivatives

- containmentFoam next-generation tool for containment analysis



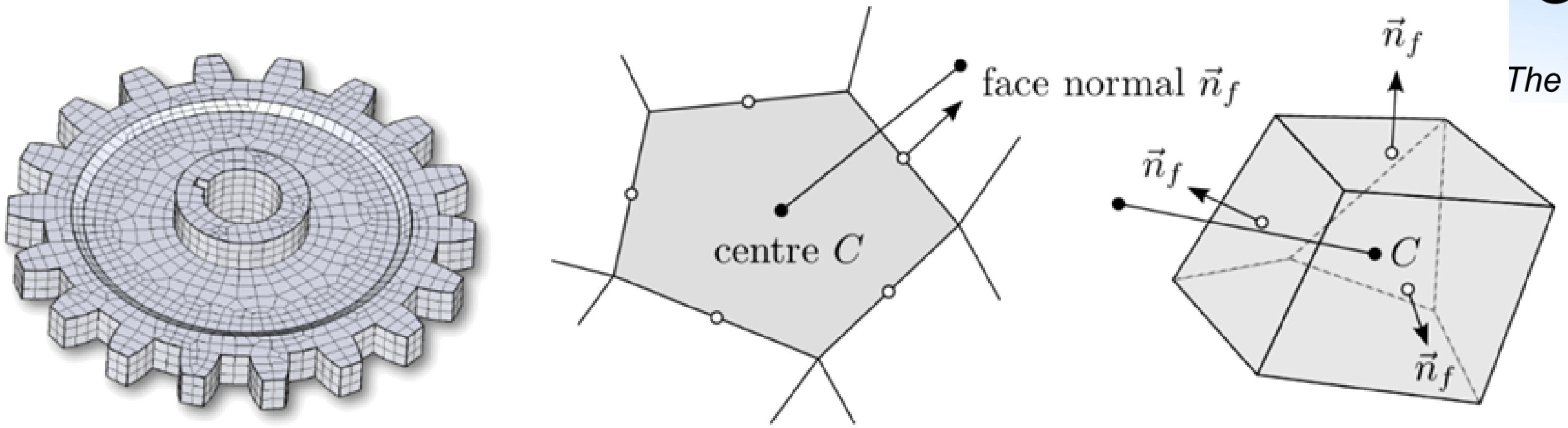
ONCORE Webinar Series on Multiphysics Modelling of Nuclear Reactors using OpenFOAM

IAEA

- OpenFOAM is a widely-used open-source toolbox for industrial CFD and a library for finite-volume discretization of PDEs in nuclear applications
- Supports ONCORE initiative’s education and training.
- The Webinar Series (started in 2022) provided up-to-date insights on OpenFOAM’s capabilities, strengths, challenges, and guidelines, helping users make informed decisions and encouraging further independent learning.

OpenFOAM

The Open Source CFD Toolbox

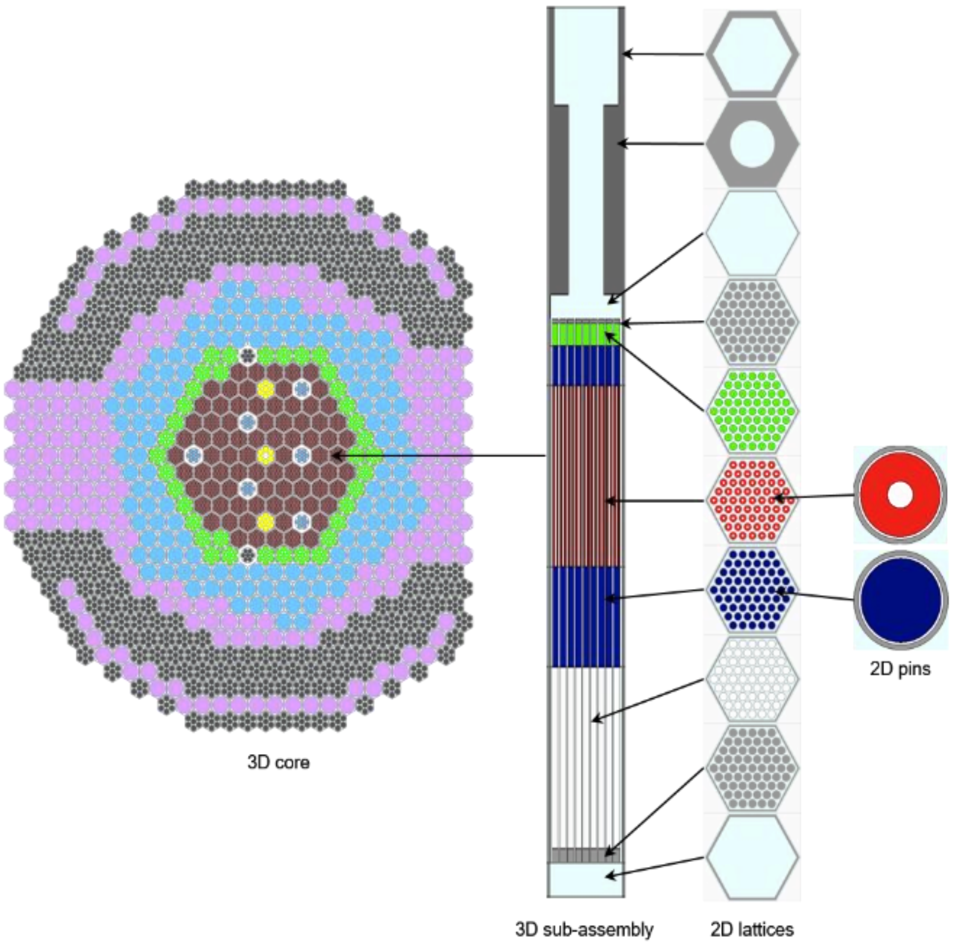


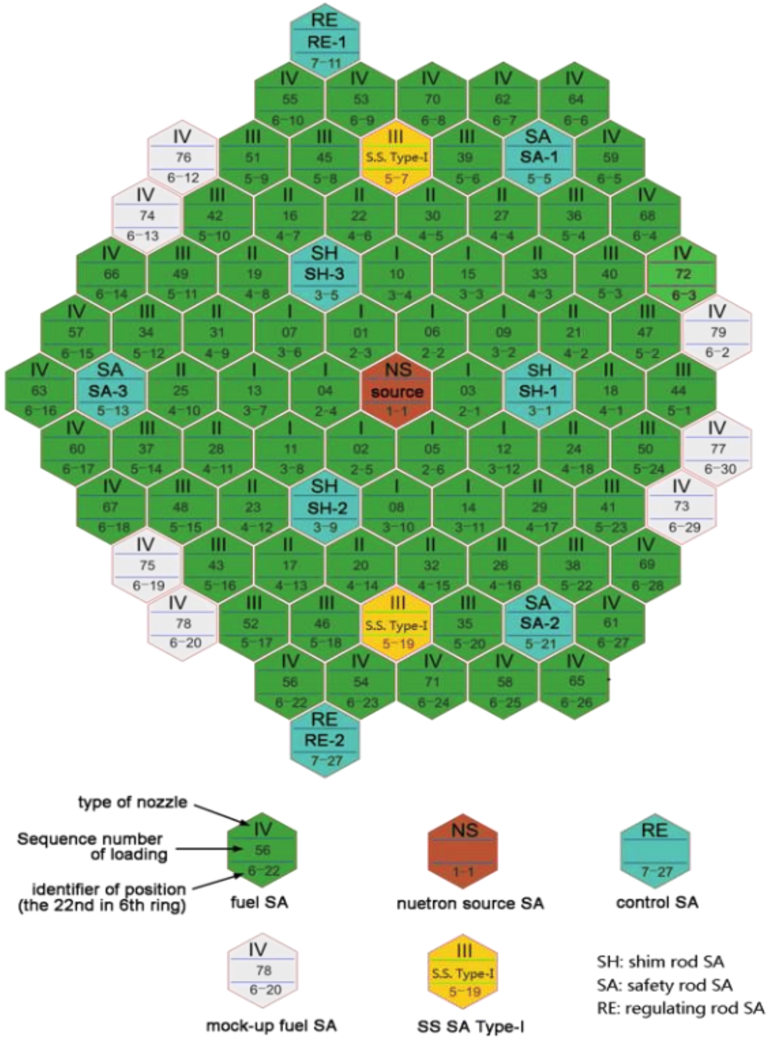
Discretized Domain | 2D | 3D

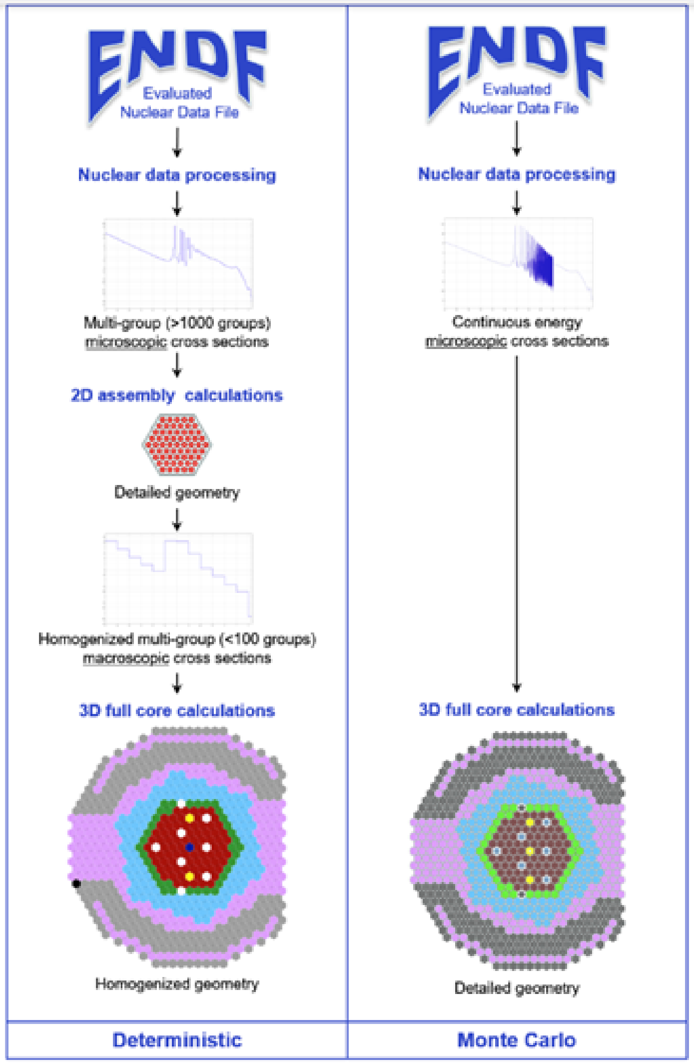
*https://www.openfoam.com/

ICTP-IAEA ONCORE Workshop 2023

- Application of OpenMC for the analysis of 20 MWe CEFR start-up tests







7-11 August 2023, Trieste, Italy

ICTP-IAEA ONCORE Workshop 2023

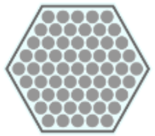
#	2D axial region		OpenMC input
	Content	Snapshot	

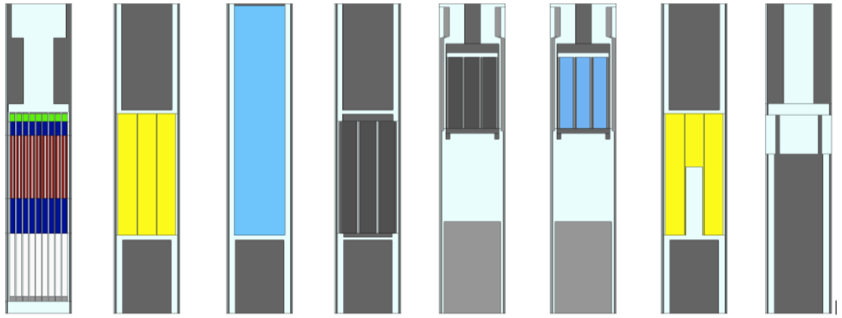
0	Outside		`c_FU_OUT = openmc.Cell( name='c_FU_OUT')`
			`c_FU_OUT.region = +pz_FUEL_HEA`
			`c_FU_OUT.fill = u_FU_HEA`

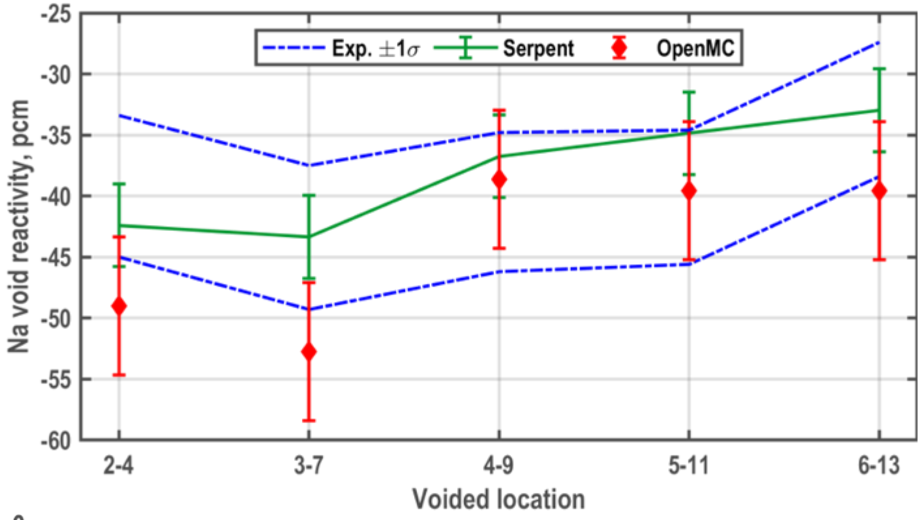
1	Head		`c_FU_HEA = openmc.Cell( name='c_FU_HEA')`
			`c_FU_HEA.region = -pz_FUEL_HEA & +pz_FUEL_USH`
			`c_FU_HEA.fill = u_FU_HEA`

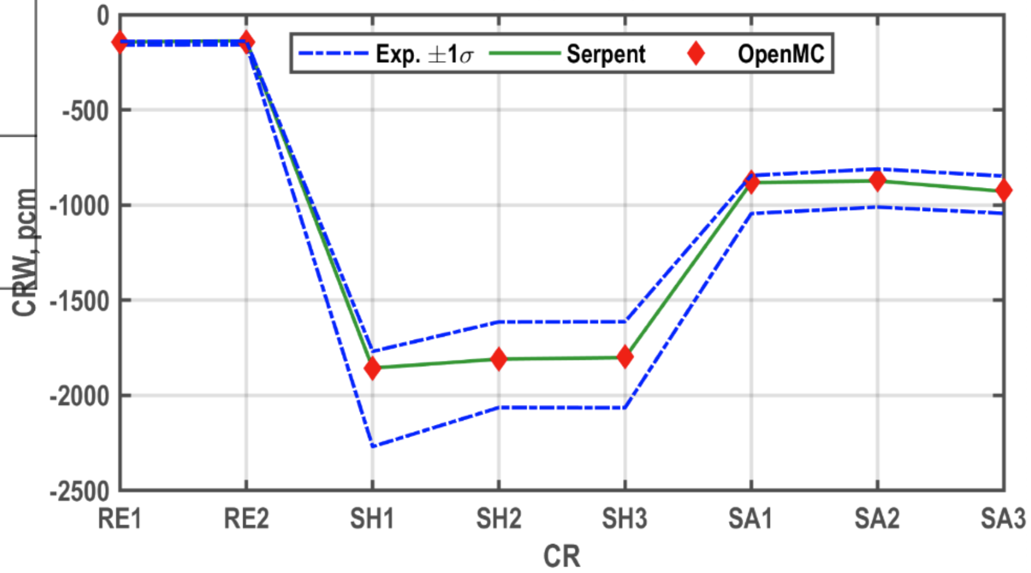
2	Upper shield		`c_FU_USH = openmc.Cell( name='c_FU_USH')`
			`c_FU_USH.region = -pz_FUEL_USH & +pz_FUEL_UCN`
			`c_FU_USH.fill = u_FU_USH`

3	Upper connector		`c_FU_UCN = openmc.Cell( name='c_FU_UCN')`
			`c_FU_UCN.region = -pz_FUEL_UCN & +pz_FUEL_TEP`
			`c_FU_UCN.fill = u_FU_UCN`

4	Top end plug		`c_FU_TEP = openmc.Cell( name='c_FU_TEP')`
			`c_FU_TEP.region = -pz_FUEL_TEP & +pz_FUEL_SPR`
			`c_FU_TEP.fill = u_FU_TEP`







OpenMC vs. Serpent code

IAEA ONCORE: Publications and Online Tools

- IAEA Technical Report Series (in printing, preprint is available):
  - *Development and Application of Open-Source Modelling and Simulation Tool*
  https://preprint.iaea.org/search.aspx?orig_q=reportnumber:IAEA-PC--9064
- IAEA Training Course Series (in printing):
  - *Fundamentals of neutronics simulations of a fast reactor based on IAEA's benchmark of CEFR start-up tests*
- *ONCORE Webinar Series on Multiphysics Modelling of Nuclear Reactors using OpenFOAM*
  - *https://elearning.iaea.org/m2/course/view.php?id=1286*
- *2023 Joint ICTP-IAEA Workshop on Open-Source Nuclear Codes for Reactor Analysis*
  - *https://indico.ictp.it/event/10199*

IAEA Webinar “Introduction to Basic Neutronic Simulations with OpenMC: Getting Started

IAEA

IAEA Webinar “Introduction to Basic Neutronic Simulations with OpenMC: Getting Started”

Wednesday 13 Aug 2025, 14:30 → 16:31 Europe/Vienna

Join online

Nicole Virgili (IAEA), Patrick Shriwise (ANL), Vladimir Kriventsev (IAEA)

Description

IAEA Webinar

Introduction to Basic Simulations with OpenMC: Getting Started

Register here to attend

As part of the IAEA's ONCORE (Open Source Nuclear Codes for Reactor Analysis) initiative, we are pleased to announce an upcoming webinar Introduction to Basic Neutronics Simulations with OpenMC: Getting Started. The event will be focused on the fundamentals of using OpenMC, an open-source Monte Carlo particle transport code widely used in the nuclear engineering community.

The webinar will be conducted by Mr Patrick Shriwise, a scientist at Argonne National Laboratory and adjunct professor at the University of

[IAEA Webinar “Introduction to Basic Neutronic Simulations with OpenMC: Getting Started” (13 August 2025): Overview · Indico for IAEA Conferences]

webex

English

IAEA Webinar on Introduction to Basic Simulations with OpenMC: Getting Started

Wednesday, August 13, 2025 2:30 PM - 4:30 PM

(UTC+02:00) Amsterdam, Berlin, Bern, Rome, Stockholm, Vienna

Host

VIRGILI, Nicole

Webinar speaker

Mr Patrick Shriwise

ANL, USA

Agenda

The International Atomic Energy Agency (IAEA) is hosting a webinar "Introduction to Basic Simulations with OpenMC: Getting Started". This webinar will provide a hands-on introduction to OpenMC, a modern open-source tool for Monte Carlo neutron transport simulations. Participants will learn how to set up and run simple neutronics calculations, interpret results, and become familiar with OpenMC's workflow and user interface. The session is designed to enable newcomers to approach more advanced topics with confidence.

Check the Agenda: https://conferences.iaea.org/event/430/timetable/

Speaker:
Mr Patrick Shriwise (ANL)

Moderators:
Ms Nicole Virgili (IAEA) and Mr Vladimir Kriventsev (IAEA)

Technical support:
Ms Panashe Ndlalambi (IAEA)

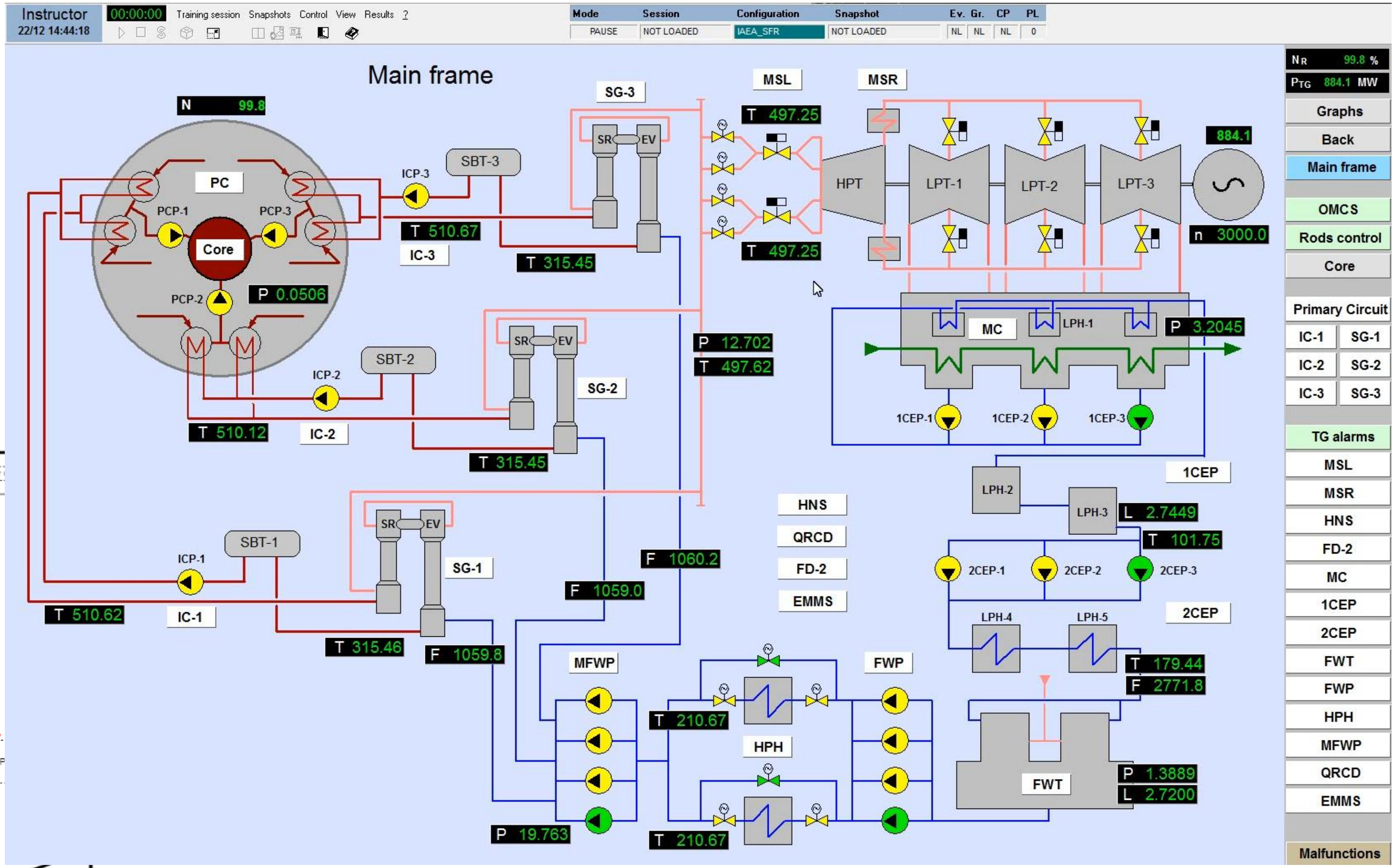
Register for webinar

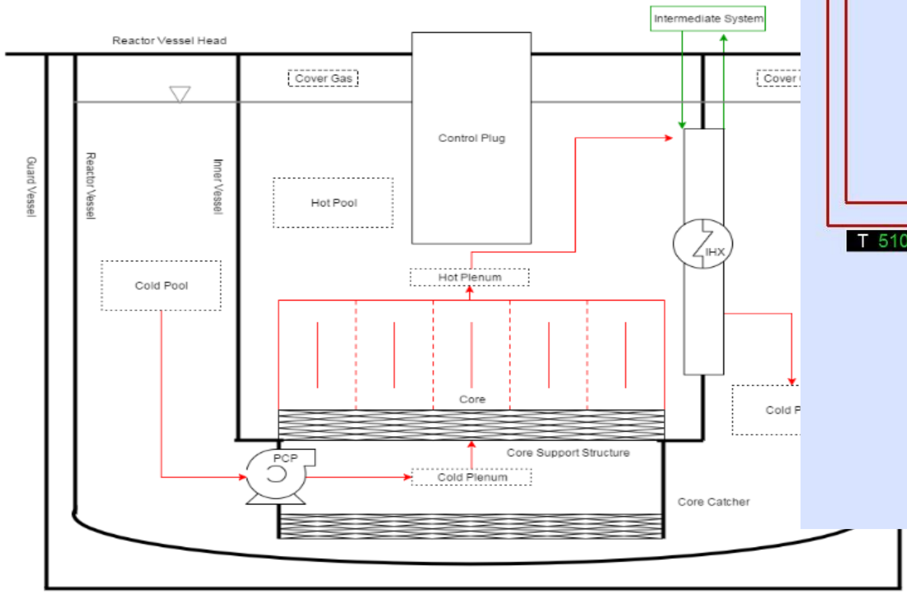
If you want to attend, register now. When your registration is approved, you'll receive an invitation to join the webinar.

Register

SFR Educational Simulator

- Pool type sodium cooled fast reactor simulator for education and training
- **2023: Ready Distribution to Member States**
- **Exercise Manual available online**





Atoms for Peace and Development…

Thank You!

email: FR@IAEA.ORG