ENSREG & newcleo

Licensing views

Launched in
SEPTEMBER 2021

Presence across
Europe

ACQUISITIONS

FUCINA ITALIA

RÜTSCHI

700+
EMPLOYEES

25+
YEARS OF RESEARCH

14+
PATENTS

€ 500 MILLION OF PRIVATE FUNDS CURRENTLY RAISING UP TO € 1 BILLION

newcleo
Futurable Energy

SMR DEPLOYMENT

- SMRs are necessary to decarbonize mankind activities for electricity supply, heat supply, desalinization, hydrogen supply, access to low-capacity power grids and, in longer term prospect, maritime propulsion and more!

- Because of huge capitalistic investments, the private sector needs cheaper new build capital cost with still a reasonable return on investments and with a reasonable timescale.

CIRCE Large pool (90 tons LBE)

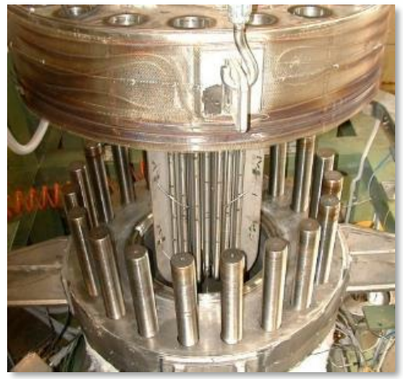
Lead cooled research facilities

SMR DEPLOYMENT

- The nuclear acceleration should be technologically neutral

- The nuclear acceleration should be public/private sector neutral too. Meaning that timescale for licensing and construction shall be reasonably reduced.

NACIE-UP loop



LIFUS-5 Separate Effect facility

RACHELE (Coolant chemistry lab)

Lead cooled research facilities

SMR DEPLOYMENT

- We need to drastically cut down nuclear accident probability and consequences to facilitate getting closer to population as needed.

- < 1mSv outside the fence in case of unlikely severe accident would be ideal maybe if close to population.

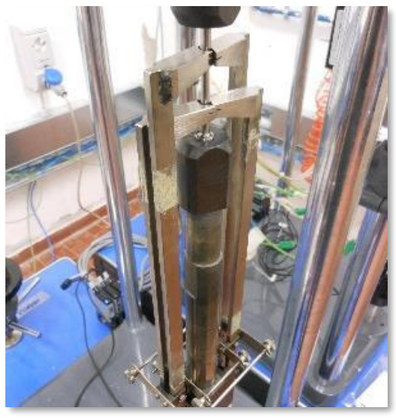
- Spent fuel intermediate storage away from reactors in a dedicated place pending reprocessing for sustainable nuclear energy prospect.

- National regulator to foster nuclear newcomers on the complex regulatory pathway.

LECOR Corrosion Loop

BIDONE Lead-Pool

HELENA Lead Technology Loop



Lead Mechanical Laboratory

Lead cooled research facilities

2023	2024	2025	2026	2027	2028	2029	2030	2031

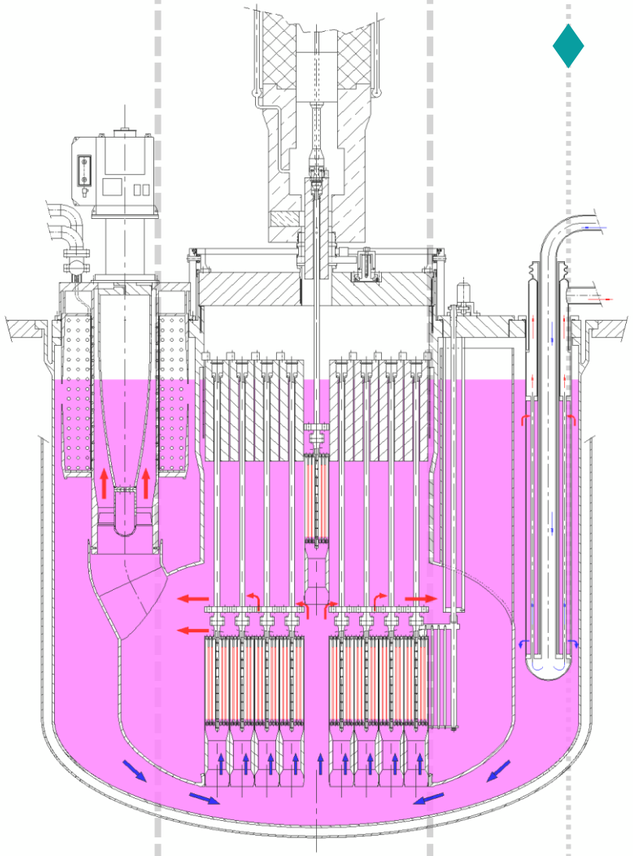
End of Conceptual Design

ASN seminar

End of Basic Design

DAC granted (Nuclear Licence)

Fuel Load



	PHASE-1	PHASE-2	PHASE-3
asn / IRSN	**30 and 200 MWe** **Safety orientations**	**Pre-licensing phase** **Safety options & Prelim-SR**	**licensing phase with the** **Final Review & assessment of:**
	30/05/23 Concept presentation **21/09/23** Cooling aspects **08/11/23** Severe accident **09/02/24** In-service inspection **07/03/24** Core design & reactivity control **20/03/24** Commercial discussions **04/06/24** In-vessel material qualify. & Steam Generators **26/06/24** fuel handling, waste, environment, radiation protection, accident analysis.	**05/07/24→** Seminar agenda agreement **19/11/24 → 22/11/24** LFR Seminar with F, UK, I, SK regulators & experts in Paris **18/03/25 →** ASNR report to help newcleo establish acceptable Preliminary Safety Reports for the LFR-AS-30 & LFR-AS-200 **December 2026 →** Licence Request	• PReliminary Safety Report (RPrS) • Environment impact study, water consumption & discharges… • Public enquiry & national debate • Waste management plan & decommissioning • Human & Financial capacity • Conventions, Liability, Euratom, etc. • Radiation Protection Maps • Rad Transport aspects • Security, Safeguards… • Other details

Site permit (*Autorisation Environnementale*) | **Earthworks and civil engineering** | **Assembly phase** | **Cold commissioning**

Direction régionale de l'Environnement, de l'Aménagement et du Logement
Liberté • Égalité • Fraternité
RÉPUBLIQUE FRANÇAISE

MRAe Missions régionales d'autorité environnementale

Ae Autorité environnementale

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PRÉFECTURE

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Futurable Energy

Fig 4.2.2 – V3

2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031

Basic Design

ASN seminar

Detailed Design

Licence request submission (DAC)

DAC Nuclear Licence

asn — IRSN

PHASE-1
MOX PLANT
Safety Options

Document preparation for the DAC request and detailed design progress

Licensing phase with the Final Review & assessment of

30/05/23 Concept presentation
05/09/23 MOX Plant concept
24/01/24 Safety options
28/02/24 Safety options
05/06/24 Safety options
07/06/24 Safety options

12/12/24 Safety Option Dossier to be officially submitted

2026 Licence request to be submitted to regulators with all necessary documents

- PReliminary Safety Report (RPrS)
- Environment impact study, water consumption & discharges…
- Public enquiry & national debate
- Waste management plan & decommissioning
- Human & Financial capacity
- Conventions, Liability, Euratom, etc.
- Radiation Protection Maps
- Rad Transport aspects
- Security, Safeguards…
- Other details

Site permit for MOX plant (autorisation environnementale)

Earthworks and civil engineering

Commissioning

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UK Generic Design Assessment (GDA) Timeline

Department for Energy Security & Net Zero

ONR

2023	2024				2025				2026			
Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4

GDA application | Application assess | Step 1 (12 Months) | Step 2 (12 Months)

Proposed scope boundary

Agreement on scope boundary w/ ONR + EA

Design Reference

Concept design reference

Design Reference Point

Design Reference Point

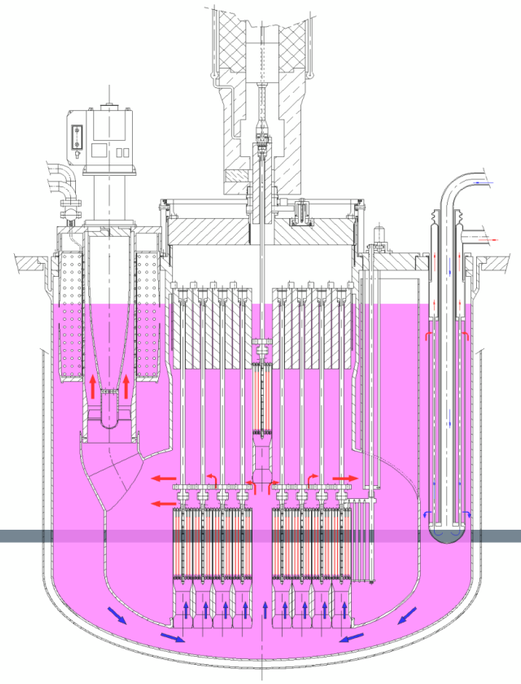
Concept design development | Basic design development

SSE Cases

Topic strategies | Topic deliverables | Topic deliverables

DSSER | *PSSER* | *PSR, PER, GSR*

1. GDA Preparation – Activities to ensure readiness to enter into the GDA process (from both an organisational readiness and design maturity perspective)
2. GDA Step 1 – Initiation Step where matters such as the scope and timescales are agreed, and ONR's knowledge of the design and the RP's safety and security cases increases. Importantly, this Step includes the RP identifying any immediate gaps in meeting regulatory expectations and proposing how these will be subsequently resolved
3. GDA Step 2 – Fundamental assessment of the generic safety, security and environment cases, to identify any potential 'showstoppers' that may preclude deployment of the design



200 MWe

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Licensing & construction

- Regulation to accept industrial risks and to facilitate civil engineering construction (just the concrete) before the nuclear licence with adequate permit & arrangements.

- Site permit duration to be reduced (2.5 years min) with national site selection & preparation.

- Regulation should be reviewed to attract private investments (along with public investments) for enhanced nuclear acceleration.

UK

FRANCE

ITALY

US

Newcleo's increasing numbers of partners and suppliers

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Thank you