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newcleo's R&D Programme in support of SMR-LFR Development and Deployment

newcleo is designing MOX-fuelled SMR-LFRs, aiming at commissioning a MOX production plant and a demonstrator in the early 2030s, followed by a 200MWe First-Of-A-Kind and a fleet.

The strengths of newcleo's reactor are safety, simplicity, compactness and cost competitiveness. These rely on lead properties and are enhanced by our innovative solutions, resulting in the elimination of several components no longer needed.

A broad R&D programme supports the company's incremental strategy to consolidate mature technologies and close existing gaps. This is implemented in partnership with ENEA, and benefits of the subsidiaries SRS-Fucina's know-how.

The main technical areas include: structural materials, coatings, primary components integrity/performance, handling systems, ISI&R and integral testing in large-scale facilities. Specific R&D needs are addressed through the refurbishment of existing ENEA infrastructure (e.g. NACIE loop for studies on heat transfer, CIRCE pool for components and SG tube rupture tests), and several new test facilities:

- Corrosion Capsules (CAPSULE) in stagnant lead
- Lead loop for corrosion and erosion tests (CORE) in flowing lead
- Lead loop for thermal-hydraulic investigations and component testing (OTHELLO)
- Dip-cooler instability (DCI) facility for thermal-hydraulics studies on bayonet-tube DHR
- MANUT infrastructure for handling equipment testing/qualification
- Pool-type large-scale integral test facility (Precursor,~10MW)

Country OR International Organization

International organisation

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Confirm that the work is original and has not been published anywhere else

YES

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