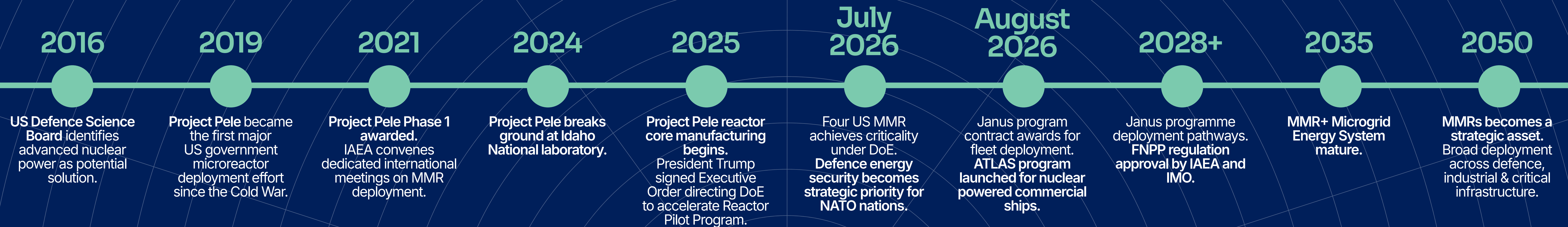


Energy Security = National Security

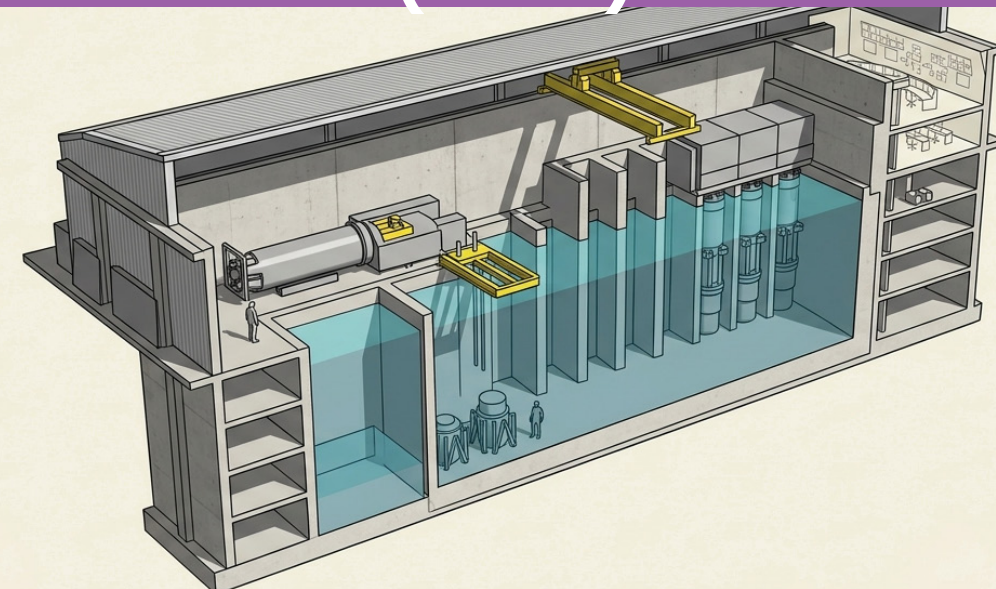
Micro Modular Reactors for Defence, Resilience and Security

More deployable than conventional SMRs and more resilient than diesel generators in contested environments.



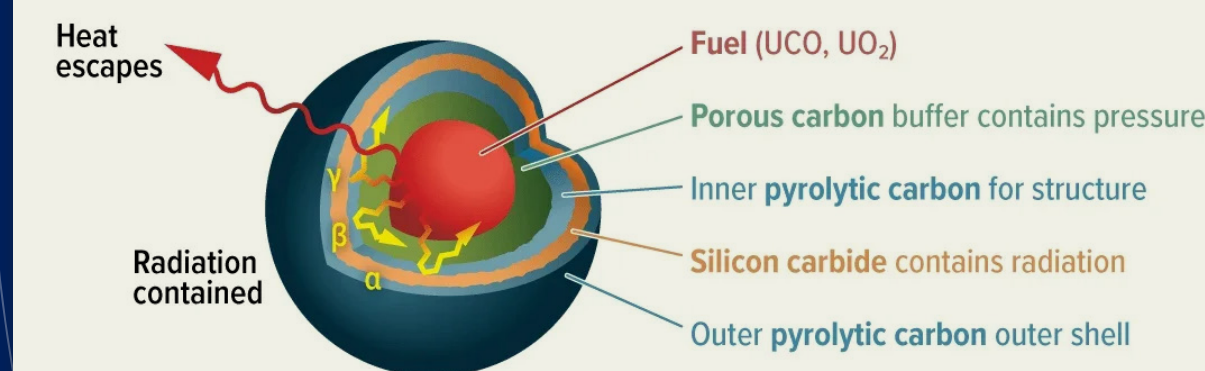
Technology Options for Defence Deployment

Pressurised Water Reactor (PWR)



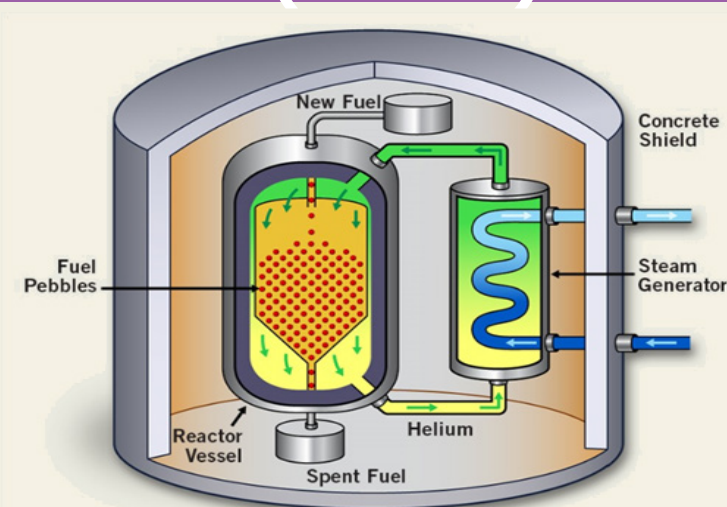
Most mature & lowest development risk

TRISO Fuel



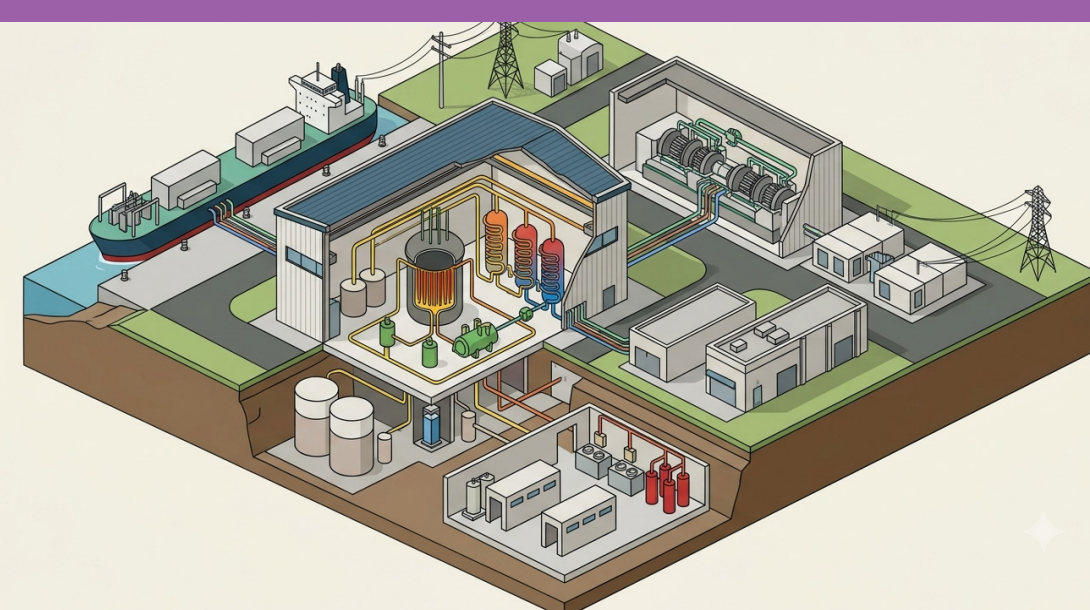
Improved fuel robustness and passive safety characteristics.

High Temperature Gas Reactor (HTGR)



High temperature for heat, hydrogen and industrial applications

Molten Salt Reactors (MSR)



Potential for enhanced efficiency & simplified deployment.

Strategic Applications

Defence Base Of The Future



An illustration of MMR integrated with microgrid into site infrastructure to power communication facilities, radar systems & energy storage.

Floating Nuclear Power Plant (FNPP)



FNPP like Akademik Lomonosov can be used to power ports, coastal city and industrial facility.

Naval Nuclear Propulsion



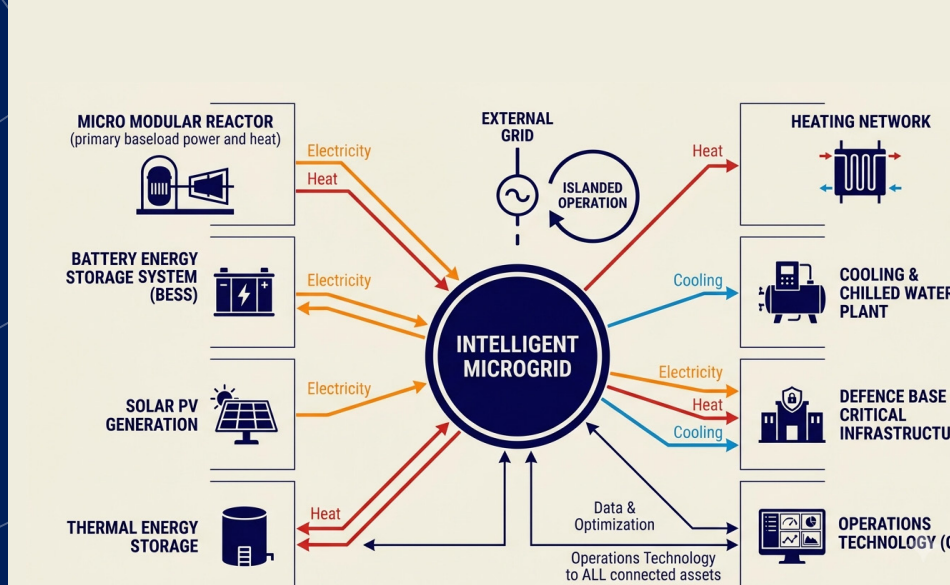
MMR can be used for powering naval vessels like the USS Gerald R Ford carrier.

Enablers, Intelligence & Challenges

Deployment Enablers

- » Defence demand for resilient energy.
- » Government policy & nuclear roadmap.
- » Regulatory innovation & licensing reform.
- » HALEU fuel & supply chain development.
- » Factory manufacturing & modular construction.
- » Integrate with microgrids, storage & renewables.

Intelligent Microgrid + MMR



Deployment Challenges

- » Public acceptance & stakeholder confidence.
- » Regulatory approval timelines.
- » First of a kind project cost.
- » Fuel availability & enrichment capacity.
- » Waste management & decommissioning.
- » Skilled workforce & industrial capability.

Energy is increasingly a strategic capability. As defence system become more electrified & energy intensive, secure & sovereign power becomes essential to operational effectiveness. MMRs integrated with intelligent microgrids offer a pathway towards resilient, distributed & deployable energy systems for defence, critical infrastructure & future industries.

Presented by Kevin Vincent, Senior EC&I Engineer

All information presented is publicly available. The views expressed are solely those of the author and do not necessarily represent the views of Cavendish Nuclear & Babcock International.

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