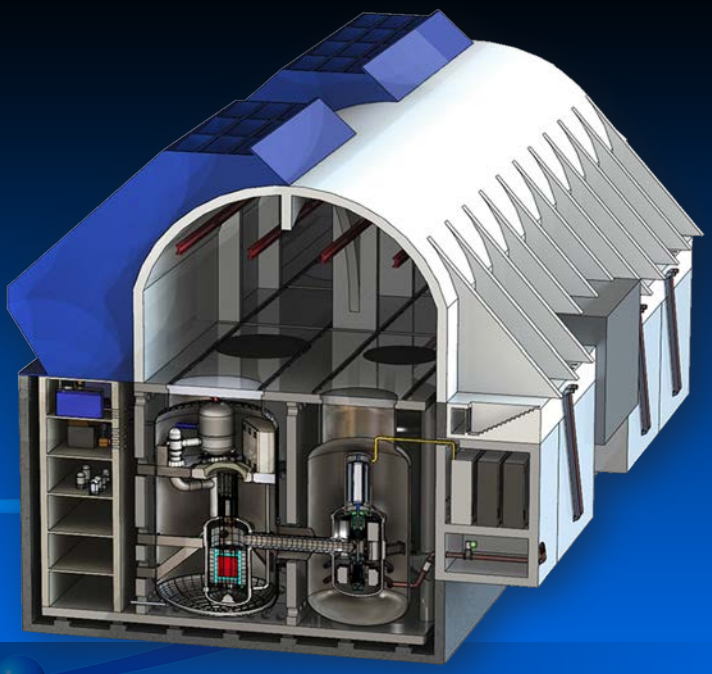
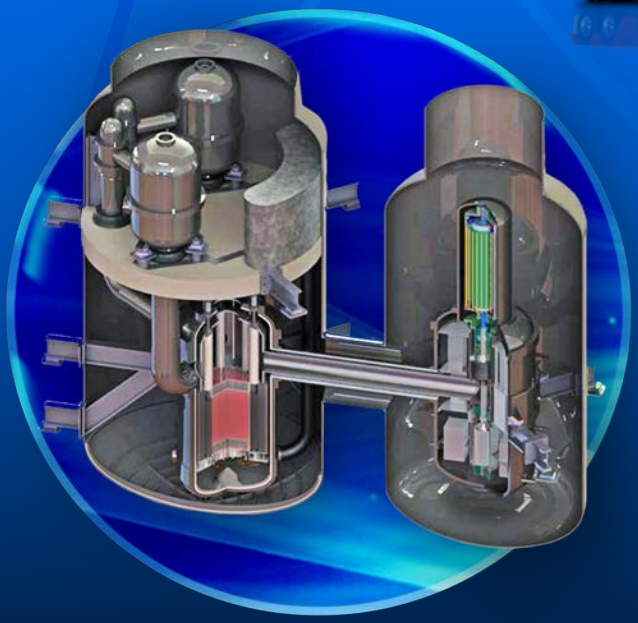
EM²™



ENERGY MULTIPLIER MODULE

POWERING INNOVATION



The Energy Multiplier Module, EM², is a next-generation, gas-cooled nuclear reactor concept designed by General Atomics.

Over 60 years of research and development experience designing safe reactors led to the incorporation of technology and engineering innovations focused on delivering solutions that meet the 4-core objectives required of advance reactors: significantly enhanced safety, reduced waste, strong proliferation resistance and production of low-cost, clean electricity.

EM² is an unprecedented waste-to-energy solution for the 21st Century's global energy demands

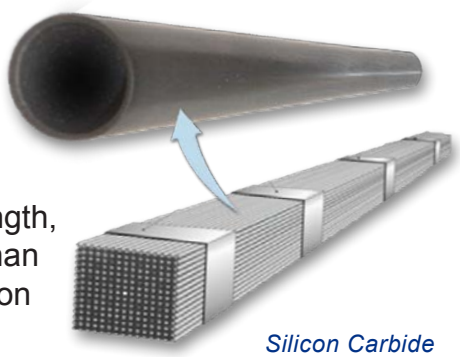
GENERAL ATOMICS

4-CORE OBJECTIVES OF ADVANCED REACTORS

EM² INNOVATIVE TECHNOLOGIES AND MATERIALS

Key technological advances in EM² are enabled through the use of innovative new reactor materials and power generation technologies.

The reactor incorporates silicon carbide composite material (ceramic) that withstands high irradiation and enables reactor operation at higher temperatures for greater efficiency. The material is engineered for strength, designed for long life, and will withstand accident temperatures more than twice those withstood by current reactor materials. The power conversion unit incorporates a Brayton cycle with an asynchronous high-speed generator coupled directly to the helium turbine to maximize efficiency.



Silicon Carbide composite (SiC) fuel rods

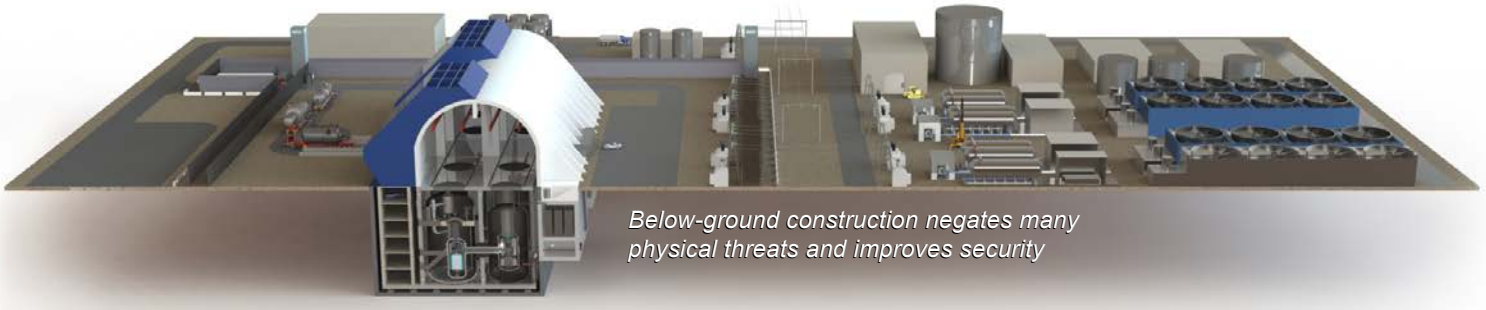
These key innovations allow EM² to address the following **4-core objectives.**

SAFETY

- **Does not require a source of electricity to maintain passive safety**
- **Uses inert gas (helium) instead of water to eliminate Fukushima-like explosions**
- **Allows flexible siting far away from population centers in underground containment**

WASTE

- **Produces one fifth the waste of current light water reactors for the same amount of electricity**
- **Uses existing nuclear reactor waste as fuel, converting today's storage challenges into tomorrow's useful energy**



Below-ground construction negates many physical threats and improves security

COST

- **Produces 60% more electricity from the same amount of heat as current reactors**
- **Uses factory-made assemblies that can be transported by truck**
- **Requires half the construction time of current reactors (42 months)**

NON-PROLIFERATION

- **Features a 30-year fuel cycle without the need to refuel or reposition fuel rods, much longer than the typical 1.5-year cycle currently used to refuel light water reactors**
- **Converts fertile to fissile fuel and burns it in place**

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