framatome

VERA-1000 FUEL ASSEMBLY

Innovative 100% European own-design development

Framatome's VERA-1000 Fuel Assembly is a fully European sovereign solution for VVER operators, combining strict compliance with advanced technology. Designed for safety, reliability, and performance, it ensures secure fuel supply and long-term operability.

Challenge

VVER-1000 operators face growing pressure to secure fuel supply, comply with stricter European safety standards, and maintain long-term operability amid geopolitical and sustainability constraints—without adding technical risk. This calls for fuel solutions that are European-designed, sovereign, and optimized for safety, reliability, and lifecycle performance, ensuring operational continuity and independence from external uncertainties.

Solution

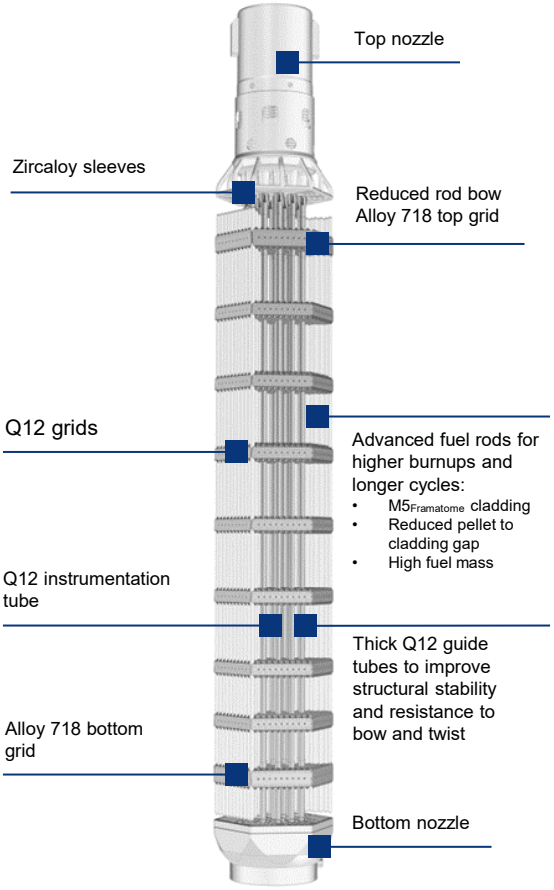
To meet the needs of European VVER operators, Framatome has developed its own-design fuel assembly for VVER-1000 reactors. The detailed design phase has been completed, and full-scale testing is now being prepared. The fuel assembly design complies with strict standards and incorporates cutting-edge technologies.

Customer benefits

Our 100% European sovereign solution provides customers with a diversified fuel supply, including reliable shipment services. We offer advanced debris filtering with superior efficiency to ensure optimal performance. Our PROtect Enhanced Accident Tolerant Fuel (E-ATF) technology increases safety margins in accident scenarios and ensures compliance with European Taxonomy requirements. PROtect E-ATF features an advanced and mature cladding solution consisting of a dense chromium layer on the surface of the cladding tube.

With enhanced reliability and robustness, our superior rod support protects against grid-to-rod fretting and ensures increased margins for rod insertion and fuel assembly integrity. Additionally, the well-balanced fuel assembly stiffness delivers excellent bow performance.

Your performance
is **our** everyday **commitment**



Technical Information

Advanced Fuel Assembly components
- Q12 spacer and mixing grids and Alloy 718 end grids
- Proven top nozzle
- Top & bottom nozzles with demountable connections
- Enhanced anti-debris filter

Fuel rod innovations
- M5Framatome cladding with optional Cr-doped pellets / PROtect E-ATF technology for Taxonomy compliance

Unique spacer grid design
- Individual hexagonal cells with 6-line contact rod support (spring)
- Ensures performance in grid-to-rod fretting scenarios

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