

Taking advantage of proven enhanced fuel technologies for your SMR project

Challenge

One of the challenges facing SMR projects is achieving economic performance without compromising safety. Design simplifications, reductions in capital and operational costs, minimization of licensing efforts and attainment of high performance are key factors in obtaining a positive short-term return on investment.

This challenge applies to the fuel as well as to the reactor and a key success factor to turn your concept into reality is a trusted supply chain partner who can deliver a proven, robust and flexible fuel supply chain.

SMR designers, as well as project developers and utilities, are looking for a reliable partner able to support their projects with economic and dependable fuel products to ensure successful reactor commissioning and continued safe and competitive operation.



Solution

With decades of experience in delivering fuel for various light-water reactor types and collecting invaluable fuel assembly irradiation data, Framatome is a uniquely qualified supplier able to provide the right fuel option for your particular SMR needs. SMR fuel design options can be selected among qualified and licensed fuel designs used for current nuclear power plants worldwide. Our highly skilled R&D and engineering teams can tailor the designs to specific requirements and ensure the appropriate regulatory support for qualification. Framatome's deep knowledge, extensive experience and proven technical-validation assets reduce your fuel supply uncertainties and costs. Supporting your SMR project with proven performance and safety is our commitment.

To ensure successful design and supply, SMR projects require comprehensive solutions that encompass the entire range of new-fuel needs including in-core component design, licensing assistance, vessel surveillance test specimens and neutron sources, fuel service equipment, and codes and methods for performing associated engineering services. Our customers can select appropriate options and customized solutions from Framatome's full range of capabilities, including best-in-class manufacturing, to achieve reactor start-up and operation.

Customer Benefits

- Shortened development time with the use of readily available Framatome technology
- Relying on skilled and agile engineering teams
- Optimized fuel-cycle cost through the use of off-the-shelf components
- Support for fuel licensing activities
- Reliability of a flexible worldwide supply chain
- Design and justification of Californium source rod procurement and supply
- Extensive experience with on-site field services, including equipment supply and service-campaign performance under international safety requirements
- Qualified codes and methods combined with a large validation database to efficiently manage recurring reload engineering work

**Your performance
is our everyday commitment**

Technical Information

- SMR fuel technology and comprehensive fuel solutions for LW SMR projects based on Framatome's extensive track record of fuel design for conventional PWRs and BWRs using UO₂ and/or MOX
- Global fuel design competencies and standard licensed fuel products, provide timely and economic solutions to SMR projects
- Reliable options for securing fuel reloads, component supply and fuel-related services for SMR project deployment and long-term operation

Key Figures

- **> 60 years of** experience in the supply of PWR and BWR fuel
- **> 230,000** fuel assemblies delivered worldwide
- **12** fuel sites in an integrated worldwide supply chain, from zirconium to fuel assemblies
- **125** of the 293 light-water reactors in operation worldwide use Framatome fuel technology



Components' features of GAIA fuel assembly for customized design of LW SMR fuel option

References

Our LW SMRs project customers : NUWARD™ - NuScale™ - HOLTEC INTERNATIONAL

Our customers have selected Framatome for defining fuel design options for their project as well as for providing engineering support, ensuring appropriate regulatory support for qualification. SMR fuel design options have been selected among Framatome qualified and licensed fuel designs such as HTP-and/or GAIA allowing the use of Framatome's own worldwide robust supply chain for the deployment phase.

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