

Technical Meeting on Advanced Technology Fuels: Progress on their Design, Manufacturing, Experimentation, Irradiation, and Case Studies for their Industrialization, Safety Evaluation, and Future Prospects

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ROLE OF ATF IN ENHANCING SMR PERFORMANCE

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This paper overviews the impact of introducing Advanced Technology Fuels (ATFs) to SMRs (mainly water-cooled), in order to improve their performance while meeting their promised safety goals. Specifically, the application of coated zircaloy cladding, SiC cladding, helical-cruciform fuel, internally and externally cooled annular fuel, Thorium fuels, increasing the BWR and PWR lattice size will be discussed. Almost in all cases, the application of ATFs and/or increase in power density will require fuel enrichment of greater than 5%. Therefore, application of LEU+ and HALEU for SMRs will also be covered.

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