The Lead-Cooled Fast Reactor (LFR) system features a fast-spectrum lead or lead/bismuth eutectic liquid metal-cooled reactor and a closed fuel cycle for efficient conversion of fertile uranium and management of actinides. The LFR is a small factory-built turnkey plant operating on a closed fuel cycle with a very long refueling interval (15 to 20 years) cassette core or replaceable reactor module. Its features are designed to meet market opportunities for electricity production on small grids, and for developing countries that may not wish to deploy indigenous fuel cycle infrastructure to support their nuclear energy systems. The LFR system is designed for distributed generation of electricity and other energy products, including hydrogen and potable water. The fuel is metal or nitride-based, containing fertile uranium and transuranics.

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