

## Emerging and Innovative Concepts for Reactors

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General aspects of emerging and innovative concepts for reactors and other transmutation systems are discussed in the context of the relationship between reactors and proliferation risk. The sources of proliferation risk and the potential effects of alternate approaches for fuel handling, fuel type, and material attractiveness are reviewed. The current study in the Advanced Fuel Cycle Initiative is used to provide a framework for characterizing the various possible options and the impact on proliferation risk. The importance of considering all aspects of the nuclear fuel cycle system as well as the pathways for proliferation is discussed.

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