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Paper Critique

Plutonium Multirecycling in Standard PWRs Loaded with Evolutionary Fuels

The paper by Youinou and Vasile describes necessary steps required to make plutonium fuel available for Gen IV reactors. The authors describe that the fuel must be multirecycled in existing thermal reactors at high percentages of plutonium fuels. The modified MOX fuels use enriched U^{235} rather than tailing U^{235} to add to the fuel pellets. The amount of U^{235} changes with the amount of Pu used in the pellet as a function of self shielding. The cycling proposed uses a similar loading and unloading process as transmutation reactors. Multirecycling improves the stabilization of the Pu inventory for Gen IV reactors that monorecycling does not.

This paper does a very good analysis of many aspects with regards to how to best utilize existing nuclear technology to greatly improve the performance of future reactors. The authors take into account many aspects, such as different fuel types and different loading schemes as well as different cycles. The paper does not make opinionated claims and can back their conclusions up by the data provided in the bulk of the paper. Overall this is a very well written paper that is all content and no fluff.