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Plutonium Multirecycling in Standard PWRs Loaded with Evolutionary Fuels

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Outside of the United States, and particularly in France, used fuel reprocessing is commonplace. Considering this fact, this article attempts to evaluate a variety of different methods for recycling used nuclear fuel, specfically using multirecycling–a many-times through procedure. The methods for using the multirecycled fuel included mixed-oxide enriched uranium (MOX-UE) fuel assemblies, a *combustible recyclable a ilot* (CORAIL) assembly, and briefly an advanced plutonium assembly (APA). For the first two multirecycling assembly types, the article provided an in-depth discussion of the associated reactor physics, reactivities, power distributions, and effects of fuel-to-moderator ratio adjustments. These were not discussed for the APA due to the lack of interest in this technology at the CEA.

I think this paper's largest weakness would be it's introduction of it's methods. While they initially presented the study as a comparison of different mixings of U and Pu in a reactor assembly, I did not realize that they were comparing several different assemblies, one per section, until I was midway through reading the document. Simply stating this structure from the outset would have allowed a much clearer understanding of the main point of what the authors were trying to communicate in each section.