Computing and physical methods to calculate Pu

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Main limitations due to the enhancement of the plutonium content are related to the coolant void effect as the spectrum becomes faster ,the neutron flux in the thermal region tends towards zero and is concentrated in the region from 10 Ke to 1 MeV.
Thus ,all captures by Pu240 and Pu 242 in the thermal and epithermal resonance disappear and the Pu 240 and Pu 242 contributions to the viod effect became positive.
The higher the Pu content and the poorer the Pu quality ,the larger the void effect.
-The core control in nominal or transient conditions .
Pu enrichment leads to a decrease in (B eff.) ,the efficiency of soluble boron and control rods. Also ,the Doppler effect tends to decrease when Pu replaces U , so, that in case of transients the core could diverge again if the control is not effective enough.
-As for the voiding effect , the plutonium degradation and the Pu 240 and Pu 242 accumulation after multiple recycling lead to spectrum hardening and to a decrease in control.
-One solution would be to use enriched boron in soluble boron and shutdown rods.

-In this paper I discuss and show the advanced computing and physical methods to calculate Pu inside the nuclear reactors and glovebox and the different solutions to be used to overcome the difficulties that effect , on safety parameters and on reactor performance , and analysis the consequences of plutonium management on the whole fuel cycle like (Raw materials savings , fraction of nuclear electric power involved in the Pu management. All through two types of scenario ,one involving a low fraction of the nuclear park dedicated to plutonium management , the other involving a dilution of the plutonium in all the nuclear park.