

Region 1	0	95	0	0	5	0	0	100%
Region 2 (Fuel core)	11.5 8	40	21.12	0	0	27.3	60	100%
Region 3	0	95	0	5	1	0	0	100%

- Stainless steel with a density of 7.758 g/cm³ is composed of 67.84% Fe, 10.86% Ni, 19.22% Cr, 1.88% Mn, and 0.20% Si.
- Zircaloy with a density of 5.874 g/cm³ is composed of 99.69% Zr, 0.21% Fe, and 0.10% Cr.
- Region 3 does not include pressure vessel.

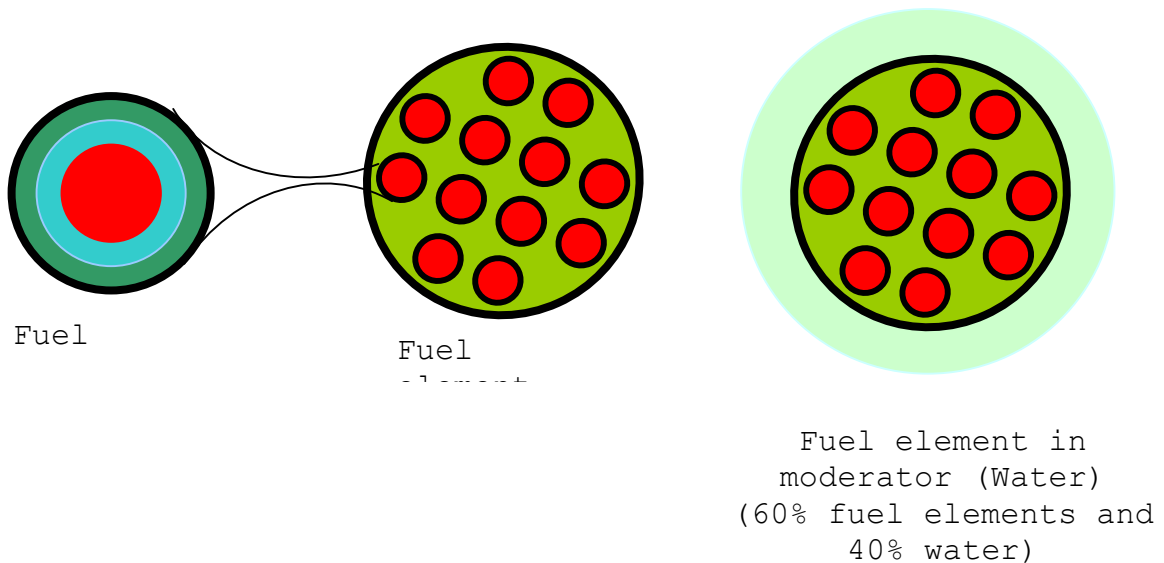


Figure1. Before

2. After homogenization

The cell is composed of the fuel element and water (60% fuel element & 30% water, water at 30°C temperature and 160 bar pressure). After homogenization, the cell composition includes UO₂, PYC, SiC, graphite, and water with the isotope concentrations as follows:

	Isotopes	Concentration, <i>nuclei/(b.cm)</i>
1	U ²³⁵	1.37204 10 ⁻⁴
2	U ²³⁸	2.57396 10 ⁻³
3	C ¹²	3.03116 10 ⁻²
4	Si ²⁸	1.29988 10 ⁻²
5	O ¹⁶	1.49250 10 ⁻²
6	H ¹	1.90057 10 ⁻²

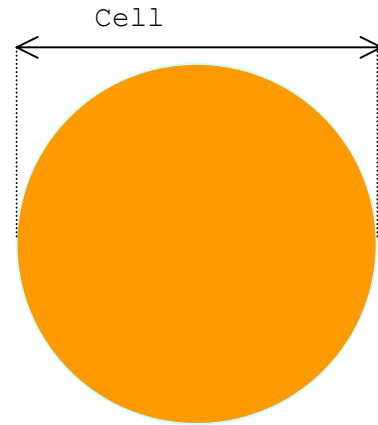


Figure 2. After

Remark: The isotope concentrations mentioned above are also ones for the fuel core.

III. results calculated with the HAMMER code.

Table 3. Kinf values calculated with the HAMMER code.

	Cell diameter, cm	Kinf
1	1.7787	1.332717
2	3.0	1.332716
3	4.0	1.332713
4	5.0	1.332711