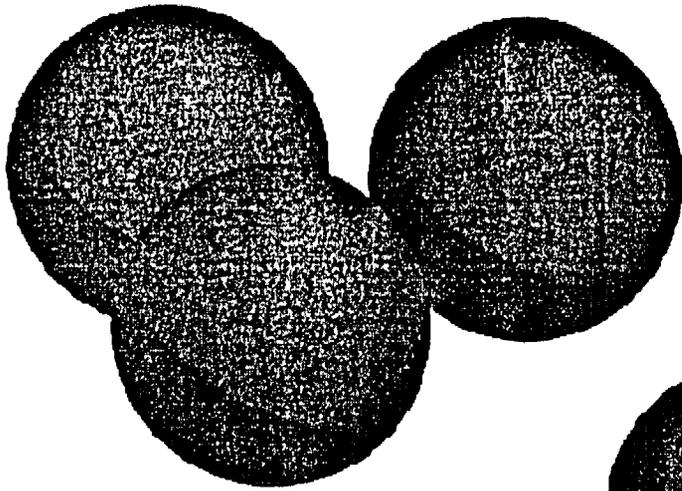


FUEL ELEMENT DESIGN FOR PBMR

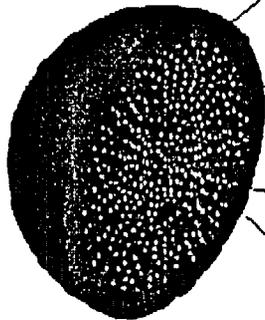


Dia. 60mm
Fuel Sphere

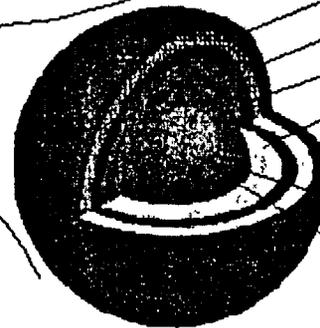
$\Delta T = 150^\circ F$
across fuel element

5mm Graphite layer

Coated particles imbedded
in Graphite Matrix

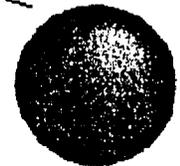


Half Section



- Pyrolytic Carbon 40/1000 mm
- Silicon Carbide Barrier Coating
- Inner Pyrolytic 35/1000 mm
- Carbon 40/1000 mm
- Porous Carbon Buffer 95/1000 mm

Dia. 0,92mm
Coated Particle



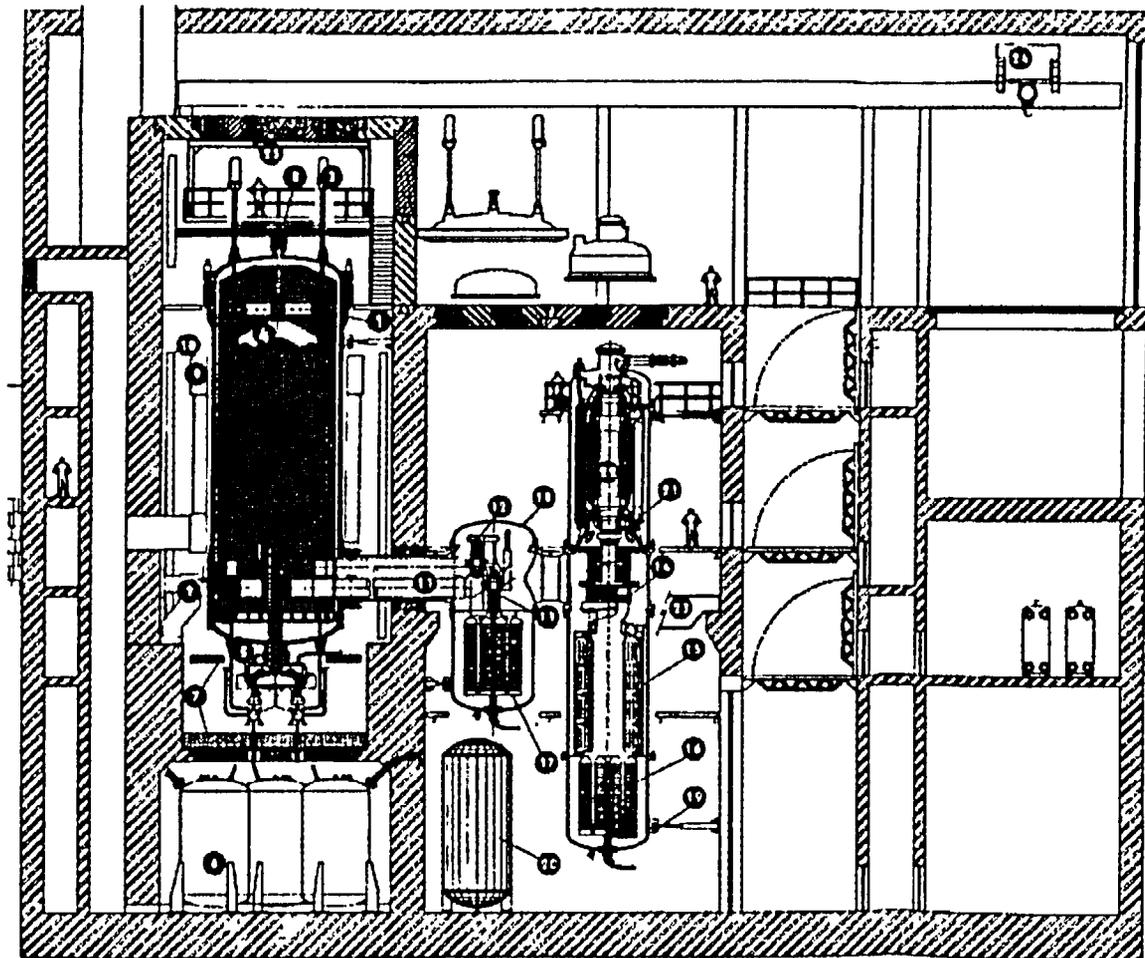
Dia. 0,5mm
Uranium Dioxide
Fuel

875 days in reactor
91/0

110,000 graphite particles
330,000 fuel spheres

8.1% enrichment

Pebble Bed Modular Reactor



- | | | |
|--------------------------|-------------------------------|---------------------------------------|
| 1 = reactor vessel | 2 = reactor vessel support | 3 = control rod drive mechanisms |
| 4 = fuel | 5 = defuelling device | 6 = spent fuel storage vessels(7) |
| 7 = radiation shield | 8 = seismic support | 9 = heat removal skirt |
| 10 = reactor pit cooling | 11 = main connection manifold | 12 = turbine comp. No 1 |
| 13 = turbo comp. no 2 | 14 = power turbine | 15 = recuperator |
| 16 = precooler | 17 = intercooler | 18 = power conversion unit enclosures |
| 19 = snubbers | 20 = helium storage tanks (9) | 21 = generator coupling |
| 22 = generator | 23 = main carrier beam | 24 = main overhead crane |

PBMR HELIUM FLOW PATH SCHEMATIC (BRAYTON CYCLE)

