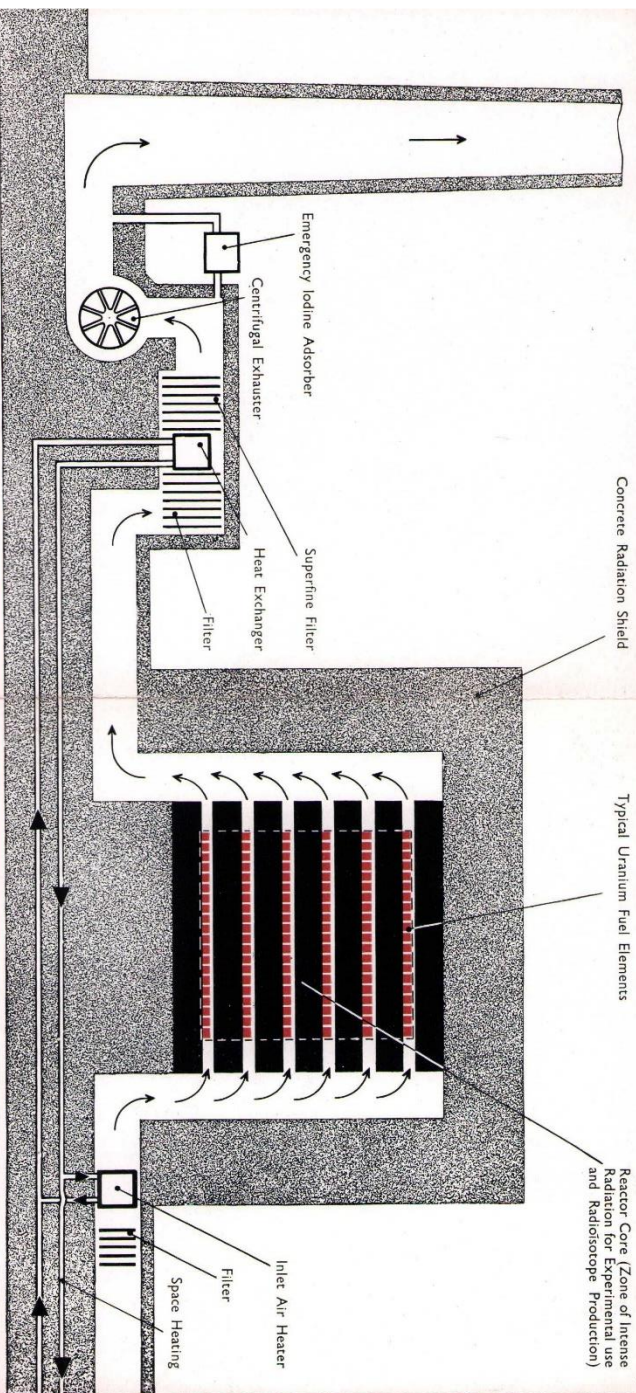




DATA

TYPE Thermal heterogeneous.

PURPOSE General research, engineering loop experiments, production of radioisotopes.

OPERATION Commenced operation July 5th, 1948

FUEL 20 elements in each of 880 channels, of natural or slightly enriched uranium clad in pure aluminium with helical longitudinal fins. Loading for critically 28 tons; for operation 40 tons. Reacting core 20 ft. dia. x 20 ft. long. Maximum fuel temperature 300°C, sheath temperature 250°C.

MODERATOR 26 ft. cube of pure graphite weighing 850 tons. Mean temperature 100°C. Reflector of graphite 3 ft. all round core.

LATTICE Regular square 7½ in. pitch.

COOLANT Air supplied at a flow of 5 tons/minute by three 1400 h.p. exhausters. Inlet air pre-heated to 45°C; outlet air temperature 115°C.

POWER Normal operating power 6.0 MW. heat. Recovery about 4 MW. heat via heat exchanger for space heating and inlet air heating.

FLUX Maximum thermal neutron flux about 1.5×10^{15} n/cm² sec.

REACTIVITY Excess reactivity : 1-4%.

CONTROL 12 shut off rods; 2 safety rods; 4 control rods.

SHIELDING 6 ins. thick cast iron thermal shield (600 tons) and 6 ft. 6 ins. thick bar/yes concrete biological shield (5000 tons).

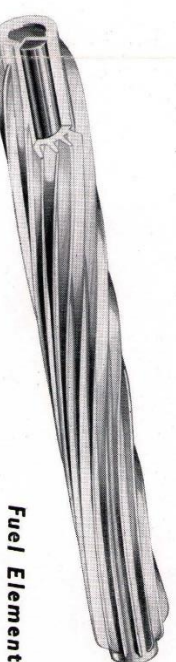
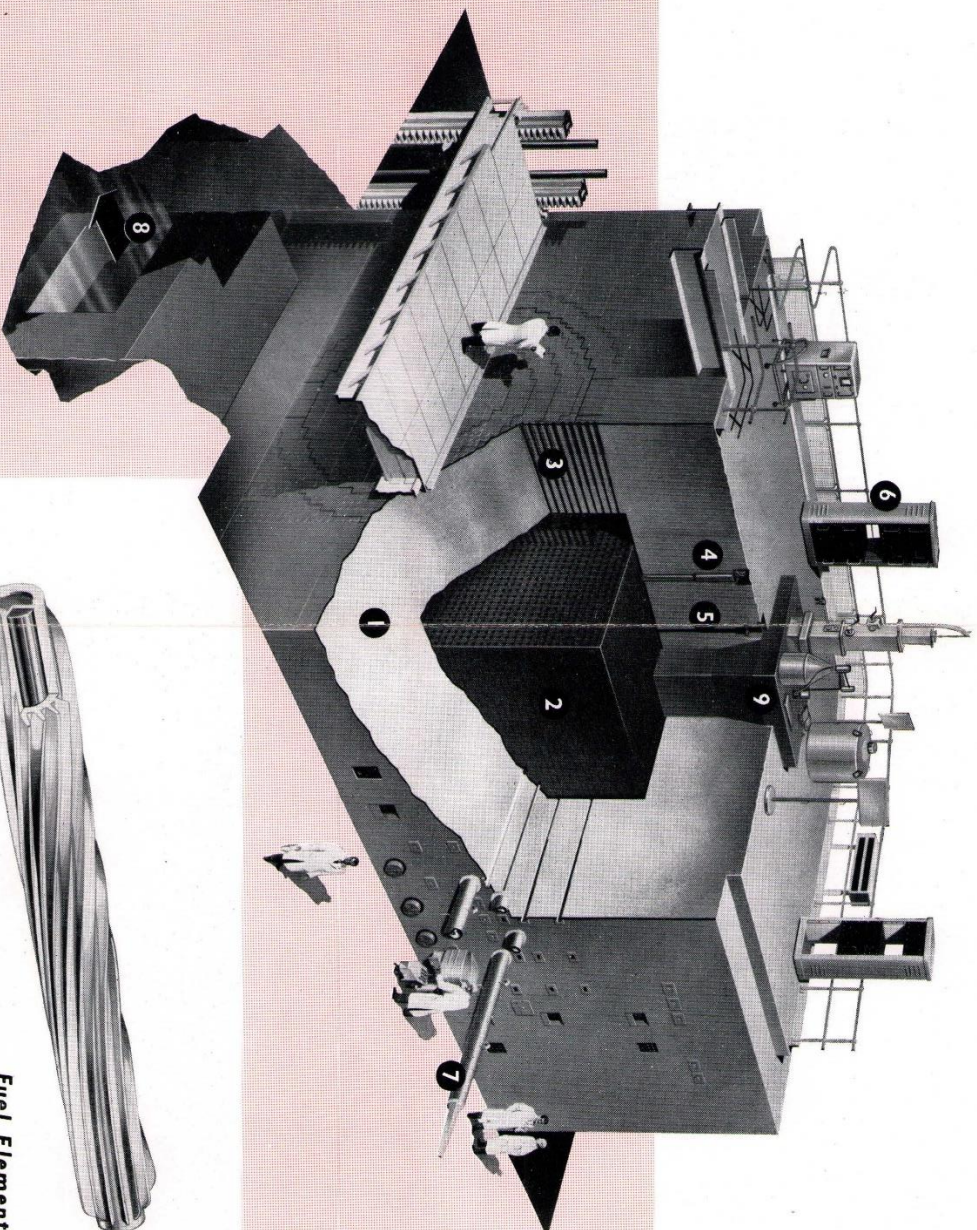
I.S. LEAFLET NO. 291380

BEPO

Air Cooled Graphite Moderated Reactor
ATOMIC ENERGY RESEARCH ESTABLISHMENT HARWELL

Key

- 1 CONCRETE RADIATION SHIELD
- 2 GRAPHITE MODERATOR
- 3 ACCESS TO FUEL CHANNELS
- 4 SAFETY RODS
- 5 TYPICAL EXPERIMENTAL FACILITY
- 6 EXPERIMENTAL EQUIPMENT
- 7 CONTROL RODS
- 8 HEAT REMOVED BY AIR COOLING
- 9 THERMAL COLUMN



Fuel Element