Purpose

LIDO was primarily designed for shielding studies, but it is now also used as a source reactor for neutron physics experiments. Materials can also be irradiated in the core in a similar manner to the materials testing reactors.

First critical September 1956

Data

TYPE
Swimming Pool.

POWER
Up to 100 kW.

FUEL
Enriched uranium aluminium alloy, aluminium clad.
Normal investment (28 fuel elements) 3·4 kg of U^{235}.

LATTICE
Regular square 3·025 inches.

REACTIVITY
At normal loading excess reactivity 0·6%.

FLUX
At 100 kW, thermal $1{\cdot}0 \times 10^{12}$ n/cm²-sec maximum.
At 100 kW fast $1{\cdot}5 \times 10^{12}$ n/cm²-sec maximum.

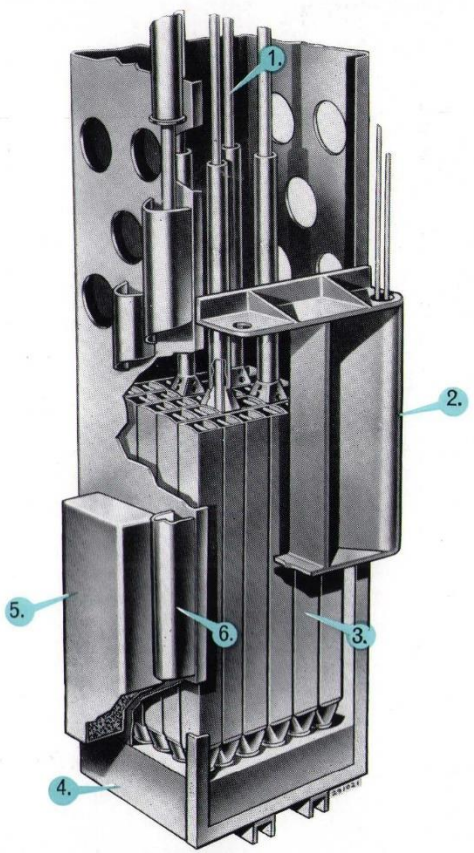
MODERATOR
Light water.

CONTROL
1 fine control rod, 1 coarse control rod and 2 safety rods.

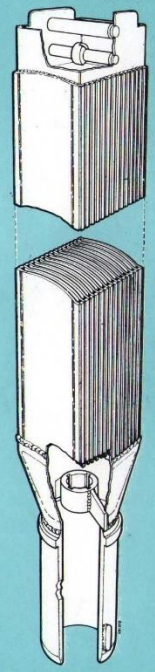
COOLANT
Light water. Natural convection through core; tank water cooled through air cooled heat exchanger.

MAIN TANK
Internal size 28 ft. × 8 ft. × 24 ft. deep. Material, concrete.

SHIELDING
Upwards, 17 ft. water; sides 7 ft. concrete.



Reactor Core

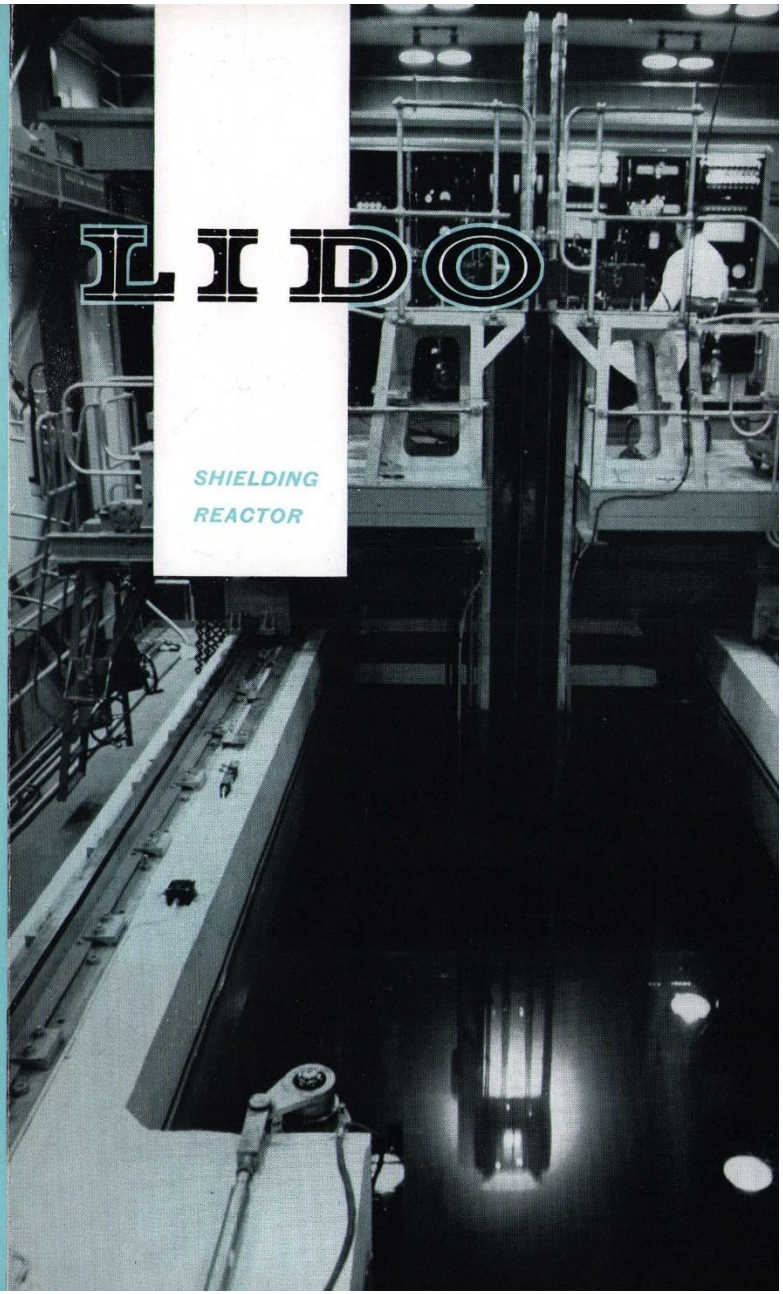


Fuel Element

1. Control Rods
2. Ionization Chamber
3. Fuel Elements
4. Lattice Plate
5. Graphite Block
6. Fission Chamber

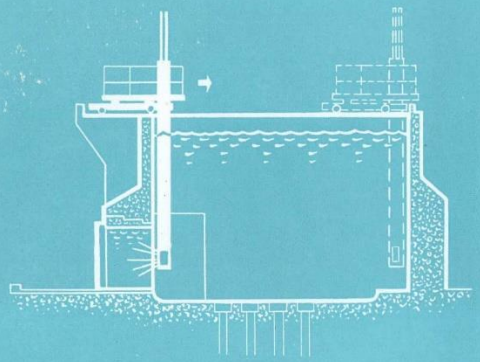
Atomic Energy Research Establishment Harwell

IS LEAFLET NO 291382



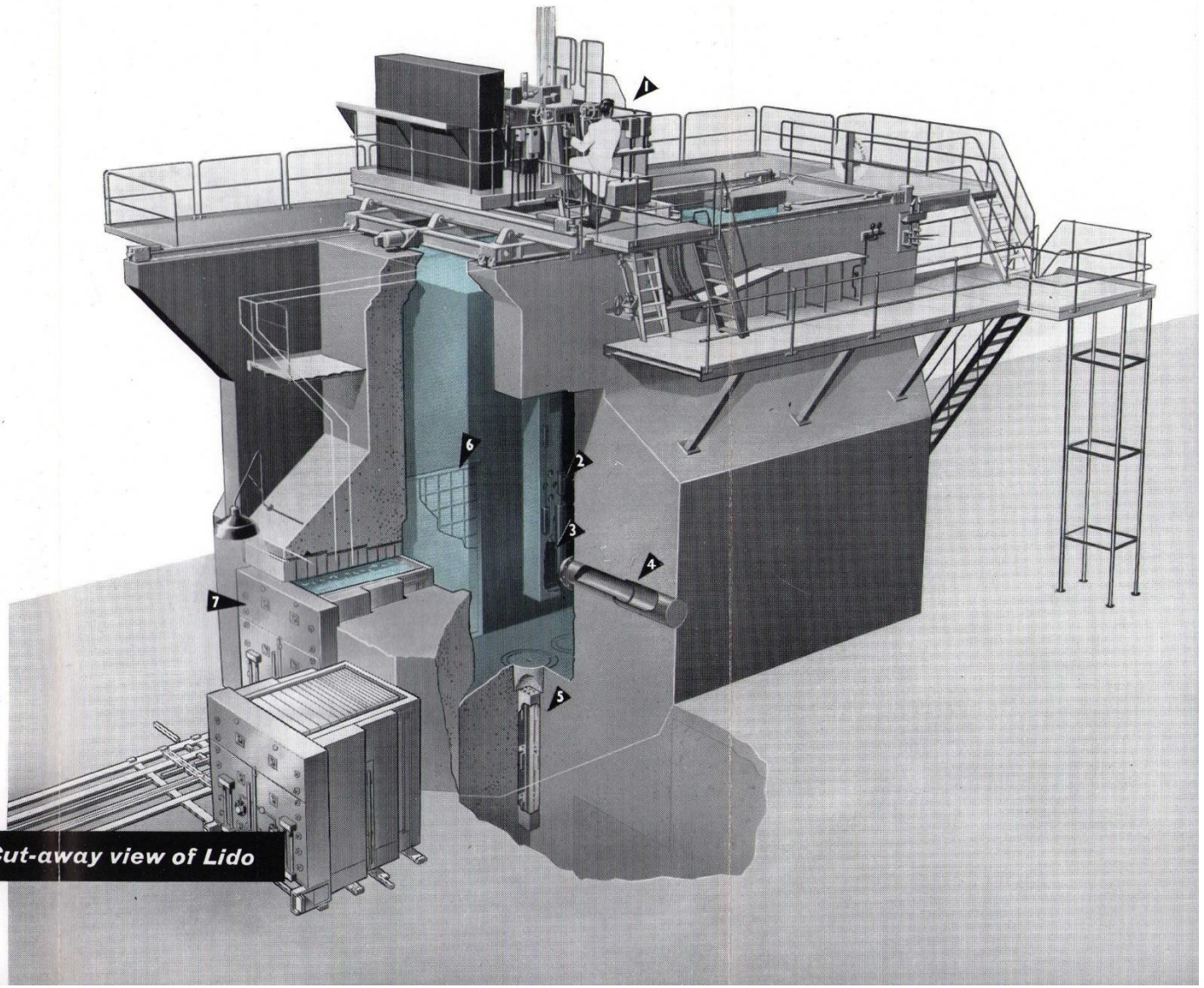
LIDO

SHIELDING REACTOR



Diagrammatic view

1. Trolley and control platform
2. Core support structure
3. Core
4. Beamhole
5. Fuel Element Storage Pit
6. Aluminium Experimental Panel 8′ sq.
7. Trolley with experimental shielding array



Cut-away view of Lido