necessary, therefore, to settle upon some mutually acceptable financial agreement for establishing and supporting the laboratory. Unesco, it was resolved at the time of the Fifth General Conference in Florence, will neither operate the proposed European nuclear physics laboratory nor contribute to the cost of its construction or maintenance. Unesco's role is simply to help activate and coordinate the efforts of the interested nations in getting the project under way.

NUCLEAR DATA

FOR LOW-POWER RESEARCH REACTORS

Late last year, the United States Atomic Energy Commission, together with the atomic authorities of Canada and the United Kingdom, agreed to the public release of certain information on low-power research reactors, including those nuclear properties of uranium of importance to the design and operation of such reactors. An initial listing of values was made public and plans were made for the supporting description of the experiments and calculations to be released in individual papers. Several of these have been submitted by the authors for publication in the *Physical Review*. The officially released data are listed below.

1. Thermal neutron cross sections for uranium:

The following are currently accepted values in barns for an approximately Maxwellian neutron spectrum with a most probable neutron velocity of 2200 meters/second:

Thermal neutron cross section for	U^{235}	U^{238}	Natural U
Fission	545	0	3.9
Capture	100	2.6	3.3
Scattering	8.2	8.2	8.2

2. Natural uranium fission cross section between 0.7 Mev and 5.0 Mev (see the accompanying figure).

3. Neutrons per thermal neutron fission:

$$\nu = 2.5 \pm 0.1 \text{ for } U^{235}$$

4. Prompt neutron energy spectrum:

The energy distribution of prompt neutrons resulting from the thermal neutron fission of U^{235} is given by the formula:

$$[\sinh \sqrt{2E}] \cdot \exp(-E)$$

where E is the neutron energy in Mev in the laboratory system. This distribution function represents experimental data up to neutron energies of 13 Mev with a maximum deviation of fifteen percent.

5. Fast fission effect:

The following are typical values of the fast fission contribution to the reactivity of research reactors: (a) 2.9 percent in a reactor of the "CP–2" or "GLEEP" type, i.e., low-power graphite-uranium reactors at the Argonne National Laboratory and Harwell, respectively. (b) 3.1 percent in a reactor of the "CP–3" or "ZEEP" type, i.e., low-power heavy water and uranium reactors at Argonne and Chalk River, respectively.

6. Resonance absorption integral

An approximate empirical formula for the effective value of the resonance absorption integral in natural uranium is

$$\int \sigma_e(E)(dE/E) = 9.25[1 + 2.67(S/M)]$$

where the value is in barns, the integral is over the range of neutron energy from fission energy to thermal energy, and where S is the uranium surface area in cm^2, and M is the uranium mass in grams.

In making the announcement, the AEC expressed the hope that during later declassification actions appropriate credit may be given to the large number of individuals in the United States, the United Kingdom, and Canada who have contributed to knowledge of the above nuclear data.