

Celebrating IEA-R1 First Criticality

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Early in 1956 USP and CNPq established a cooperation agreement and in the middle of the same year, the Atomic Energy Institute (IEA) was founded. Its primary task was to install the research nuclear reactor purchased from the American company Babcock & Wilcox in the context of the “Atoms for Peace” Program. Another major task was to train reactor operators and users of the new facility. The first start-up was in September 16, 1957, being the first criticality achieved in the Southern hemisphere. IEA-R1 is a pool type, light water cooled and moderated, graphite reflected research reactor. Although designed to operate continuously up to 5 MW, it operated at 2 MW power during 40 years and afterwards it has been operating at 5MW. IEA R1 has several uses, such as radioactive isotope production by neutron flux irradiation up to $10^{14}cm^{-2}s^{-1}$, for health and industry applications; research and development using radioactive samples and neutron beams (8 radial and 2 tangential beam ports). This year we celebrate the 60th anniversary of the first criticality of the IEA-R1 research reactor and due to a continuous modernization program, it is expected to operate for another long time period.