

**DEVELOPMENT OF REACTOR TECHNOLOGIES
FROM I TO IV GENERATION**

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The further development of nuclear energy is connected with the development of the following directions: improvement of the nuclear fuel cycle with the minimization of radioactive waste; economical use of uranium resources; reducing the risk of proliferation of nuclear materials; economic competitiveness with other energy sources; safety of operation of nuclear facilities; generation of promising nuclear energy technologies. Anticipating the large-scale development of nuclear energy and its implementation in various areas of energy production, it is necessary to work on nuclear reactors of a new generation that best meet these tasks. There is no doubt that for the next one and a half dozen years, the projects of the reactors under construction will make maximum use of technical solutions, types of equipment that have already been confirmed during operation, or are their improved continuation. In the 1950s and 1960s, a number of prototype and demonstration reactors were selected, built and put into operation from many proposed reactors, differing in a wide range of coolants, nuclear fuels and designs. They made up the first generation of reactors. In the early 1970s, the operation of commercial reactors began - reactors of the 2nd generation: pressurized water reactors (PWR, PWR), boiling water reactors (RBMK, BWR), heavy water reactors (CANDU), as well as gas-cooled reactors (AGR). Further development of some types of reactors made it possible to develop third-generation reactors in the 1980s: improved BWRs and PWRs. Generation III+ is the next phase in the development of nuclear power plants, which includes evolutionary conceptual designs of water-cooled light water reactors that provide increased cost-effectiveness. According to experts' forecasts, the construction and commissioning of new capacities by 2030 will take place at the expense of generation III+ systems.