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The Computer model for the economic assessment of NPP pilot demonstration energy complex with BREST-OD-300 reactor (REM Proryv Project)

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The computer model for the economic assessment of Proryv Project (REM) was developed as a result of work in the field of simulation of technical and economic indicators.

REM is designed for supporting managerial decision-making during analyze of building NPP with thermal and fast reactors.

The targets of REM are noted, functional opportunities and technical demands are demonstrated.

Object-oriented programming and modeling was implemented to construct economic and material balances. It allows assembling required power utility system from various functional modules («Energy unit» «Fabrication/refabrication module», «Reprocessing module», «Radioactive waste management module»), depending on the unit type and the nuclear fuel cycle (NFC) technology.

Individual technical and economic indicators are set for each object, project economic efficiency (commercial, fiscal, social) is determined at different price level (forecast, current, deflated).

Indicators are integrated at the upper level for total energy complex economic efficiency. The upper level integral indicator is Levelized cost of energy (LCOE). It determines the total project competitiveness.

The examples of calculations of technical and economic indicators are illustrated, simulation data and optimization of Proryv project are reported.

REM functions allow to improve the quality of economic evaluations, reduce time and labor input of calculations, simplify work with large number of variable factors, increase visibility of the calculations and results.

Country/Int. Organization

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