

A nuclear reactor fuel assembly with a cross section in the shape of a regular hexagon comprises a top nozzle and a bottom nozzle, guide channels, fuel rods arranged in the nodes of a triangular mesh, and a grid consisting of non-detachably interconnected cells in the form of a polygonal tube, the longitudinal axis of which coincides with the longitudinal axis of a fuel rod. Six nonadjacent sides of a cell are slanted as a result of a variation in the width of the side along the axis of the cell. Between the slanted sides are sides which are parallel to the axis of the fuel assembly and which connect the cells to one another. The cells are arranged in the grid in rows that are parallel to one of the main diagonals of a regular hexagon. One pair of opposite slanted sides has a smaller edge width at the top nozzle end than at the bottom nozzle end. The axis of symmetry of a cell, which intersects these sides, forms an angle of 30 degrees with the aforementioned diagonal. The remaining slanted sides have a greater edge width at the top nozzle end than at the bottom nozzle end. The cells of each row are oriented identically, and the axes of symmetry of the cells in adjacent rows form an angle of 60 degrees. The width of the slanted sides of the cells varies along the axis of a cell in such a way that the cross sectional area of the cell is constant along the axis. The invention allows a reactor facility to be used in an elevated operating mode within 107-110 % of nominal capacity, thus enabling safer use of nuclear fuel.