

The invention relates to nuclear power engineering, in particular to passive systems of safety of nuclear power plants with water-water power reactors. The invention provides reliable discharge of residual heat liberation at emergency repair aftercooling of reactor with open main junction under conditions of total durable de-energization and impossibility of connection of other external sources of electric power. Passive system includes loop with natural circulation of heat carrier of first circuit shutoff fittings and heat exchanger of emergency repair cooling, this provides heat liberation of worked out nuclear fuel to water of keeping pool. Heat exchanger is arranged on basis of assembly of heat pipes, this is intermediate closed contour of heat transfer between radioactive heat carrier of first contour and water of pool. Zone of heat supply to heat exchanger is placed at level between "hot" and "cold" branch pipes of reactor with provision of needed conditions for formation of natural circulation of heat carrier through cooling contour. Heat exchanger is placed in corner partition-off of pool in such way that condensation sections of heat tubes that have no outer case are washed with pool water.