

The invention relates to the field of atomic energy, and specifically to systems which provide for the safety of nuclear power plants, and may be used in the event of serious accidents leading to the destruction of reactor housing and of the hermetic containment structure of a nuclear power plant. A system for confining and cooling melt contains: a guide plate in the form of a funnel, installed under the bottom of a reactor housing; a cantilever truss, installed under the guide plate so that the plate rests on same; a melt catcher, installed under the cantilever truss and provided with a cooling casing in the form of a multi-layered vessel for protecting an outer heat-exchange wall against dynamic, thermal and chemical influences; and a filler for diluting the melt, located in said multi-layered vessel. Said multi-layered vessel contains a metal outer wall and a metal inner wall, and, positioned between same, filler made of a material which has low thermal conductivity relative to the materials of the walls. The thickness of the filler h_{3an} satisfies the condition of: $0.8h_{hap} < h_{3an} < 1.6h_{hap}$, where h_{hap} is the thickness of the outer wall of the vessel. The technical result consists in increasing the effectiveness of removing heat from a melt and in increasing design reliability.