

Hydraulic Studies on Core Components of PFBR

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Abstract : Detailed thermal hydraulic investigations are very essential for safe and reliable functioning of liquid metal cooled fast breeder reactors. These investigations are further more important for components with complex profile, since there is no direct correlation available in literature to evaluate the hydraulic characteristics of such components directly. In those cases available correlations for similar profile or geometries may lead to significant uncertainty in the outcome. Hence experimental approach can be adopted to evaluate these hydraulic characteristics more precisely for better prediction in reactor core components. Prototype Fast Breeder Reactor (PFBR), a sodium cooled pool type reactor is under advanced stage of construction at Kalpakkam, India. Several components of this reactor core require hydraulic investigation before its usage in the reactor. These hydraulic investigations on full scale models, carried out by experimental approaches using water as simulant fluid are discussed in the paper.

Keywords : fast breeder reactor, cavitation, pressure drop, reactor components

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