

PUMPS FOR USE IN SMALL BLOWDOWN EXPERIMENTS

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ABSTRACT

In order to conduct small-scale experiments which attempt to duplicate the hydraulic phenomena occurring during a loss-of-coolant accident in a pressurized water reactor (PWR) plant, certain scaling philosophies must be employed to design the small system appropriately. Scaling considerations must be applied to all components of the small system and specifically to the primary circulation pump. Operating characteristics of small centrifugal pumps are generally quite different from those of PWR type pumps and the scaling of the small pump may involve various compromises. This paper describes a method by which the design of a small pump is specified such that the operating characteristics of the pump are expected to approach those of a large pump within the operating zones of primary interest.

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