

# Studi eksperimental vertical two-phase closed thermosyphon sebagai pendingin pasif spent fuel storage pool di reaktor nuklir = Experimental study of vertical two phase closed thermosyphon as a passive cooling system in spent fuel storage pool nuclear reactor

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Abstrak

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Penelitian ini bertujuan untuk mencari karakteristik termal dari Vertical Two Phase Closed Thermosyphon (VTPCT) yang berfungsi sebagai pendingin pasif Spent Fuel Storage Pool di reaktor nuklir. Metode yang digunakan dalam penelitian ini ialah eksperimental. Eksperimen yang dilakukan berfokus pada pencarian nilai resistansi termal dan performa terbaik dari VTPCT dengan beberapa variasi parameter uji. Parameter yang divariasikan adalah tekanan inisiasi, laju aliran air pendingin, dan beban kalor. Hasil yang didapat menunjukkan bahwa tekanan inisiasi -740 mmHg dan laju aliran pendingin 4 liter/menit akan menghasilkan resistansi termal dan performa terbaik pada beban kalor maksimal.

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**ABSTRACT**

The objective of this research is to find the thermal characteristic of vertical two-phase closed thermosyphon as a passive cooling system in spent fuel storage pool nuclear reactor. The method that used in this research is experimental. The focus of the experiment is to investigate the influence of some parameters on VTPCT's performance and thermal resistance. Parameters are varied in initial pressure, coolant flow rate, and heat input. Based on the experiment result, we can conclude that the performance and thermal resistance of VTPCT will reach the best value when the initial pressure and the coolant flow rate are -740 mmH and 4 liters/minutes.