

Areerat Champanoi 2006: A Study of Heat Rejection for An Underground Power Generator Room. Master of Engineering (Safety Engineering), Major Field: Safety Engineering, Interdisciplinary Graduate Program. Thesis Advisor: Assistant Professor Prakob Surawattanawan, Ph.D. 119 pages.
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Cause of heat ventilation problems in underground room were wall opening size, ventilation fan performance, sand trap, sound attenuator, friction loss in duct, layout of heat rejection sources and pressure drop. The objective is to keep ambient air temperature around generators to conform technical specification and it shall not be increased static restriction more than 125 Pa that complied with NFPA 110. Solution was solved by using computational fluid dynamics program that has been observed heat accumulated area and problem of heat convection due to vertex flow. The improvements were performed by increased radiator fans, added roof ventilation fans, increased wall opening and outlet ducts size and cancelled sound attenuators at discharge flows.

Keyword: Heat ventilation, Pressure drop, Generator, Underground room, CFD

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