

Adulrat Ruangsri 2014: Research and Development of Nitrogen Power Source for Transformer Water Spray System. Master of Engineering (Safety Engineering), Major Field: Safety Engineering, Faculty of Engineering. Thesis Advisor: Associate Professor Prakob Surawattanawan, Ph.D. 147 pages.

The electrical transformer can be seriously damaged by fire because it contains oil within the transformer case to cool its electric coils. Water spray is one of effective ways for fire suppression in the transformer. One problem in the installation and utilization of the water spray system is the faults from air compressor which is the moving part component and required regularly maintenance. This research work aims to study how to apply the nitrogen power source in order to solve this problem. The design of water piping is performed by using the spray pattern and Hazen-Williams formula. The results of the design are minimum pressure requirement and water flow rate. Ideal gas law is applied to evaluate the minimum pressure obtained from the nitrogen power source and a number of nitrogen tank required.

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