

ABSTRAK

Arief Susanto, “**RANCANG BANGUN ALAT PENCAMPURAN DAN DISTRIBUSI RADIATOR COOLANT GENERATOR SET DI UNIT POWER STATION 3 BANDARA INTERNASIONAL SOEKARNO-HATTA**”. Tugas Akhir, Universitas Sangga Buana YPKP, 2024.

Power Station 3 adalah salah satu unit vital di Bandara Internasional Soekarno-Hatta yang bertugas untuk menyuplai catu daya listrik cadangan apabila PLN padam. Di unit *Power Station 3* sendiri terdapat 8 unit *genset* yang memiliki kapasitas masing – masing 3000 kVA. Salah satu bagian penting *genset* adalah radiator, yang berfungsi sebagai sistem pendinginan *genset*.

Radiator ini sudah memiliki saluran untuk pengisian air radiator, namun belum terdapat sistem distribusi serta untuk pencampuran radiator *coolant*. Sehingga menyulitkan teknisi pada saat pengisian maupun pengurusan radiator *coolant* tersebut. Oleh karena itu diperlukan sebuah alat distribusi serta pencampuran air dengan radiator *coolant genset*.

Dengan menggunakan metode yang dibuat oleh persatuan insinyur Jerman *VDI 2221 (Verein Deutscher Ingenieure)*, dimana metode ini lebih kearah pendekatan sistematis terhadap desain untuk sistem teknik dan produk teknik agar dapat menyelesaikan permasalahan serta mengoptimalkan penggunaan material dan teknologi. Sehingga penulis dapat membuat peralatan ini dengan spesifikasi yang sesuai dengan data – data yang terdapat di unit *Power Station 3* ini.

Penelitian dan perancangan alat pencampuran dan distribusi radiator *coolant* ini diharapkan bermanfaat bagi pengguna baik operator maupun teknisi dalam melakukan pengurusan serta pengisian ulang radiator *coolant genset* di unit *Power Station 3*.

Kata kunci : *Genset*, radiator, radiator *coolant*, pompa, tangki

ABSTRACT

Arief Susanto, "**DESIGN AND BUILDING OF RADIATOR COOLANT GENERATOR SET MIXING AND DISTRIBUTION EQUIPMENT AT POWER STATION 3 UNIT SOEKARNO-HATTA INTERNATIONAL AIRPORT**". Final Project, Sangga Buana University YPKP, 2024.

Power Station 3 is one of the vital units at Soekarno-Hatta International Airport which is tasked with supplying backup electrical power if PLN goes out. In the Power Station 3 unit itself there are 8 generator units with a capacity of 3000 kVA each. One of the important parts of a generator is the radiator, which functions as a generator cooling system.

This radiator already has channels for filling the radiator water, but there is no distribution system or for mixing the radiator coolant. This makes it difficult for technicians to fill and drain the radiator coolant. Therefore, an equipment for distributing and mixing of water with radiator coolant is needed.

Using a method created by the German engineer union VDI 2221 (Verein Deutscher Ingenieure), where this method is more about a systematic approach to design for engineering systems and engineering products in order to solve problems and optimize the use of materials and technology. So, the author can make this equipment with specifications that match the data contained in the Power Station 3 unit.

The research and design of this radiator coolant mixing and distribution equipments is expected to be useful for users, both operators and technicians, in draining and refilling generator coolant radiators in Power Station 3 unit.

Keywords: Generator, radiator, radiator coolant, pump, tank