

ABSTRAK

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PENERAPAN POLA PEMANASAN MOTOR 6 kV BERBASIS PERIODIC START
SELAMA RESERVE SHUTDOWN PLTU UP BUKIT ASAM

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Motor listrik 6 kV merupakan peralatan vital pada PLTU yang rentan mengalami penurunan kualitas isolasi selama kondisi *Reserve Shutdown (RSH)* akibat kelembaban dan kondensasi. Pemanasan konvensional dengan heater sering kurang efektif pada motor berkapasitas besar karena distribusi panas tidak merata dan membutuhkan energi tambahan. Penelitian ini merancang pola pemanasan alternatif berbasis *periodic starting*, yaitu menjalankan motor secara berkala untuk menghasilkan panas internal pada belitan, metode penelitian ini dilakukan pada dua kelompok motor: kelompok A dengan *periodic starting* setiap dua minggu selama 5–10 menit, dan kelompok B dibiarkan *idle* tanpa starting. Parameter yang diukur meliputi *Insulation Resistance (IR)*, *Polarization Index (PI)*, kelembaban relatif (RH), dan suhu. Data dianalisis dengan membandingkan tren perubahan nilai IR dan PI terhadap standar IEEE Std 43-2013, Penelitian ini diharapkan dapat menunjukkan bahwa *periodic starting* lebih efektif dalam menjaga nilai IR dan PI pada motor 6 kV selama periode shutdown dibandingkan metode konvensional, sehingga meningkatkan keandalan motor dan mendukung keandalan operasi PLTU.

Kata kunci: motor 6 kV, *reserve shutdown*, Tahanan Isolasi, *Periodic start*, keandalan

ABSTRACT

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Application of a 6 kV Motor Heating Pattern Based on Periodic Starting During Reserve Shutdown at PLTU UP Bukit Asam

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6 kV electric motor is a vital equipment in Steam Power Plan that is vulnerable to experiencing Decrease in insulation quality during Reserve Shutdown (RSH) conditions due to humidity And condensation. Conventional heating with heater is often less effective on motors Large capacity due to uneven heat distribution and requires energy Additional. This research designs an alternative heating pattern based on periodic starting, Which is to run the motor periodically to produce internal heat on the winding, This research method was carried out on two motor groups: group A with periodic Starting every two weeks for 5–10 minutes, and group B is left idle without Starting. The measured parameters include Insulation Resistance (IR), Polarization Index (PI), relative humidity (RH), and temperature. Data is analyzed by comparing trends Changes in IR and PI values to the IEEE Std 43-2013 standard, This research is expected Can show that periodic starting is more effective in maintaining IR and PI values On a 6 kV motor during the shutdown period compared to conventional methods, so that Increase the reliability of the motor and support the reliability of Steam Power Plan operation.

Keywords: 6 kV motor, reserve shutdown, Insulation Resistance, Periodic start, reliability