

ANALISA DIP TEGANGAN AKIBAT PENGABUTAN MOTOR BUCKET WHEEL  
EXCAVATOR PADA SISTEM DISTRIBUSI TEGANGAN MENENGAH ( Studi  
Kasus PT. BA TANJUNG ENIM SUMATERA SELATAN )

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## ABSTRAK

Didalam sistem ketenagalistrikan,terdapat gangguan-gangguan kualitas listrik antara lain berupa naik turunnya amplitudo tegangan sistem,besaran variasi tegangan ini di klasifikasikan menurut lama waktu berlangsungnya gangguan yaitu berupa *transient,short duration dan long duration*.yang termasuk klasifikasi *short duration voltage* antara lain:*Interruption,Sag/dip dan swell*.

Salah satu penyebab dip tegangan adalah pada saat pengasutan motor induksi berdaya besar,dimana motor pada akan menarik arus yang besar,hal ini menyebabkan penurunan harga tegangan sesaat pada jaringan distribusi sehingga akan dapat mengganggu kinerja peralatan-peralatan yang peka terhadap nilai tegangan.Penerapan *metode resistansi eksternal variabel (rotor resistor)* dimungkinkan dapat mengatasi problem tersebut.

Hasil simulasi pengasutan motor penggerak bucket wheel exavator dengan software *ETAP(electrical transyent anallsys program)* adalah besar Dip tegangan yang terjadi pada bus motor sebesar 1,264 kV atau 21,56 % pada durasi antara 1,02 s sampai 2,04 s ,dan arus yang ditarik motor adalah 268 ampere.

*Kata Kunci : Kualitas Listrik, Dip tegangan, Pengasutan motor, Etap, Excavator.*

**ANALYSIS OF DIP VOLTAGE CAUSED BY BUCKET WHEEL EXCAVATOR  
MOTOR STARTING IN THE MIDDLE OF DISTRIBUTION VOLTAGE SYSTEM.  
( CASE STUDIES OF PT. BA TANJUNG ENIM SOUTH SUMATERA )**

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**ABSTRACT**

In electrical power system, there are power quality disturbances, such as variable value of voltage amplitudo fluctuation. This variable value of voltages clasified by duration of disturbances like transient, short duration and long duration the cases that belong to short duration *clasification are interruption, sag/dip and swell.*

One of the causes voltage dip is when starting a big power of motor induction occurred, at the time the motor will draw high current, this case can cause decreasing of instantaneous voltage value on distribution wiring so it will intrude on the equipments performance that sensitive to the value of voltage. Application of *variable external resistance methode* ( resistor of rotor ) may be able to exceed that problem.

The simulation result of starting mechanic bucket wheel excavator motor with ETAP software( electrical transyent analisys program ) are the value of voltage dip that occurred on the motor bus is 1,264 kV or 21,56 % on duration between 1,02 s through 2,04 s and motor current drawn is 268 ampere, thus, the occurrence of duration voltage dip is according to the standards in analyzing.

**key words** : *Electricity quality, Voltage dip, motor starting, Etap, Excavator*