

Study of a Solar Photovoltaic Regulator for Cathodic Protection Systems

Fouzia BRIHMAT, M'hamed OUADAH, Saida Bouyegh

Abstract : Study of a Solar Photovoltaic Regulator for Cathodic Protection Systems Cathodic protection has divers known industrial applications in buried or submerged pipes protection. The surrounding environment and the economic aspects are two decisive parameters in the choice of the method of protection. When the environment conditions are well known and the method of protection properly mastered, the cathodic protection is generally cheap and efficient over a long period of time. The photovoltaic conversion represents a good issue to provide the needed autonomous energy for several applications. Since it has many applications, we are precisely interested in cathodic protection one. To well manage the use of the battery, according to the desired application, it's necessary to make an adequate choice of the type of the regulator of load. The prevention opposes to the corrosion of the metallic deep pipes. Thus, a variable exit regulation for cathodic protection is studied. The stabilization of the PV.G voltage guarantees a load of battery with fixed voltage. The charging current threshold takes into account two parameters; the permanent measurement of the PV.G current output and of the increase in its voltage.

Keywords : corrosion, buried pipelines, photovoltaic System, cathodic protection, regulation, buck-boost converter, impressed current.