

Reduction of Power Consumption for Cathodic Protection of Reinforced Concrete Pillars

Igor Colesnic, Vladimir Anisimov, Sveatoslav Postoronca, Victor Anisimov

Academy of Sciences of Moldova

Institute of Power Engineering

Chisinau, Republic of Moldova

berzan@ie.asm.md, egortel@rambler.ru, vladimiranisimov415@gmail.com, sveatoslavpostoronca@gmail.com

Abstract—For electrical protection of steel products against corrosion, two protection options are used, named respectively the polarity of the potential supplied to the item: cathodic and anodic. For cathodic protection, which is the most suitable for protecting the steel reinforcement against corrosion, an option is proposed by means of creation of galvanic cell between the armature and an additional electrode of a chemically more active metal. The peculiarity of the operation of the cathodic protection type is that the moisture as the cause of corrosion is at the same time the basis of the operation of the cell. Therefore, such protection works only when there are conditions for the creation of corrosion, and respectively to the amount of electricity in the case of this protection is consumed less than traditional cathodic protection with a continuous power supply from power network.

Keywords—power consumption; cathodic protection; reinforcement of concrete pillar.

REFERENCES

- [1] Косолапов И. И. Изготовление стоек железобетонных опор ВЛ электропередачи. Л., «ЭНЕРГОАТОМИЗДАТ», 1985, 136 с.
- [2] Флатов В. И., Шистик Л. Н. Опыт защиты от коррозии. Кишинев, «Картя Моловенияскэ», 1978, 135 с.
- [3] Емельянов Ю. В., Могорян Н. В. Защита от коррозии оборудования и сооружений. Кишинев, «Штиинца», 1981, 100 с.
- [4] Кравец Ж. Р., Кройтор Д. С. Устройство для демонстрации влияния поляризационного сопротивления на рассеивающую способность электролитов. Авт. свид. СССР № 1585822, опубл. 15.08.1990, Бюлл. Изобр. № 30.
- [5] Якименко Л. М., Модылевская И. Д., Ткачек З. А. Электролиз воды. М., «ХИМИЯ», 1970, 263 с.