



MODEL FOR CRITICALITY ASSESSMENT OF ENERGY INFRASTRUCTURE

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ABSTRACT

The protection of critical infrastructure has become the topical subject of the economy and national security in all countries. Critical infrastructure is defined by an asset, system, part thereof or technical networks. All sectors' activities are included in this network, such as energy supply, transport services, water supply, gas and oil supply, information and communication technology systems. That is considered an important for maintenance of physical integrity, energy security and economic welfare. It is not possible to achieve the acceptability level of political, energy sustainability or economic development if infrastructure network of the country are at risk or vulnerable. Although, one of the main issue of critical infrastructure assessment is there is no single measure unit that can accurately reflect "interdependency" among critical infrastructure sectors.

The criticality of infrastructure element is described by others system elements functionality level reduction when considered element is out of order.

Assessment of system ability to perform its functions is allowed by created model, when system element is out of order or energy supply is interrupted. This model is designed using Simulink® platform. Numerical simulation example is presented in this work.

Keywords: Critical infrastructure, energy sector, assessment methods, network system