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Simulated modelling for EPU, as a tool for assessing the actual vulnerability against cyber threats and for cost-effective cyber security planning

PAVEL V. LITVINOV
RTSoft
Russia
litvinov_pv@rtsoft.ru

The cyber security issue for EPU, due to objective reasons is becoming increasingly important. The processes of electric power generation, transmission and distribution today essentially depend on information systems, including data network. Increased vulnerability of of Smart-Grid, Smart-Metering, DER, Virtual power plants, Smart-house to cyber-attacks is compensated by the use of new technologies and means of protection. As in the historical process of "competition" between the armour and weapons will not be the winner. From a practical point of view, the planning of technical and organizational measures to ensure information security there is an optimization problem to minimize expenses while reducing the risks and preventing critical one.

The subject potential use of agent-based modeling of energy systems, in the context of cyber security, has long been discussed in the scientific community. This article reveals the current state of the problem, some approaches to the creation of information security metrics. The objective complexity of cost optimization tasks and prerequisites for the design of simulation models will be listed.