

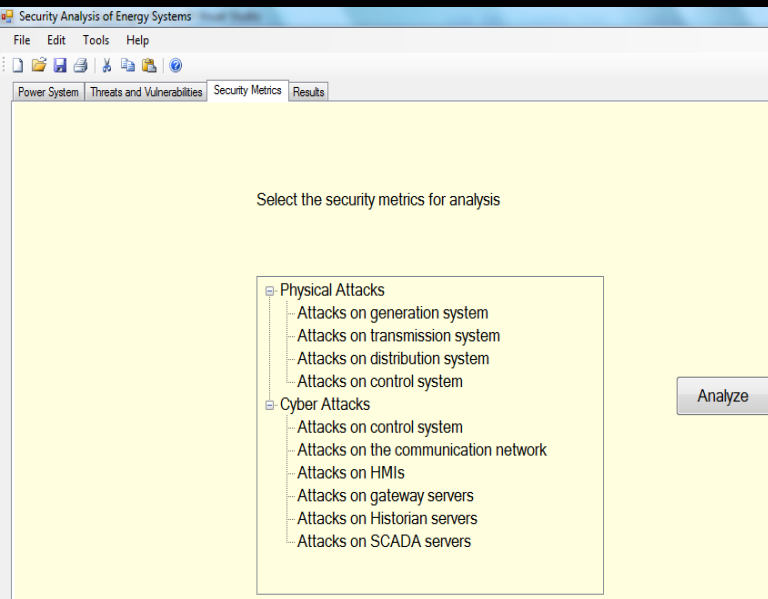
Secure Energy Systems – An Initial View

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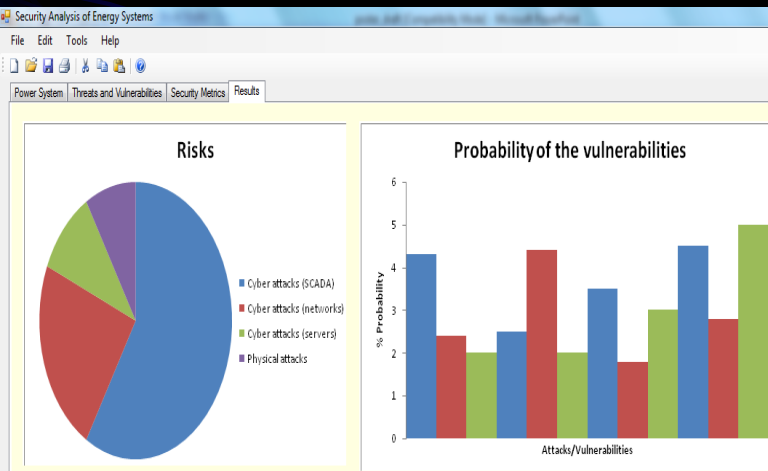
- Energy security – Issue of great interest to all
- About 5,400 power plants in the United States and hundreds of thousand miles of transmission lines in North America.
- Man-made or natural threats
- Electric energy system: generation, transmission, distribution, the load, and the control system.
- Transportation energy system: production, pipelines, distribution
- New risks from renewable energy sources such as solar, wind, biomass, etc.

Project Goal: Define the concept of secure energy systems and an initial architecture for analysis and design of secure energy systems

Secure energy system: Meets requirements on security metrics with a minimum specified probability in the face of specified threats



- The analysis of security of energy systems is done by considering the entire system i.e. generation, transmission, distribution and control system.



- A framework for the analysis is created and the modeling and design of the energy system is done using a graphical user interface.