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SCADA Systems Write Up

Systems that are crucial to a society's ability to function, both physically and virtually, are referred to as critical infrastructure systems. Transportation, electricity, water supply, healthcare, and communication systems are some of these systems. Despite the fact that these systems have typically been run in solitary settings, the growing tendency toward the integration of operational technology (OT) and information technology (IT) has rendered them more susceptible to cyber-attacks.

One of the primary vulnerabilities associated with critical infrastructure systems is their interconnectedness. A successful attack on one system can have a cascading effect on other systems, leading to a domino effect. For example, a cyber-attack on a power grid could lead to a blackout that disrupts communication systems, transportation systems, and even the healthcare system. In addition, these systems are often managed by aging legacy systems that have not been designed with modern security threats in mind, making them more susceptible to cyber-attacks.

Applications for supervisory control and data acquisition, or SCADA, are essential for reducing the hazards posed by critical infrastructure systems. Critical infrastructure systems are

monitored and controlled by SCADA systems, which also provide real-time data on the performance and status of these systems. Sensors, remote terminal units (RTUs), and a central control system are the typical three parts of them.

The capability of SCADA systems to identify anomalies in the behavior of crucial infrastructure systems is one of its important characteristics. These irregularities can be a sign of a cyberattack or another kind of security risk. For instance, a sudden increase in a nuclear power plant's temperature could be a sign of a malfunction or cyberattack. Such anomalies can be found by SCADA systems, which can then inform operators so they can take appropriate action before a more major incident happens.

Security measures like firewalls, intrusion detection systems, and access controls can also be implemented using SCADA systems. SCADA programs can aid in preventing unwanted access and cyber-attacks by limiting access to vital infrastructure systems and keeping an eye on activities on these systems.

In conclusion, critical infrastructure systems are vulnerable to a range of cyber threats, which can have severe consequences for society. SCADA applications play a crucial role in mitigating these risks by providing real-time monitoring and control of critical infrastructure systems, detecting anomalies in system behavior, and implementing security measures to prevent unauthorized access and cyber-attacks.

Works Cited

“SCADA Systems.” *SCADA Systems*, <http://www.scadasystems.net/>. Accessed 17 March 2023.