Safeguarding Critical infrastructure with SCADA Systems

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After reading this article I have learned that SCADA systems play a crucial role in monitoring, controlling, and securing critical infrastructure systems. This article provides an in depth exploration of SCADA systems, emphasizing their critical role in industrial control and monitoring across various sectors. I believe this is true as they ensure the efficient operation of critical infrastructure processes.

Understanding the SCADA Systems

Supervisory Control and Data Acquisition (SCADA) systems play an important role in today's world operations, this includes a wide range of sectors which consist of energy, water treatment, manufacturing, and transportation. A SCADA system is a combination of hardware and software that enables industrial process automation by capturing Operation Technology real time data (Wangsness, 2013, p.1). These systems serve as a centralized control and monitoring platform, overseeing infrastructure processes, and industrial production. By understanding the

components and functionality of SCADA Systems, stakeholders can appreciate their significance in making sure the efficient operation and security of critical infrastructure processes.

Vulnerabilities and Mitigating Risks

Critical infrastructure systems are very vulnerable to different threats due to their reliance on digital technologies, and critical importance to our society. Some vulnerabilities that are related with critical infrastructure systems include Cyber Attacks, Supply Chain Risks, and Insider threats. To be more specific this could include DDoS attacks, Malware, and ransomware for Cyber attacks. Insertion of malicious hardware or software during manufacturing could bring vulnerabilities into the system. Additionally, Malicious insider employees with access to sensitive systems can exploit their privileges to cause harm operations. SCADA applications also play a huge role in mitigating these risks and enhancing the security of these systems. Continuously monitoring these systems allows operations to detect and respond to anomalies or potential security incidents. Another way to mitigate these risks is by enforcing strict access control policies to prevent unauthorized individuals from accessing sensitive systems or data. By following and implementing these security measures, organizations can enhance the security of critical infrastructure systems against cyber threats.

Conclusion

In conclusion, the article provides a comprehensive overview of SCADA systems, their components, operations principles, and security considerations. It emphasizes the importance of these systems and how they maintain integrity and efficiency of critical infrastructure processes while overseeing efforts to better their security and resilience in the face of evolving threats.

References

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