

Research and Analysis.

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Author Note

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Abstract

The security our of power grid is one the most important topics for us to talk about. An attack on the power grid would not only cost millions of dollars in damages from lost food, medical supplies, and lives; it would also leave our nation completely defenseless to a broader attack on our infrastructure. That is why we need to protect our electric grid and other power production infrastructure by any means necessary. The same goes for liquid natural gas facilities as well.

Research and Analysis

Protecting the electric grid should be the top priority of everyone, not just the government. If a major attack happened to one grid it would have a catastrophic effect on the rest of the U.S.

The Grid

This topic could not have come at a better time. I live in Houston, Texas and we just had a major winter storm that massively effected our power grid, while that is not a cyber-attack; it did allow me to learn a lot more about our power grid system in the United States. We only have three separate grids in America: The Western Interconnect, The Eastern Interconnect, and The Texas Interconnect. This means if one complete grid is attacked it would have a catastrophic affect on the rest of the country.

If the complete Eastern Interconnect were to be breached and shutdown it would not just affect the people living in states covered by the Eastern Interconnect, it would affect the rest of the United States; except Texas most likely as Texas runs its own separate grid and is not tied into the Federal system. Once the Eastern Interconnect went down the system would try to balance itself by drawing power from the Western Interconnect which would completely tax that system and would cause a complete blackout in most of the country. Even if the Texas Interconnect were connected to the rest of the federal system it and the Western Interconnect would not be strong enough to provide power for all the United States.

The topic of attacks on power grids has been an important topic for years. Back in 2016 a group known as RedTeam Security was hired by a power company in the Midwest to try to hack into their power grid and gain full system access. Unfortunately, they were successful; had they been true black-hat hackers or hackers employed by a Nation State like Russia or China they

would have been able to completely shut down the power grid in the Midwest, or even use their access in that system to pivot to another section of the power grid thus shutting down an entire Interconnect. (Tech Insider, 2016) This breach is an example of how big of a lack in security there has been. This example was from 2016 three years before the article from The Hill or any president started taking action to protect our grid from a cyberattack. (Miller, 2019)

Personally, I feel that the federal government needs to do more to protect our grid, there should be more federal regulations in place when it comes to the level of security at power stations, power generation facilities, and substations. If the government treated the grid like a top-secret facility it would provide a higher level of security. For example, in the Tech Insider video the hackers were able to walk right into the substation without encountering a locked door or worrying about security camera once they got passed the perimeter.

Conclusion

I feel that we are at a good starting point when it comes security and our electric grid. There are still many holes in the system, and many examples of how to exploit the holes, movies like Live Free or Die Hard are a prime example. There should be armed guards posted at every Power Station and Substation; on top of that we should have a network of camera's placed at every major transmission line to protect every aspect of our power grid.

References

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