

Substation Security

As part of Dominion Virginia Power's overall strategy to improve its transmission system resiliency and security, the company is installing additional physical security measures at substations throughout Virginia.

PREVENTION

- Physical barriers
- Additional access control
- Equipment design, hardening

DETECTION & EVENT MITIGATION

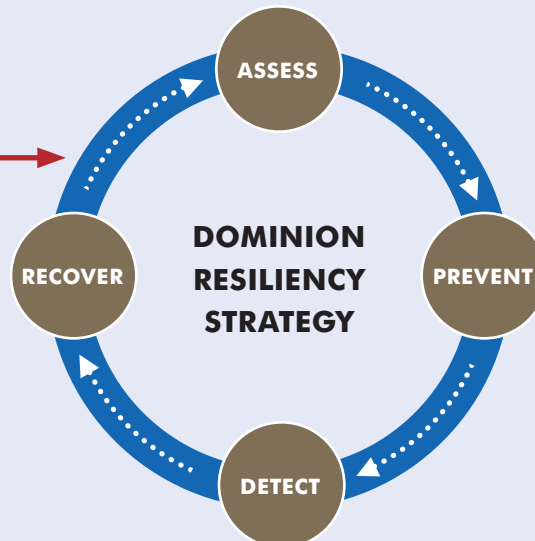
- IT and security initiatives
- Polymer bushing installation
- Electromagnetic Pulse (EMP) protection

RECOVERY

- Additional spare equipment
- Relocation of spare equipment to off-site storage areas

Adapting to Escalating Threats

- Cyber Attacks
- Physical Breaches
- Extreme Weather
- The Unknown



IMPORTANT FACILITIES — Substations are electrical facilities that transform high voltage power sent from generation stations to lower voltage power for local use. In light of new concerns, the Company performed a risk-assessment to identify key substations that pose the greatest risk to reliability. Our resiliency and security program prioritizes the most serious potential vulnerabilities in the transmission system.

NEED FOR NEW SECURITY MEASURES — As the region's largest electricity supplier, Dominion has proposed to spend up to \$500 million within the next five to seven years to harden its transmission substations and other critical infrastructure against armed assaults and natural disasters, and stockpile crucial equipment for major damage recovery.

BENEFITS — Dominion plans to build reinforced perimeter barriers around selected substations, designed to defeat attempts to cut through, climb over, or otherwise breach. Enhanced electronic security systems will not only protect against crime but will also control access and monitor facilities from remote locations. These and other enhanced security measures provide greater flexibility to grid operators to respond to any event — whether natural or man-made. Dominion's continued investment in mobile and spare equipment, including power transformers, helps ensure faster restoration should an interruption in service occur.

TIMELINE — Dominion's enhanced substation security efforts began in 2013. System hardening measures are currently underway and will continue over the next five to seven years in a systematic, prioritized approach.

New System Operations Center

As part of Dominion Virginia Power's overall strategy to improve its transmission system resiliency and security, the company is building a new System Operations Center (SOC)

PREVENTION

- Natural threats
- Man-made threats
- Facility design, hardening

DETECTION & EVENT MITIGATION

- Perimeter and systems monitoring
- Linear state estimator
- State-of-the-art visual displays

RECOVERY

- Full redundancy of all systems
- Remote full-scale backup operating center for extended period of operation



IMPORTANT FACILITY — The SOC is the brains of the system and performs real-time monitoring of the transmission grid to maintain reliability. Operators communicate with the regional transmission organization (PJM), Dominion's Regional Operations Centers, and other interconnected distribution and transmission companies.

NEED FOR NEW SOC — The company's current SOC facility was designed in the 1980s and is nearing the end of its technical life. The current center has size limitations impeding modernization and growth potential. Moreover, the aging systems require replacement to provide the capability to support rising industry and regulatory requirements.

BENEFITS — The design of the new center will incorporate state-of-the-art technologies for security as well as new systems for improved situational awareness and efficient work processes. A high degree of redundancy will be incorporated into the design of the facility to allow continuous operation following any severe events should they occur. The existing Innsbrook center will be converted into the backup and training SOC.

TIMELINE — Construction of the new center is expected to start in late summer 2014 after all necessary permits are received. Full commercial operation is expected by mid-2017.