ENERGY & COMMERCE
CHAIR RODGERS

MEMORANDUM June 14, 2023

TO: Members of the Subcommittee on Energy, Climate, and Grid Security

FROM: Committee Majority Staff

RE: Field Hearing entitled "Enhancing America's Grid Security and Resilience"

I. INTRODUCTION

On Friday, June 16, 2023, at 10:00 a.m. (ET) at 395 Magnolia Rd., Pinehurst, North Carolina, the Subcommittee on Energy, Climate, and Grid Security will hold a field hearing entitled "Enhancing America's Grid Security and Resilience." The hearing will examine physical and cybersecurity considerations for the electric grid, with focus on the attack on an electrical substation that occurred in Moore County, North Carolina on December 3, 2022.

II. WITNESSES

- **William Ray**, Director and Deputy Homeland Security Advisor, Division of Emergency Management, North Carolina Department of Public Safety;
- **Mark Aysta**, Managing Director, Enterprise Security, Duke Energy;
- **Tim Ponseti**, Vice President, Operations, SERC Reliability Corporation; and
- **Jordan Kern**, Assistant Professor, North Carolina State University, Department of Industrial and Systems Engineering.

III. BACKGROUND

A. Overview of the U.S. Electric Grid

In the United States, the electric grid consists of hundreds of thousands of high-voltage power lines and millions of miles of low-voltage power lines with distribution transformers that connect thousands of power plants to hundreds of millions of electricity customers across the country. The stability of the electric grid depends on continuous balancing of the supply and demand of electricity, which requires the coordination of many different organizations that operate different components of the electric grid.

The U.S. power system in the Lower 48 states is made up of three main interconnections, which operate largely independently from each other, with limited transfers of electricity between them. The Eastern Interconnection encompasses the area east of the Rocky Mountains, the Western Interconnection encompasses the area from the Rockies to the west, and the Electric Reliability Council of Texas (ERCOT) covers most of Texas.

The regional operation of the electric system is managed by entities called balancing authorities. There are 66 balancing authorities in the United States. A balancing authority ensures, in real time, that power system demand and supply are finely balanced. This balance is needed to maintain the safe and reliable operation of the power system. If demand and supply fall out of balance, local or even wide-area blackouts can result.

Balancing authorities maintain appropriate operating conditions for the electric system by ensuring that a sufficient supply of electricity is available to serve expected demand, which includes managing transfers of electricity with other balancing authorities. Balancing authorities are responsible for maintaining operating conditions under mandatory reliability standards issued by the North American Electric Reliability Corporation (NERC) and approved by the U.S. Federal Energy Regulatory Commission (FERC) and, in Canada, by Canadian regulators, some of which voluntarily adopt the NERC standards. These operators monitor the grid to identify potential problems before a situation becomes critical.

B. Federal Regulation of the Electric Grid

The Energy Policy Act of 2005 (P.L. 109-58) mandated the implementation of electric transmission reliability standards under new authority granted to the FERC, the independent federal regulator of the interstate electric transmission system. The commission subsequently designated NERC as the Electric Reliability Organization certified to establish and enforce reliability standards—including security standards—for the U.S. electric transmission grid, subject to commission review. In 2008, FERC's Order 706 approved NERC's initial security standards for critical electric infrastructure; however, these standards primarily addressed cybersecurity, not physical security. Congress enacted provisions in the FAST Act (P.L. 114-94) to protect or restore the reliability of critical electric infrastructure during a grid security emergency.

The FAST Act codifies the Department of Energy's (DOE's) role as the Energy Sector Specific Agency (SSA) for cybersecurity for the energy sector, and directs the Department to coordinate and collaborate with the U.S. Department of Homeland Security (DHS), other federal agencies and departments, and owners and operators of critical electric infrastructure to carry out its SSA duties. The Act also amends the Federal Power Act (FPA) to give the Secretary of Energy specific legislative authority to issue emergency orders to protect or restore the reliability of critical electric infrastructure or defense-related critical electric infrastructure during an emergency. The Act also directs the Secretary to develop and adopt procedures to enhance communication and coordination between the public and private sectors to improve emergency preparedness, response, and recovery. Of note, in a subsequent law, SSAs were renamed, Sector Risk Management Agencies.

C. Recent Grid Security Incidents

Physical and cybersecurity threats to the electric grid have increased in recent years. On February 6, 2023, the Department of Justice announced the arrest of two individuals for planning to attack five electric power transmission substations around Baltimore, MD. On December 25, 2022, four electric distribution substations in the Tacoma, WA, area were physically attacked, allegedly by two malicious individuals in a burglary scheme, causing millions of dollars in damage and cutting power to some 30,000 utility customers. Three weeks earlier, unknown perpetrators attacked two substations in Moore County, NC, causing an extended blackout for 45,000 area customers. The Baltimore, Tacoma, and Moore County incidents are the latest examples of physical threats against U.S. electric power infrastructure. A notable incident in Metcalf, CA, involving a rifle attack on a high-voltage electric power substation, as well as other security incidents, led to the passage of the FAST Act amendments to the FPA in 2015.

D. Moore County Substation Attack

On December 3, 2022, two electrical substations located in Moore County, North Carolina were attacked by unknown perpetrators. Damage from the attack left up to 45,000 residential and commercial customers without electrical power. According to local reports and statements from a press conference, gunshots were fired at the substations in Carthage, NC, at about 7:00 p.m., followed by a second attack a short time later in West End, NC, about 10 miles away.[1] Outages began in Moore County and spread to central and southern parts of the county as a result of serious damage to equipment located at the substations. Duke Energy announced that all substation equipment damaged from the attack was fully repaired or replaced on December 7, 2022, and power was gradually restored to all customers.[2]

IV. ISSUES

The following issues may be examined at the hearing:

- Physical and cybersecurity issues facing the electric sector;
- Power outage incident response and recovery; and,
- Emergency coordination among State and local governments and the electric industry

If you have any questions regarding this hearing, please contact Brandon Mooney or Mary Martin of the Committee staff at (202) 225-3641.

[1] See: https://www.fayobserver.com/story/news/crime/2022/12/04/moore-county-power-outage-investigated-as-vandalism/69699328007/

[2] See: https://www.fayobserver.com/story/news/2022/12/07/power-grid-attacks-nc-heres-the-latest-happening-in-moore-county/69708028007/