



# ***COMMONWEALTH of VIRGINIA***

## ***Department of Emergency Management***

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November 20, 2017

### **MEMORANDUM**

**TO:** The Honorable L. Scott Lingamfelter, Chair, House Militia, Police and Public Safety Committee  
The Honorable Frank M. Ruff, Jr., Chair, Senate Committee on General Laws and Technology

**VIA:** The Honorable Brian J. Moran, Secretary of Public Safety and Homeland Security

**FROM:** Jeffrey D. Stern, Ph.D.

**SUBJECT:** Virginia Department of Emergency Management 2017 Virginia Emergency Support Team Exercise Report

In accordance with § 44-146.17:2 of the *Code of Virginia*, I am pleased to submit the Virginia Department of Emergency Management 2017 Virginia Emergency Support Team Exercise Report on behalf of Governor McAuliffe. Please contact me if you have questions or need additional information concerning this report.

JDS/lbo

Enclosure

VIRGINIA DEPARTMENT OF EMERGENCY MANAGEMENT

# 2017 Virginia Emergency Support Team Exercise Report

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§ 44-146.17:2

November 2017

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2017 Virginia Emergency Support Team Exercise Report

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# Preface

An Act to amend the Code of Virginia by adding a section numbered 44-146.17:2, relating to the Emergency Services and Disaster Law; annual statewide drill was approved April 12, 2004 (Title 44 - Military and Emergency Laws). It reads as follows,

The Governor shall conduct an annual statewide drill on response to a large-scale disaster including, but not limited to, electrical power outages. Such drill shall include the participation of local governments, affected state agencies, public utilities, law-enforcement agencies, and other entities as determined by the Governor. The Governor shall submit a report to the General Assembly on the results of the drill by November 30 of each year. The report shall be delivered to the chairs of the House Committee on Militia, Police, and Public Safety and the Senate Committee on General Laws.

The annual Virginia Emergency Support Team Exercise (VESTEX) is intended to prepare the Commonwealth of Virginia for potential threats by measuring current capabilities, policies, and procedures against the requirement to properly mitigate, respond to, and recover from man-made and natural disasters impacting the Commonwealth. This report is a summary of the VESTEX Functional Exercise, conducted in May 2017, and provides information on how the exercise was designed and conducted, along with the outcomes of the exercise to include opportunities for improvement.

# Executive Summary

On Tuesday, May 2, 2017, the Virginia Department of Emergency Management (VDEM) conducted a seven-hour Virginia Emergency Support Team (VEST) functional exercise in conjunction with VDEM Regions 1, 2, 3 and 5, as well as 14 local jurisdictions. In addition to the VEST, most of the emergency support functions (ESFs) within the Virginia Emergency Operations Center (VEOC) participated in the exercise. The functional exercise was conducted at the VEOC, VDEM regional offices, and local county/city emergency operations centers (EOCs). The simulation cell was operated out of VDEM's Trade Court Facility.

The functional exercise began at 8:30 a.m. and concluded at 3:30 p.m. The purpose of the exercise was to demonstrate the ability of the Commonwealth of Virginia, FEMA Region III, partner states, and private sector utility stakeholders to work in a coordinated response to a protracted power outage and cascading effects impacting all of FEMA Region III in accordance with the Commonwealth of Virginia Emergency Operations Plan (COVEOP) and Section 44-146 17:2 of the Code of Virginia, Military and Emergency laws, Annual Statewide Drill.

This was a FEMA Region III-led, scenario-driven functional exercise involving local, regional, state, and federal agencies as well as public and private partners. The scenario required coordination between various jurisdictions to deliver required capabilities to affected communities in the aftermath of a prolonged power outage, as a result from an extensive cyber and physical attack to the power infrastructure within FEMA Region III. By design, exercise play began three days after the initial incident. During exercise play, the date of the initial cyber-attack on the energy infrastructure was Sunday, July 23, 2017. The scenario included a follow-on physical attack on individual substations the next day (Monday, July 24). Exercise play began on day three of the event (Tuesday, July 25).

During the functional exercise, a very robust simulation cell allowed the exercise players to demonstrate their ability to use emergency operations plans, policies and procedures to respond to and recover from the cascading emergency incidents precipitated by the prolonged and extensive power outage.

Approximately 200 participants registered for the exercise. The functional exercise participants included VEST staff, including representatives from most all ESFs; Region 1, 2, 3 and 5 multi-agency coordination centers (MACCs); the counties of Amelia, Goochland, Nottoway, Powhatan, Buckingham, Fluvanna, Halifax, Lancaster, and Middlesex; and the Cities of Colonial Heights, Richmond, Chesapeake and Norfolk. Dominion Power was also an active participant in the exercise.

The evaluated National Preparedness Goal (NPG) Response Mission Area Core Capabilities chosen by the Exercise Planning Team consisted of the following:

- Operational Coordination
- Planning
- Situational Assessment
- Public Information and Warning

# SECTION 1: TRAINING/EXERCISE OVERVIEW{ TC "SECTION 1: EXERCISE OVERVIEW" \F C \L "1" }

<b>Exercise Name</b>	Virginia Emergency Support Team Exercise (VESTEX) 2017
<b>Exercise Date</b>	Tuesday, May 2, 2017 8:30 a.m.- 3:30 p.m.
<b>Scope</b>	Examine the ability of federal, state, local, tribal, and territorial jurisdictions to respond to complex terrorist attacks with a focus on integrated response planning among law enforcement, medical services, emergency management, and other whole community stakeholders.
<b>Mission Area(s)</b>	Response
<b>Core Capabilities</b>	Operational Coordination Planning Situational Assessment Public Information and Warning
<b>Threat or Hazard</b>	Coordinated response to a protracted power outage and cascading effects impacting all of FEMA Region III
<b>Sponsor</b>	U.S. Department of Homeland Security (DHS), FEMA Region III, FEMA Emergency Management Institute (EMI), and the Virginia Department of Emergency Management (VDEM)

## OBJECTIVES

Based on the core capabilities, the Exercise Planning Team (EPT) developed the following exercise-specific objectives for exercise participant evaluation guidance:

- Objective 1 (Planning)** – Evaluate the ability of Virginia regions, localities, and the Plans Section\_of the Virginia Emergency Support Team (VEST) to analyze incident information, develop and disseminate incident specific documentation, including executable strategic, operational, and/or tactical-level approaches to meet incident objectives through appropriate channels in response to a human-caused, protracted

power outage and the cascading effects, in accordance with established plans, policies and procedures.

- **Objective 2 (Operational Coordination)** – Demonstrate the ability of Virginia regions, localities and the Virginia Emergency Support Team (VEST) Command and General Staff to establish incident management and Incident Action Planning processes, Operations Section to coordinate the management of Emergency Support Function (ESF) operations within the VEOC, Logistics Section to provide facilities, services, and support, and Finance Section to coordinate all financial and cost analysis aspects of the incident in response to a human-caused, protracted power outage and cascading effects, in accordance with the National Incident Management System and existing plans, policies and procedures.
- **Objective 3 (Situational Assessment)** – Evaluate the ability of Virginia regions, localities and the Virginia Emergency Support Team (VEST) to collect, process, and deliver information sufficient to inform decision making, including coordinating with elected leadership, and to provide any direction from elected leadership to incident management structures. This information may include lifesaving and life-sustaining activities and engage governmental, private, and civic sector resources within and outside of the affected area to meet basic human needs and stabilize the incident in response to a human-caused, protracted power outage and cascading effects, in accordance with existing plans, policies and procedures.
- **Objective 4 (Public Information and Warning)** – Demonstrate the ability of Virginia localities and the Commonwealth’s Joint Information Center (JIC) to deliver coordinated, prompt and actionable incident information in response to a human-caused, protracted power outage and cascading effects, in accordance with existing plans, policies and procedures.

**Number of Attendees**

188 Exercise Participants



## PARTICIPATING ORGANIZATIONS

Federal Agencies	State Agencies	Localities	Private & Non-Profits
<ul style="list-style-type: none"> <li>• Department of Homeland Security (DHS)</li> <li>• Federal Emergency Management Agency (FEMA)</li> <li>• USNORTHCOM</li> </ul>	<ul style="list-style-type: none"> <li>• Department of Environmental Quality (DEQ)</li> <li>• Department of Military Affairs (DMA)</li> <li>• Department of Mines, Minerals, and Energy (DMME)</li> <li>• Virginia Department for the Deaf and Hard of Hearing</li> <li>• Virginia Department of Agriculture and Consumer Services (VDACS)</li> <li>• Virginia Department of Aviation</li> <li>• Virginia Department of Emergency Management (VDEM)</li> <li>• Virginia Department of Health (VDH)</li> <li>• Virginia Department of Rail and Public Transportation</li> <li>• Virginia Department of Social Services (VDSS)</li> <li>• Virginia Department of Transportation (VDOT)</li> <li>• Virginia Information Technology Agency (VITA)</li> <li>• Virginia State Police (VSP)</li> </ul>	<ul style="list-style-type: none"> <li>• Buckingham County</li> <li>• City of Chesapeake</li> <li>• City of Norfolk</li> <li>• City of Richmond</li> <li>• Goochland County</li> <li>• Middlesex County</li> <li>• Nottoway County</li> <li>• Powhatan County</li> </ul>	<ul style="list-style-type: none"> <li>• Dominion Energy</li> <li>• Federal Reserve Bank</li> <li>• Lockheed Martin Energy/Rappahannock Electric Coop.</li> <li>• Palmetto EME</li> <li>• The Olson Group</li> <li>• Verizon Wireless/INFRAGUARD</li> <li>• Virginia Hospital and Healthcare Association</li> <li>• VSC Fire and Security</li> </ul>

## **SECTION 2: SCENARIO**

Mid-July temperatures broke records for the fourth year in a row, resulting in an increase in power consumption as citizens attempt to keep their homes cool. According to NOAA models, the week of July 25, 2017 looks to continue that trend into August. Federal Emergency Management Agency (FEMA) Region III utility partners have issued press releases requesting households to dial down their energy usage during peak hours when the demand for electricity threatens to exceed supply.

### **Sunday, July 23, 2017**

Just after sunrise, Dominion's Electric Transmission Operating Center staff notices issues with supervisory control and data acquisition (SCADA) communication paths to multiple substations. The telemetry issues are preventing the Transmission Operating Center from maintaining a high level of situational awareness regarding transmission facilities.

Several hours later, Dominion receives report of other utilities experiencing an unidentified zero-day vulnerability affecting relays and remote terminal units (RTU).

Dominion begins to experience electric transmission line outages at various substations within the service area. SCADA telemetry received at our Electric Transmission Operating Center is not reflecting appropriate equipment status and operators notice protective relays at affected facilities appear to be operating erratically.

Electric Transmission Operating Center discovers both the primary and backup SCADA systems are not communicating with RTUs at impacted substations.

An hour after initial malware scanning began, IT detected several patches downloaded by employees for EMS applications to be malicious.

To contain the spread of malware, IT, working with the Electric Transmission Operating Center decides to shut down primary and redundant SCADA communications to transmission facilities. Operating Centers dispatch service personnel to sites for local monitoring.

Dominion's Electric Transmission Operating Centers begin receiving reports from our Regional Operating Centers of localized distribution customer outages, some of which are affecting essential public services.

### **Monday, July 24, 2017**

Just before sunrise, multiple electric distribution substations, including those in Powhatan, Amelia, Goochland, Halifax, Buckingham, Portsmouth, Norfolk, Middlesex, Lancaster,

Chesapeake, Hampton, Newport News, York, Gloucester and James City County, were attacked by gunfire.

Customers who live near several of the substations called local law enforcement agencies after hearing gunshots near the substations and reported seeing individuals dressed in camouflage with rifles and backpacks. Dominion Corporate Security is working with local law enforcement agencies to secure the substations and to allow Dominion personnel to enter the substations to assess potential damage.

**SECTION 3: RESULTS SUMMARY** { TC "SECTION 2: EXERCISE DESIGN SUMMARY" \F C \L "1" }

The overarching purpose of the exercise was to demonstrate the ability of Virginia (state, local, and regional entities), FEMA Region III, its partner states, and private sector utility stakeholders to work in a coordinated response to a protracted power outage and cascading effects impacting all of FEMA Region III in accordance with the Commonwealth of Virginia Emergency Operations Plan, Section 44-146 17:2 of the Code of Virginia, Military and Emergency laws, Annual Statewide Drill, and locality Emergency Operations Plans. Several areas for strength and improvement were identified by the exercise evaluation team.

<b>Major Strengths</b>	<b>Areas for Improvement</b>
The process of communicating and coordinating resource requests to the regions was done efficiently by utilizing the regional multi-agency coordination centers (MACCs) and staff.	Formal policies and procedures need to be developed for the regional multi-agency coordination centers (MACCs) to include details regarding tasking procedures.
There was active coordination with Command Staff and External Affairs to develop messaging and share information internally and externally.	WebEOC upgrades should be implemented to include additional detail and functional boards for regional support structures.
The FEMA Incident Management Team was smoothly integrated into the VEST.	Regional contact and ESF directories need to be developed, distributed, and updated on a regular basis.

## **Conclusion**

The Virginia Emergency Support Team Exercise was designed to validate the coordination, management, and decision making between federal, state, regional, and private sector partners in response to the cascading emergency incidents precipitated by the prolonged and extensive power outage, by testing plans policies and procedures to improve response procedures, logistical coordination, decision-making, and information sharing. Exercise play focused on operational coordination, planning, situational assessment, and public information and warning.

The Exercise Planning Team designed an exercise that included coordinated response activities; demonstrated the ability to gather, analyze, and disseminate incident specific information; and demonstrated the ability of the federal, state, local, and private sector partners to quickly analyze information for situational awareness, identify impacts to the public, and make timely decisions.

The exercise successfully captured many areas of strength and improvement that will be used to improve state, local, and regional response plans, policies, and procedures and develop future training and exercise efforts.