**Questions for the Record – Responses from Mark Aysta**
**Subcommittee on Energy, Climate, and Grid Security on Friday, June 16, 2023, at the field hearing entitled "Enhancing America's Grid Security and Resilience."**

Questions from Congressman Jeff Duncan:

- **How much did it cost to repair the damage to the two Duke Energy substations that were attacked in the Moore County incident?**

  $4.55 Million

- **Please describe the security measures on-site prior to the attack (e.g., perimeter fencing, lighting, cameras, intrusion monitoring, audible alarms, etc.). What was the annual cost of security at the site prior to the attack?**

  In general, security measures at substations prior to the attack were designed to keep people from entering the substation and either engaging in theft or coming in contact with dangerous equipment resulting in either injury to themselves or the equipment. At the West End substation, there was a vehicle access gate blocking entry between the public road and the substation. This gate was locked at the time of the attack. The Carthage substation does not have a secondary vehicle access gate protecting the approach to the substation. Both substations were also surrounded by a 7-foot fence topped with concertina wire and accessible via a locked gate. There was also a security badge reader at the West End control house. Additionally, there were operational alarms on the substation equipment designed to alert Duke Energy employees in the event the equipment ceased to operate correctly.

  The annual cost of security prior to the attacks was not broken out for specific substations.

- **Please describe the additional security measures that were added to the substations following the attack. What was the cost of the additional security measures?**

  We have added additional cameras that are monitored by our security personnel to both stations. We continue to constantly reassess our security posture at these and other Duke substations. As part of that assessment, we have done a comprehensive review of our electric assets across our entire enterprise. As a result of our review, we have shifted from a tiered ranking system focused largely on an asset's impact to the bulk electric system to one that is more focused on potential impacts to customers.

  While we do not have a figure for the additional cost of security at the two substations which were attacked, we do plan to spend $535 million over four years across our entire six-state service territory for additional substation security.

- **What was the total estimated economic impact of the power outage that resulted from the substation attack? What was the estimated cost to electric customers?**

  We do not have an estimate for the total economic impact, however in addition to the $4.55 million in repair costs, we plan to spend $535 million in grid security upgrades over the next four years. There is no special treatment for the Moore County costs, so repair costs will be covered by the current rates customers pay, as would be the case for any outage costs. Grid security upgrades will also be included in customer rates. Some security upgrades were included in

the multi-year rate plan recently approved for Duke Energy Progress and currently under consideration by regulators for Duke Energy Carolinas. We would treat future grid security investments similarly during future rate proceedings.

Questions from Congressman Richard Hudson:

- **Congressional mandates on physical security measures aren't a cost-effective or permanent solution. What physical security measures have been successful in the past? What is currently recommended for substations now?**

  As an energy company operating electric infrastructure across seven states, we do not believe that one-size-fits-all security mandates would provide better protection, affordability or reliability for our customers. Each site is unique in design, location and service to customers and a one-size-fits all solution, while well intended, cannot account for differences in attributes. We have and will continue to evaluate each location individually to determine which measures will maximize reliability and the benefits of specific security improvements. Through advanced planning and analytics, the utility strives to determine the right improvements to make to increase reliability, resilience and security on our system.

- **One issue revealed following the Moore County attack was the length of time it takes to get parts necessary to repair a station. How does either Duke Energy or the state of North Carolina mitigate supply chain challenges that may keep communities in the dark after grid failures? What happens if the parts you need to replace critical energy transmission infrastructure are not available?**

  Being able to quickly replace critical components that were damaged in the attack—or even replace an entire transformer if necessary—depends upon access to spare equipment. The availability of parts and average lead times for some types of transformers vary. Generally, lead time for power transformers is quite long depending on the size, voltages, etc. of transformers that are currently in-service. Our critical spare program helps in meeting the need for spares in inventory to support failures, or other outage-related situations for power transformers. However, even with a critical spare program, the ability to replace damaged equipment depends on the impacted unit being one that matches available spares in inventory.

  Assuming no match is found in inventory, Duke would have to look at other short-term options like a mobile transformer, or a transformer mounted on a trailer to restore service in the event of a transformer failure. If we must purchase a new unit, we can utilize our slotting program with our current power transformer suppliers (by which we are given a certain number of production slots each month) resulting in a more favorable lead time compared to the standard market lead time. We also can work with our suppliers to expedite the unit based on the urgency of the situation.

  We also keep spare power transformer parts, like bushings (components of the transformer typically made of porcelain or polymer and used to connect the transformer to the electrical system). Sourcing and lead time of parts ultimately depends on the impacted transformer design and voltage. We have also created emergency response plans for every critical site, including location of spare parts, to reduce our response and outage times.

  Lastly, Duke Energy appreciates the approach of Congressman Hudson's *Protecting America's Distribution Transformer Supply Chain Act* to advance solutions that accelerate the production, procurement, and deployment of transformers."