

EDWARD J. MARKEY
MASSACHUSETTS

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FALL RIVER, MA 02721
508-677-0523

1550 MAIN STREET, 4TH FLOOR
SPRINGFIELD, MA 01103
413-785-4610

August 13, 2018

John McAvoy, CEO
Consolidated Edison of New York, Inc.
4 Irving Place RM 1875
New York, NY 10003

Dear Mr. McAvoy,

According to recent press reports, state-sponsored groups in Russia were behind a cyberattack on U.S. electric utilities last year.¹ In light of these concerning reports, I write to better understand how you are working to maximize the security of our electric grid and minimize its vulnerabilities to attack.

On July 23, the Wall Street Journal reported that, in 2016 and 2017, hackers backed by the Russian government successfully penetrated the U.S. electric grid through hundreds of power companies and third-party vendors with whom they do business.² Utilizing techniques to access purportedly secure networks, these Russian hackers managed to invade the networks of key utility vendors — companies “who have special access to update software, run diagnostics on equipment and perform other services that are needed to keep millions of pieces of gear in working order.”³ Through these vendors, the Russian hackers gained access to the control rooms of U.S. electric utilities, putting them in position to severely disrupt the U.S. power flow. There is now also concern that Russia may be seeking to automate these types of attacks, which could lead to more pervasive and broader hacking and harm to the electric grid.⁴

This recent attack should come as no surprise. In 2013, the Department of Homeland Security (DHS) considered the threat of cyberattack so serious that it issued an alert warning industry and government officials about it.⁵ That same year, I released a report entitled “Electric Grid Vulnerability: Industry Responses Reveal Security Gaps,” which found that the electric grid was

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the target of ongoing cyberattacks.⁶ In August 2016, the Idaho National Laboratory issued a report entitled “Cyber Threat and Vulnerability Analysis of the U.S. Electric Center,” which warned that, “[w]ith utilities in the U.S. and around the world increasingly moving toward smart grid technology and other upgrades with inherent cyber vulnerabilities, correlative threats from malicious cyberattacks on the North American electric grid continue to grow in frequency and sophistication.”⁷ And just last year, in the Department of Energy’s Quadrennial Energy Review, that agency found that the “cybersecurity landscape is characterized by rapidly evolving threats and vulnerability, juxtaposed against the slower-moving deployment of defense measures” and recommended that “system planning must evolve to meet the need for rapid response to system disturbances.”⁸

Following the release of my 2013 report, the Federal Energy Regulatory Commission (FERC) initiated a series of rulemakings to help address the security of our electric-system infrastructure. The most recent of these rules, issued in April 2018, institutes mandatory security controls for transient electronic devices, such as thumb drives, in an attempt to address classic cyber-infiltration methods through third party devices.⁹ However, as this most recent incident demonstrates, these security measures do not impede the sophisticated actions now being employed by foreign hackers.

To better understand the efforts of electric utilities to protect grid assets from cyberattack, I respectfully ask that you respond to the following questions no later than September 7, 2018:

1. According to the Department of Homeland Security, the most recent Russian cyberattacks affected hundreds of companies. Was your company a victim of this most recent attack? If so, please describe how your system was infiltrated and identify the steps you are taking to prevent a future incursion of the same nature.
2. New cyber-vulnerabilities that could pose risks for the grid continue to emerge. These include, but are not limited to, active hacking measures and corruption of third-party firmware or software. Please describe the steps, if any, you are taking to address these types of vulnerabilities.

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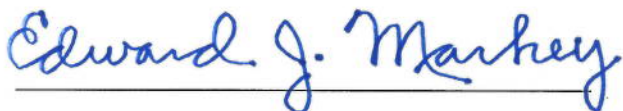
⁸ Quadrennial Energy Review, Transforming the Nation’s Electricity System: The Second Installment of the QER, U.S. Department of Energy (January 2017), <https://www.energy.gov/sites/prod/files/2017/02/f34/Quadrennial%20Energy%20Review--Second%20Installment%20%28Full%20Report%29.pdf>

⁹ 83 FR 17913

3. Do you currently utilize security protocols, special measures, or other practices to assess whether current or prospective third-party vendors could pose a cybersecurity threat? If so, please describe them. If not, why not?
4. For each of the past five years, how many notices did you receive from the North American Electric Reliability Corporation (NERC) relating to cyber security and containing Recommendations and Essential Actions? For each such notice, please indicate (a) the type of notice, (b) the degree to which the notice related to cybersecurity measures, (c) how many actions were included, and (d) how many of the recommended actions you fully implemented. If you have not implemented any of the actions because they are inapplicable, please also indicate this in your response.
5. For each of the past five years, have you been subject to an attempted or successful physical or cyberattack? For each year, please indicate (a) the number of attempted and successful physical attacks, (b) the number of attempted and successful cyberattacks, (c) whether any attack caused damage (and if so, please describe the nature of both the attack and the damage caused), (d) the number of attacks reported to FERC, NERC, DHS, DOE, or another authority (and identify which authority in each case), and (e) measures taken to prevent future similar attacks.
6. Do you believe that the most recent version of the FERC Critical Infrastructure Protection Standards — Version 5 — adequately protects against all known cybersecurity vulnerabilities? Why or why not?
7. Have you identified any additional vulnerabilities, including as part of an audit of third-party vendors? How do you plan to address any of these additional vulnerabilities?

Thank you in advance for your attention to these requests. If you have any questions about them, please contact Lindsey Griffith of my staff at 202-224-2742.

Sincerely,

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Edward J. Markey

United States Senator

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August 13, 2018

Lynn Good, CEO and President
Duke Energy Carolinas, LLC
550 South Tryon Street
Charlotte, NC 28202

Dear Mrs. Good,

According to recent press reports, state-sponsored groups in Russia were behind a cyberattack on U.S. electric utilities last year.¹ In light of these concerning reports, I write to better understand how you are working to maximize the security of our electric grid and minimize its vulnerabilities to attack.

On July 23, the Wall Street Journal reported that, in 2016 and 2017, hackers backed by the Russian government successfully penetrated the U.S. electric grid through hundreds of power companies and third-party vendors with whom they do business.² Utilizing techniques to access purportedly secure networks, these Russian hackers managed to invade the networks of key utility vendors — companies “who have special access to update software, run diagnostics on equipment and perform other services that are needed to keep millions of pieces of gear in working order.”³ Through these vendors, the Russian hackers gained access to the control rooms of U.S. electric utilities, putting them in position to severely disrupt the U.S. power flow. There is now also concern that Russia may be seeking to automate these types of attacks, which could lead to more pervasive and broader hacking and harm to the electric grid.⁴

This recent attack should come as no surprise. In 2013, the Department of Homeland Security (DHS) considered the threat of cyberattack so serious that it issued an alert warning industry and government officials about it.⁵ That same year, I released a report entitled “Electric Grid Vulnerability: Industry Responses Reveal Security Gaps,” which found that the electric grid was

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the target of ongoing cyberattacks.⁶ In August 2016, the Idaho National Laboratory issued a report entitled “Cyber Threat and Vulnerability Analysis of the U.S. Electric Center,” which warned that, “[w]ith utilities in the U.S. and around the world increasingly moving toward smart grid technology and other upgrades with inherent cyber vulnerabilities, correlative threats from malicious cyberattacks on the North American electric grid continue to grow in frequency and sophistication.”⁷ And just last year, in the Department of Energy’s Quadrennial Energy Review, that agency found that the “cybersecurity landscape is characterized by rapidly evolving threats and vulnerability, juxtaposed against the slower-moving deployment of defense measures” and recommended that “system planning must evolve to meet the need for rapid response to system disturbances.”⁸

Following the release of my 2013 report, the Federal Energy Regulatory Commission (FERC) initiated a series of rulemakings to help address the security of our electric-system infrastructure. The most recent of these rules, issued in April 2018, institutes mandatory security controls for transient electronic devices, such as thumb drives, in an attempt to address classic cyber-infiltration methods through third party devices.⁹ However, as this most recent incident demonstrates, these security measures do not impede the sophisticated actions now being employed by foreign hackers.

To better understand the efforts of electric utilities to protect grid assets from cyberattack, I respectfully ask that you respond to the following questions no later than September 7, 2018:

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2. New cyber-vulnerabilities that could pose risks for the grid continue to emerge. These include, but are not limited to, active hacking measures and corruption of third-party firmware or software. Please describe the steps, if any, you are taking to address these types of vulnerabilities.

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6. Do you believe that the most recent version of the FERC Critical Infrastructure Protection Standards — Version 5 — adequately protects against all known cybersecurity vulnerabilities? Why or why not?
7. Have you identified any additional vulnerabilities, including as part of an audit of third-party vendors? How do you plan to address any of these additional vulnerabilities?

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Edward J. Markey

United States Senator

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August 13, 2018

Pedro Pizarro, President and CEO
Edison International
P.O. Box 976
Rosemead, CA 91770

Dear Mr. Pizarro,

According to recent press reports, state-sponsored groups in Russia were behind a cyberattack on U.S. electric utilities last year.¹ In light of these concerning reports, I write to better understand how you are working to maximize the security of our electric grid and minimize its vulnerabilities to attack.

On July 23, the Wall Street Journal reported that, in 2016 and 2017, hackers backed by the Russian government successfully penetrated the U.S. electric grid through hundreds of power companies and third-party vendors with whom they do business.² Utilizing techniques to access purportedly secure networks, these Russian hackers managed to invade the networks of key utility vendors — companies “who have special access to update software, run diagnostics on equipment and perform other services that are needed to keep millions of pieces of gear in working order.”³ Through these vendors, the Russian hackers gained access to the control rooms of U.S. electric utilities, putting them in position to severely disrupt the U.S. power flow. There is now also concern that Russia may be seeking to automate these types of attacks, which could lead to more pervasive and broader hacking and harm to the electric grid.⁴

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Edward J. Markey

United States Senator

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August 13, 2018

Leo Denault, CEO
Entergy Corporation
639 Loyola Ave
New Orleans, LA 70113

Dear Mr. Denault,

According to recent press reports, state-sponsored groups in Russia were behind a cyberattack on U.S. electric utilities last year.¹ In light of these concerning reports, I write to better understand how you are working to maximize the security of our electric grid and minimize its vulnerabilities to attack.

On July 23, the Wall Street Journal reported that, in 2016 and 2017, hackers backed by the Russian government successfully penetrated the U.S. electric grid through hundreds of power companies and third-party vendors with whom they do business.² Utilizing techniques to access purportedly secure networks, these Russian hackers managed to invade the networks of key utility vendors — companies “who have special access to update software, run diagnostics on equipment and perform other services that are needed to keep millions of pieces of gear in working order.”³ Through these vendors, the Russian hackers gained access to the control rooms of U.S. electric utilities, putting them in position to severely disrupt the U.S. power flow. There is now also concern that Russia may be seeking to automate these types of attacks, which could lead to more pervasive and broader hacking and harm to the electric grid.⁴

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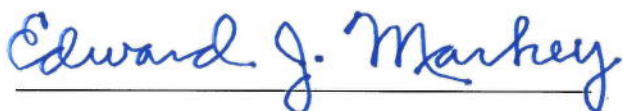
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7. Have you identified any additional vulnerabilities, including as part of an audit of third-party vendors? How do you plan to address any of these additional vulnerabilities?

Thank you in advance for your attention to these requests. If you have any questions about them, please contact Lindsey Griffith of my staff at 202-224-2742.

Sincerely,

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Edward J. Markey

United States Senator

EDWARD J. MARKEY
MASSACHUSETTS

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SPRINGFIELD, MA 01103
413-785-4610

August 13, 2018

Chris M. Crane, CEO and President
Exelon Corporation
PO Box 805398
Chicago, IL 60680-5398

Dear Mr. Crane,

According to recent press reports, state-sponsored groups in Russia were behind a cyberattack on U.S. electric utilities last year.¹ In light of these concerning reports, I write to better understand how you are working to maximize the security of our electric grid and minimize its vulnerabilities to attack.

On July 23, the Wall Street Journal reported that, in 2016 and 2017, hackers backed by the Russian government successfully penetrated the U.S. electric grid through hundreds of power companies and third-party vendors with whom they do business.² Utilizing techniques to access purportedly secure networks, these Russian hackers managed to invade the networks of key utility vendors — companies “who have special access to update software, run diagnostics on equipment and perform other services that are needed to keep millions of pieces of gear in working order.”³ Through these vendors, the Russian hackers gained access to the control rooms of U.S. electric utilities, putting them in position to severely disrupt the U.S. power flow. There is now also concern that Russia may be seeking to automate these types of attacks, which could lead to more pervasive and broader hacking and harm to the electric grid.⁴

This recent attack should come as no surprise. In 2013, the Department of Homeland Security (DHS) considered the threat of cyberattack so serious that it issued an alert warning industry and government officials about it.⁵ That same year, I released a report entitled “Electric Grid Vulnerability: Industry Responses Reveal Security Gaps,” which found that the electric grid was

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the target of ongoing cyberattacks.⁶ In August 2016, the Idaho National Laboratory issued a report entitled “Cyber Threat and Vulnerability Analysis of the U.S. Electric Center,” which warned that, “[w]ith utilities in the U.S. and around the world increasingly moving toward smart grid technology and other upgrades with inherent cyber vulnerabilities, correlative threats from malicious cyberattacks on the North American electric grid continue to grow in frequency and sophistication.”⁷ And just last year, in the Department of Energy’s Quadrennial Energy Review, that agency found that the “cybersecurity landscape is characterized by rapidly evolving threats and vulnerability, juxtaposed against the slower-moving deployment of defense measures” and recommended that “system planning must evolve to meet the need for rapid response to system disturbances.”⁸

Following the release of my 2013 report, the Federal Energy Regulatory Commission (FERC) initiated a series of rulemakings to help address the security of our electric-system infrastructure. The most recent of these rules, issued in April 2018, institutes mandatory security controls for transient electronic devices, such as thumb drives, in an attempt to address classic cyber-infiltration methods through third party devices.⁹ However, as this most recent incident demonstrates, these security measures do not impede the sophisticated actions now being employed by foreign hackers.

To better understand the efforts of electric utilities to protect grid assets from cyberattack, I respectfully ask that you respond to the following questions no later than September 7, 2018:

1. According to the Department of Homeland Security, the most recent Russian cyberattacks affected hundreds of companies. Was your company a victim of this most recent attack? If so, please describe how your system was infiltrated and identify the steps you are taking to prevent a future incursion of the same nature.
2. New cyber-vulnerabilities that could pose risks for the grid continue to emerge. These include, but are not limited to, active hacking measures and corruption of third-party firmware or software. Please describe the steps, if any, you are taking to address these types of vulnerabilities.

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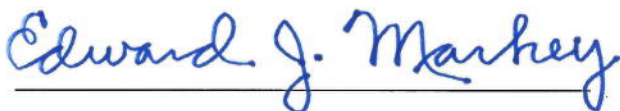
⁸ Quadrennial Energy Review, Transforming the Nation’s Electricity System: The Second Installment of the QER, U.S. Department of Energy (January 2017), <https://www.energy.gov/sites/prod/files/2017/02/f34/Quadrennial%20Energy%20Review--Second%20Installment%20%28Full%20Report%29.pdf>

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Edward J. Markey

United States Senator

EDWARD J. MARKEY
MASSACHUSETTS

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413-785-4610

August 13, 2018

Eric Silagy, CEO and President
NextEra Energy Resources, LLC
Florida Power and Light
P.O. Box 14000
Juno Beach, FL 33408

Dear Mr. Silagy,

According to recent press reports, state-sponsored groups in Russia were behind a cyberattack on U.S. electric utilities last year.¹ In light of these concerning reports, I write to better understand how you are working to maximize the security of our electric grid and minimize its vulnerabilities to attack.

On July 23, the Wall Street Journal reported that, in 2016 and 2017, hackers backed by the Russian government successfully penetrated the U.S. electric grid through hundreds of power companies and third-party vendors with whom they do business.² Utilizing techniques to access purportedly secure networks, these Russian hackers managed to invade the networks of key utility vendors — companies “who have special access to update software, run diagnostics on equipment and perform other services that are needed to keep millions of pieces of gear in working order.”³ Through these vendors, the Russian hackers gained access to the control rooms of U.S. electric utilities, putting them in position to severely disrupt the U.S. power flow. There is now also concern that Russia may be seeking to automate these types of attacks, which could lead to more pervasive and broader hacking and harm to the electric grid.⁴

This recent attack should come as no surprise. In 2013, the Department of Homeland Security (DHS) considered the threat of cyberattack so serious that it issued an alert warning industry and government officials about it.⁵ That same year, I released a report entitled “Electric Grid

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Following the release of my 2013 report, the Federal Energy Regulatory Commission (FERC) initiated a series of rulemakings to help address the security of our electric-system infrastructure. The most recent of these rules, issued in April 2018, institutes mandatory security controls for transient electronic devices, such as thumb drives, in an attempt to address classic cyber-infiltration methods through third party devices.⁹ However, as this most recent incident demonstrates, these security measures do not impede the sophisticated actions now being employed by foreign hackers.

To better understand the efforts of electric utilities to protect grid assets from cyberattack, I respectfully ask that you respond to the following questions no later than September 7, 2018:

1. According to the Department of Homeland Security, the most recent Russian cyberattacks affected hundreds of companies. Was your company a victim of this most recent attack? If so, please describe how your system was infiltrated and identify the steps you are taking to prevent a future incursion of the same nature.
2. New cyber-vulnerabilities that could pose risks for the grid continue to emerge. These include, but are not limited to, active hacking measures and corruption of third-party firmware or software. Please describe the steps, if any, you are taking to address these types of vulnerabilities.

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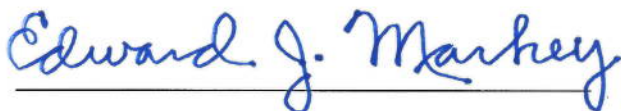
⁸ Quadrennial Energy Review, Transforming the Nation’s Electricity System: The Second Installment of the QER, U.S. Department of Energy (January 2017), <https://www.energy.gov/sites/prod/files/2017/02/f34/Quadrennial%20Energy%20Review--Second%20Installment%20%28Full%20Report%29.pdf>

⁹ 83 FR 17913

3. Do you currently utilize security protocols, special measures, or other practices to assess whether current or prospective third-party vendors could pose a cybersecurity threat? If so, please describe them. If not, why not?
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Thank you in advance for your attention to these requests. If you have any questions about them, please contact Lindsey Griffith of my staff at 202-224-2742.

Sincerely,

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Edward J. Markey

United States Senator

EDWARD J. MARKEY
MASSACHUSETTS

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SPRINGFIELD, MA 01103
413-785-4610

August 13, 2018

Dean Seavers, President
National Grid US
40 Sylvan Road
Waltham, MA 02451

Dear Mr. Seavers,

According to recent press reports, state-sponsored groups in Russia were behind a cyberattack on U.S. electric utilities last year.¹ In light of these concerning reports, I write to better understand how you are working to maximize the security of our electric grid and minimize its vulnerabilities to attack.

On July 23, the Wall Street Journal reported that, in 2016 and 2017, hackers backed by the Russian government successfully penetrated the U.S. electric grid through hundreds of power companies and third-party vendors with whom they do business.² Utilizing techniques to access purportedly secure networks, these Russian hackers managed to invade the networks of key utility vendors — companies “who have special access to update software, run diagnostics on equipment and perform other services that are needed to keep millions of pieces of gear in working order.”³ Through these vendors, the Russian hackers gained access to the control rooms of U.S. electric utilities, putting them in position to severely disrupt the U.S. power flow. There is now also concern that Russia may be seeking to automate these types of attacks, which could lead to more pervasive and broader hacking and harm to the electric grid.⁴

This recent attack should come as no surprise. In 2013, the Department of Homeland Security (DHS) considered the threat of cyberattack so serious that it issued an alert warning industry and government officials about it.⁵ That same year, I released a report entitled “Electric Grid

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Following the release of my 2013 report, the Federal Energy Regulatory Commission (FERC) initiated a series of rulemakings to help address the security of our electric-system infrastructure. The most recent of these rules, issued in April 2018, institutes mandatory security controls for transient electronic devices, such as thumb drives, in an attempt to address classic cyber-infiltration methods through third party devices.⁹ However, as this most recent incident demonstrates, these security measures do not impede the sophisticated actions now being employed by foreign hackers.

To better understand the efforts of electric utilities to protect grid assets from cyberattack, I respectfully ask that you respond to the following questions no later than September 7, 2018:

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Edward J. Markey

United States Senator

EDWARD J. MARKEY
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August 13, 2018

Geisha J. Williams, CEO and President
Pacific Gas and Electric Company
PO Box 997300
Sacramento, CA 95899-7300

Dear Mrs. Williams,

According to recent press reports, state-sponsored groups in Russia were behind a cyberattack on U.S. electric utilities last year.¹ In light of these concerning reports, I write to better understand how you are working to maximize the security of our electric grid and minimize its vulnerabilities to attack.

On July 23, the Wall Street Journal reported that, in 2016 and 2017, hackers backed by the Russian government successfully penetrated the U.S. electric grid through hundreds of power companies and third-party vendors with whom they do business.² Utilizing techniques to access purportedly secure networks, these Russian hackers managed to invade the networks of key utility vendors — companies “who have special access to update software, run diagnostics on equipment and perform other services that are needed to keep millions of pieces of gear in working order.”³ Through these vendors, the Russian hackers gained access to the control rooms of U.S. electric utilities, putting them in position to severely disrupt the U.S. power flow. There is now also concern that Russia may be seeking to automate these types of attacks, which could lead to more pervasive and broader hacking and harm to the electric grid.⁴

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⁷ Mission Support Center Analysis Report, Cyber Threat and Vulnerability Analysis of the U.S. Electric Sector, Idaho National Laboratory (August 2016), <https://www.energy.gov/sites/prod/files/2017/01/f34/Cyber%20Threat%20and%20Vulnerability%20Analysis%20of%20the%20U.S.%20Electric%20Sector.pdf>

⁸ Quadrennial Energy Review, Transforming the Nation’s Electricity System: The Second Installment of the QER, U.S. Department of Energy (January 2017), <https://www.energy.gov/sites/prod/files/2017/02/f34/Quadrennial%20Energy%20Review--Second%20Installment%20%28Full%20Report%29.pdf>

⁹ 83 FR 17913

3. Do you currently utilize security protocols, special measures, or other practices to assess whether current or prospective third-party vendors could pose a cybersecurity threat? If so, please describe them. If not, why not?
4. For each of the past five years, how many notices did you receive from the North American Electric Reliability Corporation (NERC) relating to cyber security and containing Recommendations and Essential Actions? For each such notice, please indicate (a) the type of notice, (b) the degree to which the notice related to cybersecurity measures, (c) how many actions were included, and (d) how many of the recommended actions you fully implemented. If you have not implemented any of the actions because they are inapplicable, please also indicate this in your response.
5. For each of the past five years, have you been subject to an attempted or successful physical or cyberattack? For each year, please indicate (a) the number of attempted and successful physical attacks, (b) the number of attempted and successful cyberattacks, (c) whether any attack caused damage (and if so, please describe the nature of both the attack and the damage caused), (d) the number of attacks reported to FERC, NERC, DHS, DOE, or another authority (and identify which authority in each case), and (e) measures taken to prevent future similar attacks.
6. Do you believe that the most recent version of the FERC Critical Infrastructure Protection Standards — Version 5 — adequately protects against all known cybersecurity vulnerabilities? Why or why not?
7. Have you identified any additional vulnerabilities, including as part of an audit of third-party vendors? How do you plan to address any of these additional vulnerabilities?

Thank you in advance for your attention to these requests. If you have any questions about them, please contact Lindsey Griffith of my staff at 202-224-2742.

Sincerely,

A handwritten signature in blue ink that reads "Edward J. Markey". The signature is written in a cursive style and is positioned above a horizontal line.

Edward J. Markey

United States Senator

EDWARD J. MARKEY
MASSACHUSETTS

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1550 MAIN STREET, 4TH FLOOR
SPRINGFIELD, MA 01103
413-785-4610

August 13, 2018

Tom Fanning, President and CEO
Southern Company
30 Ivan Allen Jr. Blvd. NW
Atlanta, GA 30308

Dear Mr. Fanning,

According to recent press reports, state-sponsored groups in Russia were behind a cyberattack on U.S. electric utilities last year.¹ In light of these concerning reports, I write to better understand how you are working to maximize the security of our electric grid and minimize its vulnerabilities to attack.

On July 23, the Wall Street Journal reported that, in 2016 and 2017, hackers backed by the Russian government successfully penetrated the U.S. electric grid through hundreds of power companies and third-party vendors with whom they do business.² Utilizing techniques to access purportedly secure networks, these Russian hackers managed to invade the networks of key utility vendors — companies “who have special access to update software, run diagnostics on equipment and perform other services that are needed to keep millions of pieces of gear in working order.”³ Through these vendors, the Russian hackers gained access to the control rooms of U.S. electric utilities, putting them in position to severely disrupt the U.S. power flow. There is now also concern that Russia may be seeking to automate these types of attacks, which could lead to more pervasive and broader hacking and harm to the electric grid.⁴

This recent attack should come as no surprise. In 2013, the Department of Homeland Security (DHS) considered the threat of cyberattack so serious that it issued an alert warning industry and government officials about it.⁵ That same year, I released a report entitled “Electric Grid Vulnerability: Industry Responses Reveal Security Gaps,” which found that the electric grid was

¹ Rebecca Smith, Russian Hackers Reach U.S. Utility Control Rooms, Homeland Security Officials Say, Wall Street Journal (July 23, 2018), <https://www.wsj.com/articles/russian-hackers-reach-u-s-utility-control-rooms-homeland-security-officials-say-1532388110>

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⁴ *Id.*

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the target of ongoing cyberattacks.⁶ In August 2016, the Idaho National Laboratory issued a report entitled “Cyber Threat and Vulnerability Analysis of the U.S. Electric Center,” which warned that, “[w]ith utilities in the U.S. and around the world increasingly moving toward smart grid technology and other upgrades with inherent cyber vulnerabilities, correlative threats from malicious cyberattacks on the North American electric grid continue to grow in frequency and sophistication.”⁷ And just last year, in the Department of Energy’s Quadrennial Energy Review, that agency found that the “cybersecurity landscape is characterized by rapidly evolving threats and vulnerability, juxtaposed against the slower-moving deployment of defense measures” and recommended that “system planning must evolve to meet the need for rapid response to system disturbances.”⁸

Following the release of my 2013 report, the Federal Energy Regulatory Commission (FERC) initiated a series of rulemakings to help address the security of our electric-system infrastructure. The most recent of these rules, issued in April 2018, institutes mandatory security controls for transient electronic devices, such as thumb drives, in an attempt to address classic cyber-infiltration methods through third party devices.⁹ However, as this most recent incident demonstrates, these security measures do not impede the sophisticated actions now being employed by foreign hackers.

To better understand the efforts of electric utilities to protect grid assets from cyberattack, I respectfully ask that you respond to the following questions no later than September 7, 2018:

1. According to the Department of Homeland Security, the most recent Russian cyberattacks affected hundreds of companies. Was your company a victim of this most recent attack? If so, please describe how your system was infiltrated and identify the steps you are taking to prevent a future incursion of the same nature.
2. New cyber-vulnerabilities that could pose risks for the grid continue to emerge. These include, but are not limited to, active hacking measures and corruption of third-party firmware or software. Please describe the steps, if any, you are taking to address these types of vulnerabilities.

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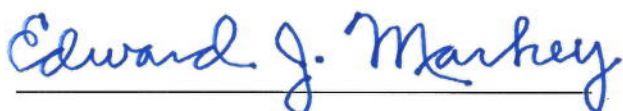
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6. Do you believe that the most recent version of the FERC Critical Infrastructure Protection Standards — Version 5 — adequately protects against all known cybersecurity vulnerabilities? Why or why not?
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Thank you in advance for your attention to these requests. If you have any questions about them, please contact Lindsey Griffith of my staff at 202-224-2742.

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August 13, 2018

Ben Fowke, President and CEO
Xcel Energy
414 Nicollet Mall
Minneapolis, MN 55401

Dear Mr. Fowke,

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On July 23, the Wall Street Journal reported that, in 2016 and 2017, hackers backed by the Russian government successfully penetrated the U.S. electric grid through hundreds of power companies and third-party vendors with whom they do business.² Utilizing techniques to access purportedly secure networks, these Russian hackers managed to invade the networks of key utility vendors — companies “who have special access to update software, run diagnostics on equipment and perform other services that are needed to keep millions of pieces of gear in working order.”³ Through these vendors, the Russian hackers gained access to the control rooms of U.S. electric utilities, putting them in position to severely disrupt the U.S. power flow. There is now also concern that Russia may be seeking to automate these types of attacks, which could lead to more pervasive and broader hacking and harm to the electric grid.⁴

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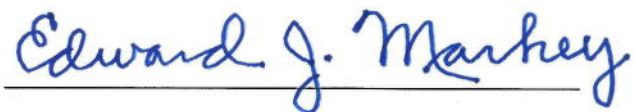
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Edward J. Markey

United States Senator