

Calendar No. 264

116TH CONGRESS
1ST SESSION

S. 2333

[Report No. 116–144]

To provide for enhanced energy grid security.

IN THE SENATE OF THE UNITED STATES

JULY 30, 2019

Ms. CANTWELL (for herself and Mr. HEINRICH) introduced the following bill;
which was read twice and referred to the Committee on Energy and Nat-
ural Resources

OCTOBER 23, 2019

Reported by Ms. MURKOWSKI, without amendment

A BILL

To provide for enhanced energy grid security.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*

3 **SECTION 1. SHORT TITLE.**

4 This Act may be cited as the “Energy Cybersecurity
5 Act of 2019”.

6 **SEC. 2. DEFINITIONS.**

7 In this Act:

1 (1) DEPARTMENT.—The term “Department”
2 means the Department of Energy.

3 (2) ELECTRIC UTILITY.—The term “electric
4 utility” has the meaning given the term in section
5 3 of the Federal Power Act (16 U.S.C. 796).

6 (3) ES-ISAC.—The term “ES-ISAC” means
7 the Electricity Sector Information Sharing and
8 Analysis Center.

9 (4) NATIONAL LABORATORY.—The term “Na-
10 tional Laboratory” has the meaning given the term
11 in section 2 of the Energy Policy Act of 2005 (42
12 U.S.C. 15801).

13 (5) SECRETARY.—The term “Secretary” means
14 the Secretary of Energy.

15 **SEC. 3. ENHANCED GRID SECURITY.**

16 (a) CYBERSECURITY FOR THE ENERGY SECTOR RE-
17 SEARCH, DEVELOPMENT, AND DEMONSTRATION PRO-
18 GRAM.—

19 (1) IN GENERAL.—The Secretary, in consulta-
20 tion with appropriate Federal agencies, the energy
21 sector, the States, and other stakeholders, shall
22 carry out a program—

23 (A) to develop advanced cybersecurity ap-
24 plications and technologies for the energy sec-
25 tor—

1 (i) to identify and mitigate
2 vulnerabilities, including—

3 (I) dependencies on other critical
4 infrastructure; and

5 (II) impacts from weather and
6 fuel supply; and

7 (ii) to advance the security of field de-
8 vices and third-party control systems, in-
9 cluding—

10 (I) systems for generation, trans-
11 mission, distribution, end use, and
12 market functions;

13 (II) specific electric grid elements
14 including advanced metering, demand
15 response, distributed generation, and
16 electricity storage;

17 (III) forensic analysis of infected
18 systems; and

19 (IV) secure communications;

20 (B) to leverage electric grid architecture as
21 a means to assess risks to the energy sector, in-
22 cluding by implementing an all-hazards ap-
23 proach to communications infrastructure, con-
24 trol systems architecture, and power systems
25 architecture;

1 (C) to perform pilot demonstration projects
 2 with the energy sector to gain experience with
 3 new technologies; and

4 (D) to develop workforce development cur-
 5 ricula for energy sector-related cybersecurity.

6 (2) AUTHORIZATION OF APPROPRIATIONS.—

7 There is authorized to be appropriated to carry out
 8 this subsection \$65,000,000 for each of fiscal years
 9 2020 through 2028.

10 (b) ENERGY SECTOR COMPONENT TESTING FOR
 11 CYBERRESILIENCE PROGRAM.—

12 (1) IN GENERAL.—The Secretary shall carry
 13 out a program—

14 (A) to establish a cybertesting and mitiga-
 15 tion program to identify vulnerabilities of en-
 16 ergy sector supply chain products to known
 17 threats;

18 (B) to oversee third-party cybertesting;
 19 and

20 (C) to develop procurement guidelines for
 21 energy sector supply chain components.

22 (2) AUTHORIZATION OF APPROPRIATIONS.—

23 There is authorized to be appropriated to carry out
 24 this subsection \$15,000,000 for each of fiscal years
 25 2020 through 2028.

1 (c) ENERGY SECTOR OPERATIONAL SUPPORT FOR
2 CYBERRESILIENCE PROGRAM.—

3 (1) IN GENERAL.—The Secretary may carry out
4 a program—

5 (A) to enhance and periodically test—

6 (i) the emergency response capabilities
7 of the Department; and

8 (ii) the coordination of the Depart-
9 ment with other agencies, the National
10 Laboratories, and private industry;

11 (B) to expand cooperation of the Depart-
12 ment with the intelligence communities for en-
13 ergy sector-related threat collection and anal-
14 ysis;

15 (C) to enhance the tools of the Department
16 and ES-ISAC for monitoring the status of the
17 energy sector;

18 (D) to expand industry participation in
19 ES-ISAC; and

20 (E) to provide technical assistance to small
21 electric utilities for purposes of assessing
22 cybermaturity level.

23 (2) AUTHORIZATION OF APPROPRIATIONS.—

24 There is authorized to be appropriated to carry out

1 this subsection \$10,000,000 for each of fiscal years
2 2020 through 2028.

3 (d) MODELING AND ASSESSING ENERGY INFRA-
4 STRUCTURE RISK.—

5 (1) IN GENERAL.—The Secretary shall develop
6 an advanced energy security program to secure en-
7 ergy networks, including electric, natural gas, and
8 oil exploration, transmission, and delivery.

9 (2) SECURITY AND RESILIENCY OBJECTIVE.—
10 The objective of the program developed under para-
11 graph (1) is to increase the functional preservation
12 of the electric grid operations or natural gas and oil
13 operations in the face of natural and human-made
14 threats and hazards, including electric magnetic
15 pulse and geomagnetic disturbances.

16 (3) ELIGIBLE ACTIVITIES.—In carrying out the
17 program developed under paragraph (1), the Sec-
18 retary may—

19 (A) develop capabilities to identify
20 vulnerabilities and critical components that pose
21 major risks to grid security if destroyed or im-
22 paired;

23 (B) provide modeling at the national level
24 to predict impacts from natural or human-made
25 events;

1 (C) develop a maturity model for physical
2 security and cybersecurity;

3 (D) conduct exercises and assessments to
4 identify and mitigate vulnerabilities to the elec-
5 tric grid, including providing mitigation rec-
6 ommendations;

7 (E) conduct research hardening solutions
8 for critical components of the electric grid;

9 (F) conduct research mitigation and recov-
10 ery solutions for critical components of the elec-
11 tric grid; and

12 (G) provide technical assistance to States
13 and other entities for standards and risk anal-
14 ysis.

15 (4) AUTHORIZATION OF APPROPRIATIONS.—

16 There is authorized to be appropriated to carry out
17 this subsection \$10,000,000 for each of fiscal years
18 2020 through 2028.

19 (e) LEVERAGING EXISTING PROGRAMS.—The pro-
20 grams established under this section shall be carried out
21 consistent with—

22 (1) the report of the Department entitled
23 “Roadmap to Achieve Energy Delivery Systems Cy-
24 bersecurity” and dated 2011;

25 (2) existing programs of the Department; and

1 (3) any associated strategic framework that
2 links together academic and National Laboratory re-
3 searchers, electric utilities, manufacturers, and any
4 other relevant private industry organizations, includ-
5 ing the Electricity Sub-sector Coordinating Council.

6 (f) STUDY.—

7 (1) IN GENERAL.—Not later than 180 days
8 after the date of enactment of this Act, the Sec-
9 retary, in consultation with the Federal Energy Reg-
10 ulatory Commission and the North American Elec-
11 tric Reliability Corporation, shall conduct a study to
12 explore alternative management structures and fund-
13 ing mechanisms to expand industry membership and
14 participation in ES-ISAC.

15 (2) REPORT.—The Secretary shall submit to
16 the appropriate committees of Congress a report de-
17 scribing the results of the study conducted under
18 paragraph (1).

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