112TH CONGRESS 1ST SESSION

H. R. 668

To amend the Federal Power Act to protect the bulk-power system and electric infrastructure critical to the defense and well-being of the United States against natural and manmade electromagnetic pulse ("EMP") threats and vulnerabilities.

IN THE HOUSE OF REPRESENTATIVES

February 11, 2011

Mr. Franks of Arizona (for himself, Mr. Bartlett, Mr. Hall, Mr. Lamborn, Mr. King of Iowa, Mr. Akin, Mr. Broun of Georgia, Mr. Marchant, Mr. Posey, Mr. West, Mr. Lobiondo, Mr. Bishop of Utah, Mr. Hunter, Mr. Terry, Mr. Kline, Mr. Daniel E. Lungren of California, Mr. Stearns, Mr. King of New York, Mr. Turner, Ms. Clarke of New York, Mr. Garamendi, Mr. Sam Johnson of Texas, Mr. Johnson of Ohio, Mr. Jordan, and Mr. Royce) introduced the following bill; which was referred to the Committee on Energy and Commerce, and in addition to the Committee on the Budget, for a period to be subsequently determined by the Speaker, in each case for consideration of such provisions as fall within the jurisdiction of the committee concerned

A BILL

To amend the Federal Power Act to protect the bulk-power system and electric infrastructure critical to the defense and well-being of the United States against natural and manmade electromagnetic pulse ("EMP") threats and vulnerabilities.

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

1 SECTION 1. SHORT TITLE.

- This Act may be cited as the "Secure High-voltage
- 3 Infrastructure for Electricity from Lethal Damage Act"
- 4 or the "SHIELD Act".

5 SEC. 2. FINDINGS.

- 6 The Congress makes the following findings:
- 7 (1) According to the Report of the Commission 8 to Assess the Threat to the United States from 9 Electromagnetic Pulse Attack (in this Act referred 10 to as the "EMP Commission Report"), the society 11 and economy of the United States are "critically de-
- pendent upon the availability of electricity.".
- 13 (2) According to the EMP Commission Report, 14 "continued electrical supply is necessary for sus-15 taining water supplies, production and distribution
- of food, fuel, communications, and everything else
- that is part of our economy".
- 18 (3) According to the EMP Commission Report,
- 19 "contemporary U.S. society is not structured, nor
- does it have the means, to provide for the needs of
- 21 nearly 300 million Americans without electricity.".
- 22 (4) According to the EMP Commission Report,
- due to the existing electrical system operating at or
- 24 near its physical capacity, "a relatively modest upset
- to the system can cause functional collapse.".

- 1 (5) According to the EMP Commission Report, 2 electromagnetic pulse (in this Act referred to as 3 "EMP") is a threat to the overall electrical power 4 system.
 - (6) According to the EMP Commission Report, EMP occurs both naturally, such as geomagnetic storms, and via manmade devices.
 - (7) According to the EMP Commission Report, while the electric infrastructure "has a degree of durability against . . . the failure of one or a small number of [electric] components," the current strategy for recovery leaves the United States ill-prepared to respond effectively to an EMP attack that would potentially result in damage to vast numbers of components nearly simultaneously over an unprecedented geographic scale.
 - (8) According to the EMP Commission Report, EMP "may couple ultimately unmanageable currents and voltages into an electrical system routinely operated with little margin and cause the collapse of large portions of the electrical system.".
 - (9) According to the EMP Commission Report, a collapse of large portions of the electrical system will result in significant periods of power-outage and

- "restoration from collapse or loss of significant por-1 2 tions of the system [will be] exceedingly difficult.". (10) According to the EMP Commission Re-3 4 port, "should the electrical power system be lost for 5 any substantial period of time . . . the consequences 6 are likely to be catastrophic to civilian society.". 7 (11) According to the EMP Commission Re-8 port, "the Commission is deeply concerned that 9 [negative] impacts [on the electric infrastructure] 10 are certain in an EMP event unless practical steps 11 are taken to provide protection for critical elements 12 of the electric system.". 13 SEC. 3. AMENDMENT TO THE FEDERAL POWER ACT. 14 (a) Critical Electric Infrastructure Secu-15 RITY.—Part II of the Federal Power Act (16 U.S.C. 824) et seq.) is amended by adding after section 215 the fol-16 lowing new section: 17 18 "SEC. 215A. CRITICAL ELECTRIC INFRASTRUCTURE SECU-19 RITY. 20 "(a) DEFINITIONS.—For purposes of this section:
- "(1) Bulk-power system; electric reli-21 22 ABILITY ORGANIZATION; REGIONAL ENTITY.—The 23 terms 'bulk-power system', 'Electric Reliability Or-24 ganization', and 'regional entity' have the meanings

given such terms in paragraphs (1), (2), and (7) of section 215(a), respectively.

- "(2) DEFENSE CRITICAL ELECTRIC INFRA-STRUCTURE.—The term 'defense critical electric infrastructure' means any infrastructure located in the United States (including the territories) used for the generation, transmission, or distribution of electric energy that—
- 9 "(A) is not part of the bulk-power system; 10 and
 - "(B) serves a facility designated by the President pursuant to subsection (d)(1), but is not owned or operated by the owner or operator of such facility.

"(3) DEFENSE CRITICAL ELECTRIC INFRA-STRUCTURE VULNERABILITY.—The term 'defense critical electric infrastructure vulnerability' means a weakness in defense critical electric infrastructure that, in the event of a malicious act using an electromagnetic pulse, would pose a substantial risk of disruption of those electrical or electronic devices or communications networks, including hardware, software, and data, that are essential to the reliability of defense critical electric infrastructure.

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- "(4) ELECTROMAGNETIC PULSE.—The term 'electromagnetic pulse' means 1 or more pulses of electromagnetic energy generated or emitted by a device capable of disabling, disrupting, or destroying electronic equipment by means of such a pulse.
 - "(5) GEOMAGNETIC STORM.—The term 'geomagnetic storm' means a temporary disturbance of the Earth's magnetic field resulting from solar activity.
 - "(6) GRID SECURITY THREAT.—The term 'grid security threat' means a substantial likelihood of—
 - "(A) a malicious act using an electromagnetic pulse, or a geomagnetic storm event, that could disrupt the operation of those electrical or electronic devices or communications networks, including hardware, software, and data, that are essential to the reliability of the bulk-power system or of defense critical electric infrastructure; and
 - "(B) disruption of the operation of such devices or networks, with significant adverse effects on the reliability of the bulk-power system or of defense critical electric infrastructure, as a result of such act or event.

- "(7) GRID SECURITY VULNERABILITY.—The term 'grid security vulnerability' means a weakness that, in the event of a malicious act using an electro-magnetic pulse, would pose a substantial risk of dis-ruption to the operation of those electrical or elec-tronic devices or communications networks, includ-ing hardware, software, and data, that are essential to the reliability of the bulk-power system.
 - "(8) Large transformer.—The term 'large transformer' means an electric transformer that is part of the bulk-power system.
 - "(9) PROTECTED INFORMATION.—The term 'protected information' means information, other than classified national security information, designated as protected information by the Commission under subsection (e)(2)—
 - "(A) that was developed or submitted in connection with the implementation of this section;
 - "(B) that specifically discusses grid security threats, grid security vulnerabilities, defense critical electric infrastructure vulnerabilities, or plans, procedures, or measures to address such threats or vulnerabilities; and

- "(C) the unauthorized disclosure of which could be used in a malicious manner to impair the reliability of the bulk-power system or of defense critical electric infrastructure.
 - "(10) Secretary.—The term 'Secretary' means the Secretary of Energy.
 - "(11) Security.—The definition of 'security' in section 3(16) shall not apply to the provisions in this section.

10 "(b) Emergency Response Measures.—

"(1) AUTHORITY TO ADDRESS GRID SECURITY THREATS.—Whenever the President issues and provides to the Commission (either directly or through the Secretary) a written directive or determination identifying an imminent grid security threat, the Commission may, with or without notice, hearing, or report, issue such orders for emergency measures as are necessary in its judgment to protect the reliability of the bulk-power system or of defense critical electric infrastructure against such threat. As soon as practicable, but not later than 180 days after the date of enactment of this section, the Commission shall, after notice and opportunity for comment, establish rules of procedure that ensure that such authority can be exercised expeditiously.

"(2) Notification of congress.—Whenever 1 2 the President issues and provides to the Commission 3 (either directly or through the Secretary) a written 4 directive or determination under paragraph (1), the 5 President (or the Secretary, as the case may be) 6 shall promptly notify congressional committees of 7 relevant jurisdiction, including the Committee on 8 Energy and Commerce of the House of Representa-9 tives and the Committee on Energy and Natural Re-10 sources of the Senate, of the contents of, and jus-11 tification for, such directive or determination.

- "(3) Consultation.—Before issuing an order for emergency measures under paragraph (1), the Commission shall, to the extent practicable in light of the nature of the grid security threat and the urgency of the need for such emergency measures, consult with appropriate governmental authorities in Canada and Mexico, entities described in paragraph (4), the Secretary, and other appropriate Federal agencies regarding implementation of such emergency measures.
- "(4) APPLICATION.—An order for emergency measures under this subsection may apply to—
- 24 "(A) the Electric Reliability Organization;
- 25 "(B) a regional entity; or

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1	"(C) any owner, user, or operator of the
2	bulk-power system or of defense critical electric
3	infrastructure within the United States.
4	"(5) DISCONTINUANCE.—The Commission shall
5	issue an order discontinuing any emergency meas-
6	ures ordered under this subsection, effective not
7	later than 30 days after the earliest of the following:
8	"(A) The date upon which the President
9	issues and provides to the Commission (either
10	directly or through the Secretary) a written di-
11	rective or determination that the grid security
12	threat identified under paragraph (1) no longer
13	exists.
14	"(B) The date upon which the Commission
15	issues a written determination that the emer-
16	gency measures are no longer needed to address
17	the grid security threat identified under para-
18	graph (1), including by means of Commission
19	approval of a reliability standard under section
20	215 that the Commission determines adequately
21	addresses such threat.
22	"(C) The date that is 1 year after the
23	issuance of an order under paragraph (1).
24	"(6) Cost recovery.—If the Commission de-
25	termines that owners operators or users of the

bulk-power system or of defense critical electric in-frastructure have incurred substantial costs to com-ply with an order under this subsection or subsection (c) and that such costs were prudently incurred and cannot reasonably be recovered through regulated rates or market prices for the electric energy or services sold by such owners, operators, or users, the Commission shall, after notice and an opportunity for comment, establish a mechanism that permits such owners, operators, or users to recover such costs.

12 "(c) Measures To Address Grid Security 13 Vulnerabilities.—

"(1) Commission authority.—If the Commission, in consultation with appropriate Federal agencies, identifies a grid security vulnerability that the Commission determines has not adequately been addressed through a reliability standard developed and approved under section 215, the Commission shall, after notice and opportunity for comment and after consultation with the Secretary, other appropriate Federal agencies, and appropriate governmental authorities in Canada and Mexico, promulgate a rule or issue an order requiring implementation, by any owner, operator, or user of the bulk-power system in

the United States, of measures to protect the bulkpower system against such vulnerability. Any such
rule or order shall include a protection plan, including automated hardware-based solutions. Before promulgating a rule or issuing an order under this
paragraph, the Commission shall, to the extent practicable in light of the urgency of the need for action
to address the grid security vulnerability, request
and consider recommendations from the Electric Reliability Organization regarding such rule or order.
The Commission may establish an appropriate deadline for the submission of such recommendations.

"(2) Rescission.—The Commission shall approve a reliability standard developed under section 215 that addresses a grid security vulnerability that is the subject of a rule or order under paragraph (1), unless the Commission determines that such reliability standard does not adequately protect against such vulnerability or otherwise does not satisfy the requirements of section 215. Upon such approval, the Commission shall rescind the rule promulgated or order issued under paragraph (1) addressing such vulnerability, effective upon the effective date of the newly approved reliability standard.

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"(3) Geomagnetic storms and electro-MAGNETIC PULSE.—Not later than 6 months after the date of enactment of this section, the Commission shall, after notice and an opportunity for comment and after consultation with the Secretary and other appropriate Federal agencies, issue an order directing the Electric Reliability Organization to submit to the Commission for approval under section 215, not later than 6 months after the issuance of such order, reliability standards adequate to protect the bulk-power system from any reasonably foreseeable geomagnetic storm or electromagnetic pulse event. The Commission's order shall specify the nature and magnitude of the reasonably foreseeable events against which such standards must protect. Such standards shall appropriately balance the risks the bulk-power system associated with such events, including any regional variation in such risks, and the costs of mitigating such risks. If the Commission determines that the reliability standards submitted by the Electric Reliability Organization pursuant to this paragraph are inadequate, the Commission shall promulgate a rule or issue an order adequate to protect the bulk-power system from geomagnetic storms or electromagnetic pulse as required under paragraph (1).

"(4) Large transformer availability.— Not later than 1 year after the date of enactment of this section, the Commission shall, after notice and an opportunity for comment and after consultation with the Secretary and other appropriate Federal agencies, issue an order directing the Electric Reliability Organization to submit to the Commission for approval under section 215, not later than 1 year after the issuance of such order, reliability standards addressing availability of large transformers. Such standards shall require entities that own or operate large transformers to ensure, individually or jointly, adequate availability of large transformers to promptly restore the reliable operation of the bulk-power system in the event that any such transformer is destroyed or disabled as a result of a geomagnetic storm event or electromagnetic pulse event. The Commission's order shall specify the nature and magnitude of the reasonably foreseeable events that shall provide the basis for such standards. Such standards shall—

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1	"(A) provide entities subject to the stand-
2	ards with the option of meeting such standards
3	individually or jointly; and
4	"(B) appropriately balance the risks asso-
5	ciated with a reasonably foreseeable event, in-
6	cluding any regional variation in such risks, and
7	the costs of ensuring adequate availability of
8	spare transformers.
9	"(d) Critical Defense Facilities.—
10	"(1) Designation.—Not later than 180 days
11	after the date of enactment of this section, the
12	President shall designate, in a written directive or
13	determination provided to the Commission, facilities
14	located in the United States (including the terri-
15	tories) that are—
16	"(A) critical to the defense of the United
17	States; and
18	"(B) vulnerable to a disruption of the sup-
19	ply of electric energy provided to such facility
20	by an external provider.
21	The number of facilities designated by such directive
22	or determination shall not exceed 100. The Presi-
23	dent may periodically revise the list of designated fa-
24	cilities through a subsequent written directive or de-
25	termination provided to the Commission, provided

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that the total number of designated facilities at any time shall not exceed 100.

"(2) Commission Authority.—If the Commission identifies a defense critical electric infrastructure vulnerability that the Commission, in consultation with owners and operators of any facility or facilities designated by the President pursuant to paragraph (1), determines has not adequately been addressed through measures undertaken by owners or operators of defense critical electric infrastructure, the Commission shall, after notice and an opportunity for comment and after consultation with the Secretary and other appropriate Federal agencies, promulgate a rule or issue an order requiring implementation, by any owner or operator of defense critical electric infrastructure, of measures to protect the defense critical electric infrastructure against such vulnerability. The Commission shall exempt from any such rule or order any specific defense critical electric infrastructure that the Commission determines already has been adequately protected against the identified vulnerability. The Commission shall make any such determination in consultation with the owner or operator of the facility designated

1	by the President pursuant to paragraph (1) that re-
2	lies upon such defense critical electric infrastructure.
3	"(3) Cost recovery.—An owner or operator
4	of defense critical electric infrastructure shall be re-
5	quired to take measures under paragraph (2) only to
6	the extent that the owners or operators of a facility
7	or facilities designated by the President pursuant to
8	paragraph (1) that rely upon such infrastructure
9	agree to bear the full incremental costs of compli-
10	ance with a rule promulgated or order issued under
11	paragraph (2).
12	"(e) Protection of Information.—
13	"(1) Prohibition of public disclosure of
14	PROTECTED INFORMATION.—Protected information
15	shall—
16	"(A) be exempt from disclosure under sec-
17	tion 552(b)(3) of title 5, United States Code;
18	and
19	"(B) not be made available pursuant to
20	any State, local, or tribal law requiring disclo-
21	sure of information or records.
22	"(2) Information sharing.—
23	"(A) In General.—Consistent with the
24	Controlled Unclassified Information framework
25	established by the President, the Commission

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shall promulgate such regulations and issue such orders as necessary to designate protected information and to prohibit the unauthorized disclosure of such protected information.

"(B) Sharing of protected informa-TION.—The regulations promulgated and orders issued pursuant to subparagraph (A) shall provide standards for and facilitate the appropriate sharing of protected information with, between, and by Federal, State, local, and tribal authorities, the Electric Reliability Organization, regional entities, and owners, operators, and users of the bulk-power system in the United States and of defense critical electric infrastructure. In promulgating such regulations and issuing such orders, the Commission shall take account of the role of State commissions in reviewing the prudence and cost of investments within their respective jurisdictions. The Commission shall consult with appropriate Canadian and Mexican authorities to develop protocols for the sharing of protected information with, between, and by appropriate Canadian and Mexican authorities and owners, operators, and

- 1 users of the bulk-power system outside the 2 United States.
 - "(3) Submission of information to con-GRESS.—Nothing in this section shall permit or authorize the withholding of information from Congress, any committee or subcommittee thereof, or the Comptroller General.
 - "(4) DISCLOSURE OF NONPROTECTED INFOR-MATION.—In implementing this section, the Commission shall protect from disclosure only the minimum amount of information necessary to protect the reliability of the bulk-power system and of defense critical electric infrastructure. The Commission shall segregate protected information within documents and electronic communications, wherever feasible, to facilitate disclosure of information that is not designated as protected information.
 - "(5) Duration of Designation.—Information may not be designated as protected information for longer than 5 years, unless specifically redesignated by the Commission.
 - "(6) Removal of Designation.—The Commission may remove the designation of protected information, in whole or in part, from a document or electronic communication if the unauthorized disclo-

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sure of such information could no longer be used to impair the reliability of the bulk-power system or of defense critical electric infrastructure.

"(7) Judicial review of designations.— Notwithstanding subsection (f) of this section or section 313, a person or entity may seek judicial review of a determination by the Commission concerning the designation of protected information under this subsection exclusively in the district court of the United States in the district in which the complainant resides, or has his principal place of business, or in the District of Columbia. In such a case the court shall determine the matter de novo, and may examine the contents of documents or electronic communications designated as protected information in camera to determine whether such documents or any part thereof were improperly designated as protected information. The burden is on the Commission to sustain its designation.

"(f) Judicial Review.—The Commission shall act expeditiously to resolve all applications for rehearing of orders issued pursuant to this section that are filed under section 313(a). Any party seeking judicial review pursuant to section 313 of an order issued under this section may

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- 1 obtain such review only in the United States Court of Ap-
- 2 peals for the District of Columbia Circuit.
- 3 "(g) Provision of Assistance to Industry in
- 4 Meeting Grid Security Protection Needs.—
- 5 "(1) Expertise and resources.—The Sec-6 retary shall establish a program, in consultation with 7 other appropriate Federal agencies, to develop tech-8 nical expertise in the protection of systems for the 9 generation, transmission, and distribution of electric 10 energy against geomagnetic storms or malicious acts 11 using electromagnetic pulse that would pose a sub-12 stantial risk of disruption to the operation of those 13 electronic devices or communications networks, in-14 cluding hardware, software, and data, that are es-15 sential to the reliability of such systems. Such program shall include the identification and develop-16 17 ment of appropriate technical and electronic re-18 sources, including hardware, software, and system 19 equipment.
 - "(2) Sharing expertise.—As appropriate, the Secretary shall offer to share technical expertise developed under the program under paragraph (1), through consultation and assistance, with owners, operators, or users of systems for the generation, transmission, or distribution of electric energy lo-

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cated in the United States and with State commissions. In offering such support, the Secretary shall assign higher priority to systems serving facilities designated by the President pursuant to subsection (d)(1) and other critical-infrastructure facilities, which the Secretary shall identify in consultation with the Commission and other appropriate Federal agencies.

"(3) Security clearances and communica-TION.—The Secretary shall facilitate and, to the extent practicable, expedite the acquisition of adequate security clearances by key personnel of any entity subject to the requirements of this section to enable optimum communication with Federal agencies regarding grid security threats, grid security vulnerabilities, and defense critical electric infrastructure vulnerabilities. The Secretary, the Commission, and other appropriate Federal agencies shall, to the extent practicable and consistent with their obligations to protect classified and protected information, share timely actionable information regarding grid security threats, grid security vulnerabilities, and defense critical electric infrastructure vulnerabilities with appropriate key personnel of owners, operators, and users of the bulk-

- 1 power system and of defense critical electric infra-
- 2 structure.
- 3 "(h) CERTAIN FEDERAL ENTITIES.—For the 11-year
- 4 period commencing on the date of enactment of this sec-
- 5 tion, the Tennessee Valley Authority and the Bonneville
- 6 Power Administration shall be exempt from any require-
- 7 ment under subsection (b) or (c).".
- 8 (b) Conforming Amendments.—
- 9 (1) JURISDICTION.—Section 201(b)(2) of the
- Federal Power Act (16 U.S.C. 824(b)(2)) is amend-
- ed by inserting "215A," after "215," each place it
- 12 appears.
- 13 (2) Public utility.—Section 201(e) of the
- 14 Federal Power Act (16 U.S.C. 824(e)) is amended
- 15 by inserting "215A," after "215,".
- 16 SEC. 4. BUDGETARY COMPLIANCE.
- 17 The budgetary effects of this Act, for the purpose of
- 18 complying with the Statutory Pay-As-You-Go Act of 2010,
- 19 shall be determined by reference to the latest statement
- 20 titled "Budgetary Effects of PAYGO Legislation" for this
- 21 Act, submitted for printing in the Congressional Record
- 22 by the Chairman of the House Budget Committee, pro-
- 23 vided that such statement has been submitted prior to the
- 24 vote on passage.