			(Original Signature of Member)
112TH CONGRESS	Н	R	

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

Mr. Franks of Arizona introd	duced the	following	bill; w	vhich was	referred	to
the Committee on					_	

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,
- 3 SECTION 1. SHORT TITLE.
- 4 This Act may be cited as the "Secure High-voltage
- 5 Infrastructure for Electricity from Lethal Damage Act"
- 6 or the "SHIELD Act".

1 SEC. 2. FINDINGS.

2 The Congress makes the following findings: 3 (1) According to the Report of the Commission 4 to Assess the Threat to the United States from 5 Electromagnetic Pulse Attack (in this Act referred 6 to as the "EMP Commission Report"), the society 7 and economy of the United States are "critically de-8 pendent upon the availability of electricity.". 9 (2) According to the EMP Commission Report, 10 "continued electrical supply is necessary for sus-11 taining water supplies, production and distribution 12 of food, fuel, communications, and everything else 13 that is part of our economy". 14 (3) According to the EMP Commission Report, 15 "contemporary U.S. society is not structured, nor 16 does it have the means, to provide for the needs of 17 nearly 300 million Americans without electricity.". 18 (4) According to the EMP Commission Report, 19 due to the existing electrical system operating at or 20 near its physical capacity, "a relatively modest upset 21 to the system can cause functional collapse.". 22 (5) According to the EMP Commission Report, 23 electromagnetic pulse (in this Act referred to as 24 "EMP") is a threat to the overall electrical power 25 system.

1	(6) According to the EMP Commission Report
2	EMP occurs both naturally, such as geomagnetic
3	storms, and via manmade devices.
4	(7) According to the EMP Commission Report
5	while the electric infrastructure "has a degree of du-
6	rability againstthe failure of one or a small num-
7	ber of [electric] components," the current strategy
8	for recovery leaves the United States ill-prepared to
9	respond effectively to an EMP attack that would po-
10	tentially result in damage to vast numbers of compo-
11	nents nearly simultaneously over an unprecedented
12	geographic scale.
13	(8) According to the EMP Commission Report
14	EMP "may couple ultimately unmanageable currents
15	and voltages into an electrical system routinely oper-
16	ated with little margin and cause the collapse of
17	large portions of the electrical system.".
18	(9) According to the EMP Commission Report
19	a collapse of large portions of the electrical system
20	will result in significant periods of power-outage and
21	"restoration from collapse or loss of significant por-
22	tions of the system [will be] exceedingly difficult."
23	(10) According to the EMP Commission Re-
24	port, "should the electrical power system be lost for

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

1	United States (including the territories) used for the
2	generation, transmission, or distribution of electric
3	energy that—
4	"(A) is not part of the bulk-power system;
5	and
6	"(B) serves a facility designated by the
7	President pursuant to subsection (d)(1), but is
8	not owned or operated by the owner or operator
9	of such facility.
10	"(3) Defense critical electric infra-
11	STRUCTURE VULNERABILITY.—The term 'defense
12	critical electric infrastructure vulnerability' means a
13	weakness in defense critical electric infrastructure
14	that, in the event of a malicious act using an electro-
15	magnetic pulse, would pose a substantial risk of dis-
16	ruption of those electrical or electronic devices or
17	communications networks, including hardware, soft-
18	ware, and data, that are essential to the reliability
19	of defense critical electric infrastructure.
20	"(4) Electromagnetic pulse.—The term
21	'electromagnetic pulse' means 1 or more pulses of
22	electromagnetic energy generated or emitted by a de-
23	vice capable of disabling, disrupting, or destroying
24	electronic equipment by means of such a pulse.

1	"(5) Geomagnetic Storm.—The term 'geo-
2	magnetic storm' means a temporary disturbance of
3	the Earth's magnetic field resulting from solar activ-
4	ity.
5	"(6) GRID SECURITY THREAT.—The term 'grid
6	security threat' means a substantial likelihood of—
7	"(A) a malicious act using an electro-
8	magnetic pulse, or a geomagnetic storm event,
9	that could disrupt the operation of those elec-
10	trical or electronic devices or communications
11	networks, including hardware, software, and
12	data, that are essential to the reliability of the
13	bulk-power system or of defense critical electric
14	infrastructure; and
15	"(B) disruption of the operation of such
16	devices or networks, with significant adverse ef-
17	fects on the reliability of the bulk-power system
18	or of defense critical electric infrastructure, as
19	a result of such act or event.
20	"(7) Grid Security Vulnerability.—The
21	term 'grid security vulnerability' means a weakness
22	that, in the event of a malicious act using an electro-
23	magnetic pulse, would pose a substantial risk of dis-
24	ruption to the operation of those electrical or elec-
25	tronic devices or communications networks, includ-

1	ing hardware, software, and data, that are essential
2	to the reliability of the bulk-power system.
3	"(8) Large transformer.—The term 'large
4	transformer' means an electric transformer that is
5	part of the bulk-power system.
6	"(9) PROTECTED INFORMATION.—The term
7	'protected information' means information, other
8	than classified national security information, des-
9	ignated as protected information by the Commission
10	under subsection (e)(2)—
11	"(A) that was developed or submitted in
12	connection with the implementation of this sec-
13	tion;
14	"(B) that specifically discusses grid secu-
15	rity threats, grid security vulnerabilities, de-
16	fense critical electric infrastructure
17	vulnerabilities, or plans, procedures, or meas-
18	ures to address such threats or vulnerabilities;
19	and
20	"(C) the unauthorized disclosure of which
21	could be used in a malicious manner to impair
22	the reliability of the bulk-power system or of
23	defense critical electric infrastructure.
24	"(10) Secretary.—The term 'Secretary'
25	means the Secretary of Energy.

1	"(11) Security.—The definition of 'security'
2	in section 3(16) shall not apply to the provisions in
3	this section.
4	"(b) Emergency Response Measures.—
5	"(1) Authority to address grid security
6	THREATS.—Whenever the President issues and pro-
7	vides to the Commission (either directly or through
8	the Secretary) a written directive or determination
9	identifying an imminent grid security threat, the
10	Commission may, with or without notice, hearing, or
11	report, issue such orders for emergency measures as
12	are necessary in its judgment to protect the reli-
13	ability of the bulk-power system or of defense critical
14	electric infrastructure against such threat. As soon
15	as practicable, but not later than 180 days after the
16	date of enactment of this section, the Commission
17	shall, after notice and opportunity for comment, es-
18	tablish rules of procedure that ensure that such au-
19	thority can be exercised expeditiously.
20	"(2) Notification of congress.—Whenever
21	the President issues and provides to the Commission
22	(either directly or through the Secretary) a written
23	directive or determination under paragraph (1), the
24	President (or the Secretary, as the case may be)
25	shall promptly notify congressional committees of

1	relevant jurisdiction, including the Committee on
2	Energy and Commerce of the House of Representa-
3	tives and the Committee on Energy and Natural Re-
4	sources of the Senate, of the contents of, and jus-
5	tification for, such directive or determination.
6	"(3) Consultation.—Before issuing an order
7	for emergency measures under paragraph (1), the
8	Commission shall, to the extent practicable in light
9	of the nature of the grid security threat and the ur-
10	gency of the need for such emergency measures, con-
11	sult with appropriate governmental authorities in
12	Canada and Mexico, entities described in paragraph
13	(4), the Secretary, and other appropriate Federal
14	agencies regarding implementation of such emer-
15	gency measures.
16	"(4) Application.—An order for emergency
17	measures under this subsection may apply to—
18	"(A) the Electric Reliability Organization;
19	"(B) a regional entity; or
20	"(C) any owner, user, or operator of the
21	bulk-power system or of defense critical electric
22	infrastructure within the United States.
23	"(5) DISCONTINUANCE.—The Commission shall
24	issue an order discontinuing any emergency meas-

1	ures ordered under this subsection, effective not
2	later than 30 days after the earliest of the following:
3	"(A) The date upon which the President
4	issues and provides to the Commission (either
5	directly or through the Secretary) a written di-
6	rective or determination that the grid security
7	threat identified under paragraph (1) no longer
8	exists.
9	"(B) The date upon which the Commission
10	issues a written determination that the emer-
11	gency measures are no longer needed to address
12	the grid security threat identified under para-
13	graph (1), including by means of Commission
14	approval of a reliability standard under section
15	215 that the Commission determines adequately
16	addresses such threat.
17	"(C) The date that is 1 year after the
18	issuance of an order under paragraph (1).
19	"(6) Cost recovery.—If the Commission de-
20	termines that owners, operators, or users of the
21	bulk-power system or of defense critical electric in-
22	frastructure have incurred substantial costs to com-
23	ply with an order under this subsection or subsection
24	(c) and that such costs were prudently incurred and
25	cannot reasonably be recovered through regulated

1	rates or market prices for the electric energy or
2	services sold by such owners, operators, or users, the
3	Commission shall, after notice and an opportunity
4	for comment, establish a mechanism that permits
5	such owners, operators, or users to recover such
6	costs.
7	"(c) Measures to Address Grid Security
8	Vulnerabilities.—
9	"(1) Commission authority.—If the Commis-
10	sion, in consultation with appropriate Federal agen-
11	cies, identifies a grid security vulnerability that the
12	Commission determines has not adequately been ad-
13	dressed through a reliability standard developed and
14	approved under section 215, the Commission shall,
15	after notice and opportunity for comment and after
16	consultation with the Secretary, other appropriate
17	Federal agencies, and appropriate governmental au-
18	thorities in Canada and Mexico, promulgate a rule
19	or issue an order requiring implementation, by any
20	owner, operator, or user of the bulk-power system in
21	the United States, of measures to protect the bulk-
22	power system against such vulnerability. Any such
23	rule or order shall include an automated protection
24	plan, including hardware-based solutions. Before
25	promulgating a rule or issuing an order under this

1 paragraph, the Commission shall, to the extent prac-2 ticable in light of the urgency of the need for action 3 to address the grid security vulnerability, request 4 and consider recommendations from the Electric Re-5 liability Organization regarding such rule or order. 6 The Commission may establish an appropriate dead-7 line for the submission of such recommendations. 8 "(2) Rescission.—The Commission shall ap-9 prove a reliability standard developed under section 10 215 that addresses a grid security vulnerability that 11 is the subject of a rule or order under paragraph 12 (1), unless the Commission determines that such re-13 liability standard does not adequately protect against 14 such vulnerability or otherwise does not satisfy the 15 requirements of section 215. Upon such approval, 16 the Commission shall rescind the rule promulgated 17 or order issued under paragraph (1) addressing such 18 vulnerability, effective upon the effective date of the 19 newly approved reliability standard. 20 "(3) Geomagnetic storms and electro-MAGNETIC PULSE.—Not later than 6 months after 21 22 the date of enactment of this section, the Commis-23 sion shall, after notice and an opportunity for com-24 ment and after consultation with the Secretary and

other appropriate Federal agencies, issue an order

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1 directing the Electric Reliability Organization to 2 submit to the Commission for approval under section 3 215, not later than 6 months after the issuance of 4 such order, reliability standards adequate to protect 5 the bulk-power system from any reasonably foresee-6 able geomagnetic storm or electromagnetic pulse 7 event. The Commission's order shall specify the na-8 ture and magnitude of the reasonably foreseeable 9 events against which such standards must protect. 10 Such standards shall appropriately balance the risks 11 to the bulk-power system associated with such events, including any regional variation in such 12 risks, and the costs of mitigating such risks. If the 13 14 Commission determines that the reliability standards 15 submitted by the Electric Reliability Organization 16 pursuant to this paragraph are inadequate, the 17 Commission shall promulgate a rule or issue an 18 order adequate to protect the bulk-power system 19 from geomagnetic storms or electromagnetic pulse as 20 required under paragraph (1). 21 "(4) Large transformer availability.— 22 Not later than 1 year after the date of enactment 23 of this section, the Commission shall, after notice 24 and an opportunity for comment and after consulta-25 tion with the Secretary and other appropriate Fed-

1	eral agencies, issue an order directing the Electric
2	Reliability Organization to submit to the Commis-
3	sion for approval under section 215, not later than
4	1 year after the issuance of such order, reliability
5	standards addressing availability of large trans-
6	formers. Such standards shall require entities that
7	own or operate large transformers to ensure, individ-
8	ually or jointly, adequate availability of large trans-
9	formers to promptly restore the reliable operation of
10	the bulk-power system in the event that any such
11	transformer is destroyed or disabled as a result of
12	a geomagnetic storm event or electromagnetic pulse
13	event. The Commission's order shall specify the na-
14	ture and magnitude of the reasonably foreseeable
15	events that shall provide the basis for such stand-
16	ards. Such standards shall—
17	"(A) provide entities subject to the stand-
18	ards with the option of meeting such standards
19	individually or jointly; and
20	"(B) appropriately balance the risks asso-
21	ciated with a reasonably foreseeable event, in-
22	cluding any regional variation in such risks, and
23	the costs of ensuring adequate availability of
24	spare transformers.
25	"(d) Critical Defense Facilities.—

1	"(1) Designation.—Not later than 180 days
2	after the date of enactment of this section, the
3	President shall designate, in a written directive or
4	determination provided to the Commission, facilities
5	located in the United States (including the terri-
6	tories) that are—
7	"(A) critical to the defense of the United
8	States; and
9	"(B) vulnerable to a disruption of the sup-
10	ply of electric energy provided to such facility
11	by an external provider.
12	The number of facilities designated by such directive
13	or determination shall not exceed 100. The Presi-
14	dent may periodically revise the list of designated fa-
15	cilities through a subsequent written directive or de-
16	termination provided to the Commission, provided
17	that the total number of designated facilities at any
18	time shall not exceed 100.
19	"(2) Commission authority.—If the Commis-
20	sion identifies a defense critical electric infrastruc-
21	ture vulnerability that the Commission, in consulta-
22	tion with owners and operators of any facility or fa-
23	cilities designated by the President pursuant to
24	paragraph (1), determines has not adequately been
25	addressed through measures undertaken by owners

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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 by the President pursuant to paragraph (1) that relies upon such defense critical electric infrastructure. "(3) Cost recovery.—An owner or operator of defense critical electric infrastructure shall be required to take measures under paragraph (2) only to the extent that the owners or operators of a facility or facilities designated by the President pursuant to paragraph (1) that rely upon such infrastructure agree to bear the full incremental costs of compli-

1	ance with a rule promulgated or order issued under
2	paragraph (2).
3	"(e) Protection of Information.—
4	"(1) Prohibition of public disclosure of
5	PROTECTED INFORMATION.—Protected information
6	shall—
7	"(A) be exempt from disclosure under sec-
8	tion 552(b)(3) of title 5, United States Code;
9	and
10	"(B) not be made available pursuant to
11	any State, local, or tribal law requiring disclo-
12	sure of information or records.
13	"(2) Information sharing.—
14	"(A) IN GENERAL.—Consistent with the
15	Controlled Unclassified Information framework
16	established by the President, the Commission
17	shall promulgate such regulations and issue
18	such orders as necessary to designate protected
19	information and to prohibit the unauthorized
20	disclosure of such protected information.
21	"(B) Sharing of protected informa-
22	TION.—The regulations promulgated and orders
23	issued pursuant to subparagraph (A) shall pro-
24	vide standards for and facilitate the appropriate
25	sharing of protected information with, between,

1	and by Federal, State, local, and tribal authori-
2	ties, the Electric Reliability Organization, re-
3	gional entities, and owners, operators, and
4	users of the bulk-power system in the United
5	States and of defense critical electric infrastruc-
6	ture. In promulgating such regulations and
7	issuing such orders, the Commission shall take
8	account of the role of State commissions in re-
9	viewing the prudence and cost of investments
10	within their respective jurisdictions. The Com-
11	mission shall consult with appropriate Canadian
12	and Mexican authorities to develop protocols for
13	the sharing of protected information with, be-
14	tween, and by appropriate Canadian and Mexi-
15	can authorities and owners, operators, and
16	users of the bulk-power system outside the
17	United States.
18	"(3) Submission of information to con-
19	GRESS.—Nothing in this section shall permit or au-
20	thorize the withholding of information from Con-
21	gress, any committee or subcommittee thereof, or
22	the Comptroller General.
23	"(4) Disclosure of nonprotected infor-
24	MATION.—In implementing this section, the Com-
25	mission shall protect from disclosure only the min-

1 imum amount of information necessary to protect 2 the reliability of the bulk-power system and of de-3 fense critical electric infrastructure. The Commission shall segregate protected information within docu-5 ments and electronic communications, wherever fea-6 sible, to facilitate disclosure of information that is 7 not designated as protected information. 8 "(5) Duration of Designation.—Informa-9 tion may not be designated as protected information 10 for longer than 5 years, unless specifically redesig-11 nated by the Commission. 12 "(6) Removal of Designation.—The Com-13 mission may remove the designation of protected in-14 formation, in whole or in part, from a document or 15 electronic communication if the unauthorized disclosure of such information could no longer be used to 16 17 impair the reliability of the bulk-power system or of 18 defense critical electric infrastructure. 19 "(7) Judicial review of designations.— 20 Notwithstanding subsection (f) of this section or sec-21 tion 313, a person or entity may seek judicial review 22 of a determination by the Commission concerning 23 the designation of protected information under this 24 subsection exclusively in the district court of the

United States in the district in which the complain-

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1	ant resides, or has his principal place of business, or
2	in the District of Columbia. In such a case the court
3	shall determine the matter de novo, and may exam-
4	ine the contents of documents or electronic commu-
5	nications designated as protected information in
6	camera to determine whether such documents or any
7	part thereof were improperly designated as protected
8	information. The burden is on the Commission to
9	sustain its designation.
10	"(f) Judicial Review.—The Commission shall act
11	expeditiously to resolve all applications for rehearing of
12	orders issued pursuant to this section that are filed under
13	section 313(a). Any party seeking judicial review pursuant
14	to section 313 of an order issued under this section may
15	obtain such review only in the United States Court of Ap-
16	peals for the District of Columbia Circuit.
17	"(g) Provision of Assistance to Industry in
18	MEETING GRID SECURITY PROTECTION NEEDS.—
19	"(1) Expertise and resources.—The Sec-
20	retary shall establish a program, in consultation with
21	other appropriate Federal agencies, to develop tech-
22	nical expertise in the protection of systems for the
23	generation, transmission, and distribution of electric
24	energy against geomagnetic storms or malicious acts
25	using electromagnetic pulse that would pose a sub-

1 stantial risk of disruption to the operation of those 2 electronic devices or communications networks, in-3 cluding hardware, software, and data, that are es-4 sential to the reliability of such systems. Such pro-5 gram shall include the identification and develop-6 ment of appropriate technical and electronic re-7 sources, including hardware, software, and system equipment. 8 9 "(2) SHARING EXPERTISE.—As appropriate, 10 the Secretary shall offer to share technical expertise 11 developed under the program under paragraph (1), 12 through consultation and assistance, with owners, 13 operators, or users of systems for the generation, 14 transmission, or distribution of electric energy lo-15 cated in the United States and with State commis-16 sions. In offering such support, the Secretary shall 17 assign higher priority to systems serving facilities 18 designated by the President pursuant to subsection 19 (d)(1) and other critical-infrastructure facilities, 20 which the Secretary shall identify in consultation 21 with the Commission and other appropriate Federal 22 agencies. 23 "(3) SECURITY CLEARANCES AND COMMUNICA-24 TION.—The Secretary shall facilitate and, to the ex-

tent practicable, expedite the acquisition of adequate

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1	security clearances by key personnel of any entity
2	subject to the requirements of this section to enable
3	optimum communication with Federal agencies re-
4	garding grid security threats, grid security
5	vulnerabilities, and defense critical electric infra-
6	structure vulnerabilities. The Secretary, the Com-
7	mission, and other appropriate Federal agencies
8	shall, to the extent practicable and consistent with
9	their obligations to protect classified and protected
10	information, share timely actionable information re-
11	garding grid security threats, grid security
12	vulnerabilities, and defense critical electric infra-
13	structure vulnerabilities with appropriate key per-
14	sonnel of owners, operators, and users of the bulk-
15	power system and of defense critical electric infra-
16	structure.
17	"(h) CERTAIN FEDERAL ENTITIES.—For the 11-year
18	period commencing on the date of enactment of this sec-
19	tion, the Tennessee Valley Authority and the Bonneville
20	Power Administration shall be exempt from any require-
21	ment under subsection (b) or (c).".
22	(b) Conforming Amendments.—
23	(1) Jurisdiction.—Section 201(b)(2) of the
24	Federal Power Act (16 U.S.C. 824(b)(2)) is amend-

- 1 ed by inserting "215A," after "215," each place it
- 2 appears.
- 3 (2) Public utility.—Section 201(e) of the
- 4 Federal Power Act (16 U.S.C. 824(e)) is amended
- 5 by inserting "215A," after "215,".

6 SEC. 4. BUDGETARY COMPLIANCE.

- 7 The budgetary effects of this Act, for the purpose of
- 8 complying with the Statutory Pay-As-You-Go Act of 2010,
- 9 shall be determined by reference to the latest statement
- 10 titled "Budgetary Effects of PAYGO Legislation" for this
- 11 Act, submitted for printing in the Congressional Record
- 12 by the Chairman of the House Budget Committee, pro-
- 13 vided that such statement has been submitted prior to the
- 14 vote on passage.