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			(Original Signature of Member)
113TH CONGRESS	TT	D	

1 1st Session

П. К.

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	uced the	following	bill;	which	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-
- 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
- Infrastructure for Electricity from Lethal Damage Act"
- 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 against the failure of one or a small
7	number of [electric] components," the current strat-
8	egy for recovery leaves the United States ill-prepared
9	to respond effectively to an EMP attack that would
10	potentially result in damage to vast numbers of com-
11	ponents nearly simultaneously over an unprece-
12	dented 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 time the consequences
2	are 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	TIN .
	ABILITY ORGANIZATION; REGIONAL ENTITY.—The
19	ABILITY ORGANIZATION; REGIONAL ENTITY.—The terms 'bulk-power system', 'Electric Reliability Or-
1920	
	terms 'bulk-power system', 'Electric Reliability Or-
20	terms 'bulk-power system', 'Electric Reliability Organization', and 'regional entity' have the meanings
2021	terms 'bulk-power system', 'Electric Reliability Organization', and 'regional entity' have the meanings given such terms in paragraphs (1), (2), and (7) of
202122	terms 'bulk-power system', 'Electric Reliability Organization', and 'regional entity' have the meanings given such terms in paragraphs (1), (2), and (7) of section 215(a), respectively.

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 the Secretary, other appropriate Federal
12	agencies, appropriate governmental authorities in
13	Canada and Mexico, the Electric Reliability Organi-
14	zation, and entities described in paragraph (4).
15	"(4) Application.—An order for emergency
16	measures under this subsection may apply to—
17	"(A) a regional entity; or
18	"(B) any owner, user, or operator of the
19	bulk-power system or of defense critical electric
20	infrastructure within the United States.
21	"(5) DISCONTINUANCE.—The Commission shall
22	issue an order discontinuing any emergency meas-
23	ures ordered under this subsection, effective not
24	later than 30 days after the earliest of the following:

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

1	Commission shall, after notice and an opportunity
2	for comment, establish a mechanism that permits
3	such owners, operators, or users to recover such
4	costs.
5	"(c) Measures to Address Grid Security
6	Vulnerabilities.—
7	"(1) Commission authority.—
8	"(A) RELIABILITY STANDARDS.—If the
9	Commission, in consultation with appropriate
10	Federal agencies, identifies a grid security vul-
11	nerability that the Commission determines has
12	not adequately been addressed through a reli-
13	ability standard developed and approved under
14	section 215, the Commission shall, after notice
15	and opportunity for comment and after con-
16	sultation with the Secretary, other appropriate
17	Federal agencies, and appropriate governmental
18	authorities in Canada and Mexico, issue an
19	order directing the Electric Reliability Organi-
20	zation to submit to the Commission for ap-
21	proval under section 215, not later than 30
22	days after the issuance of such order, a reli-
23	ability standard requiring implementation, by
24	any owner, operator, or user of the bulk-power
25	system in the United States, of measures to

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protect the bulk-power system against such vulnerability. Any such standard shall include a protection plan, including automated hardware-based solutions. The Commission shall approve a reliability standard submitted pursuant to this subparagraph, 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.

"(B) Measures to address grid secu-RITY VULNERABILITIES.—If the Commission, after notice and opportunity for comment and after consultation with the Secretary, other appropriate Federal agencies, and appropriate governmental authorities in Canada and Mexico, determines that the reliability standard submitted by the Electric Reliability Organization to address a grid security vulnerability identified under subparagraph (A) does not adequately protect the bulk-power system against such vulnerability, the Commission shall promulgate a rule or issue an order requiring implementation, by any owner, operator, or user of the bulk-power system in the United States,

1 of measures to protect the bulk-power system 2 against such vulnerability. Any such rule or 3 order shall include a protection plan, including 4 automated hardware-based solutions. Before 5 promulgating a rule or issuing an order under 6 this subparagraph, the Commission shall, to the 7 extent practicable in light of the urgency of the 8 need for action to address the grid security vul-9 nerability, request and consider recommenda-10 tions from the Electric Reliability Organization 11 regarding such rule or order. The Commission 12 may establish an appropriate deadline for the 13 submission of such recommendations. 14 "(2) Rescission.—The Commission shall ap-15 prove a reliability standard developed under section 16 215 that addresses a grid security vulnerability that 17 is the subject of a rule or order under paragraph 18 (1)(B), unless the Commission determines that such 19 reliability standard does not adequately protect 20 against such vulnerability or otherwise does not sat-21 isfy the requirements of section 215. Upon such ap-22 proval, the Commission shall rescind the rule pro-

mulgated or order issued under paragraph (1)(B)

addressing such vulnerability, effective upon the ef-

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fective date of the newly approved reliability standard.

"(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, the costs of mitigating such risks, and the priorities and timing associated with implementation. If Commission determines that the reliability standards submitted by the Electric Reliability Organization pursuant to this paragraph are inad-

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equate, 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)(B).

"(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—

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	"(3) Submission of information to con-
4	GRESS.—Nothing in this section shall permit or au-
5	thorize the withholding of information from Con-
6	gress, any committee or subcommittee thereof, or
7	the Comptroller General.
8	"(4) Disclosure of nonprotected infor-
9	MATION.—In implementing this section, the Com-
10	mission shall protect from disclosure only the min-
11	imum amount of information necessary to protect
12	the reliability of the bulk-power system and of de-
13	fense critical electric infrastructure. The Commission
14	shall segregate protected information within docu-
15	ments and electronic communications, wherever fea-
16	sible, to facilitate disclosure of information that is
17	not designated as protected information.
18	"(5) Duration of Designation.—Informa-
19	tion may not be designated as protected information
20	for longer than 5 years, unless specifically redesig-
21	nated by the Commission.
22	"(6) Removal of Designation.—The Com-
23	mission may remove the designation of protected in-
24	formation, in whole or in part, from a document or
25	electronic communication if the unauthorized disclo-

1 sure of such information could no longer be used to 2 impair the reliability of the bulk-power system or of defense critical electric infrastructure. 3 4 "(7) Judicial review of designations.— 5 Notwithstanding subsection (f) of this section or sec-6 tion 313, a person or entity may seek judicial review 7 of a determination by the Commission concerning 8 the designation of protected information under this 9 subsection exclusively in the district court of the 10 United States in the district in which the complain-11 ant resides, or has his principal place of business, or 12 in the District of Columbia. In such a case the court 13 shall determine the matter de novo, and may exam-14 ine the contents of documents or electronic commu-15 nications designated as protected information in 16 camera to determine whether such documents or any 17 part thereof were improperly designated as protected 18 information. The burden is on the Commission to 19 sustain its designation. 20 "(f) Judicial Review.—The Commission shall act 21 expeditiously to resolve all applications for rehearing of 22 orders issued pursuant to this section that are filed under 23 section 313(a). Any party seeking judicial review pursuant to section 313 of an order issued under this section may

obtain such review only in the United States Court of Appeals for the District of Columbia Circuit. 3 "(g) Provision of Assistance to Industry in MEETING GRID SECURITY PROTECTION NEEDS.— 5 "(1) Expertise and resources.—The Sec-6 retary shall establish a program, in consultation with other appropriate Federal agencies, to develop tech-7 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. 20 "(2) Sharing expertise.—As appropriate, 21 the Secretary shall offer to share technical expertise 22 developed under the program under paragraph (1), 23 through consultation and assistance, with owners, 24 operators, or users of systems for the generation, 25 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 (b) Conforming Amendments.— 4 (1) JURISDICTION.—Section 201(b)(2) of the 5 Federal Power Act (16 U.S.C. 824(b)(2)) is amended by inserting "215A," after "215," each place it 6 7 appears. 8 (2) Public utility.—Section 201(e) of the 9 Federal Power Act (16 U.S.C. 824(e)) is amended by inserting "215A," after "215,". 10 SEC. 4. BUDGETARY COMPLIANCE. 12 The budgetary effects of this Act, for the purpose of 13 complying with the Statutory Pay-As-You-Go Act of 2010, shall be determined by reference to the latest statement 14 15 titled "Budgetary Effects of PAYGO Legislation" for this Act, submitted for printing in the Congressional Record 16 by the Chairman of the House Budget Committee, provided that such statement has been submitted prior to the

19 vote on passage.