

2017 HOUSE ENERGY AND NATURAL RESOURCES

HCR 3010

2017 HOUSE STANDING COMMITTEE MINUTES

Energy and Natural Resources Committee Coteau –A Room, State Capitol

HCR 3010
2/9/2017
28082

- Subcommittee
 Conference Committee

Committee Clerk Signature

Kathleen Davis

Explanation or reason for introduction of bill/resolution:

To undertake responsible measures to harden our commercial electrical grid against multiple serious threats

Minutes:

Attachment #1

Chairman Porter: Called the committee to order on HCR 3010.

Rep. Richard Anderson: I have a resolution (attachment #1) one of my constituents, Ken Sletten, brought up at the Republican convention and wanted it presented in front of the committee. His resolution basically is to hopefully get the federal government to be aware of cyber-attacks and electronic magnetic pulse in our power system. My understand it would just take a small amount of money to harden the grid to prevent a cyber-attack, especially an electric magnetic pulse.

Julie Fedorchek, ND PSC. Ken Sletten who is the mind behind all this information is in regular contact with the commission on this subject matter. He's spent a lot of time on it and we respect his analysis and opinion. It's an important issue and we stand in support and appreciation for this issue and we're constantly working on with the companies that we regulate.

Chairman Porter: Questions? Further testimony in support? Opposition?

Rep. Seibel: I move for a Do Pass on HCR 3010 and to be placed on the consent calendar.

Rep. Marschall: Second

Chairman Porter: All in favor? Opposed? Voice vote carries. Rep. Anderson is the carrier.

Date: 2-9-17

Roll Call Vote #: 1

2017 HOUSE STANDING COMMITTEE
ROLL CALL VOTES
BILL/RESOLUTION NO. HR3010

House Energy & Natural Resources Committee

Subcommittee

Amendment LC# or Description: _____

Recommendation

- Adopt Amendment
- Do Pass Do Not Pass Without Committee Recommendation
- As Amended Rerefer to Appropriations
- Place on Consent Calendar

Other Actions Reconsider _____

Motion Made By Rep Seibel Seconded By Rep Marschall

Representatives	Yes	No	Representatives	Yes	No
Chairman Porter			Rep. Lefor		
Vice Chairman Damschen			Rep. Marschall		
Rep. Anderson			Rep. Roers Jones		
Rep. Bosch			Rep. Ruby		
Rep. Devlin			Rep. Seibel		
Rep. Heinert					
Rep. Keiser			Rep. Mitskog		
			Rep. Mock		

voice vote carries

Total (Yes) _____ No _____

Absent _____

Floor Assignment Rep Anderson

If the vote is on an amendment, briefly indicate intent:

REPORT OF STANDING COMMITTEE

HCR 3010: Energy and Natural Resources Committee (Rep. Porter, Chairman)
recommends **DO PASS** and **BE PLACED ON THE CONSENT CALENDAR**
(13 YEAS, 0 NAYS, 1 ABSENT AND NOT VOTING). HCR 3010 was placed on the
Tenth order on the calendar.

2017 SENATE ENERGY AND NATURAL RESOURCES

HCR 3010

2017 SENATE STANDING COMMITTEE MINUTES

Energy and Natural Resources Committee
Fort Lincoln Room, State Capitol

HCR3010
3/9/2017
Job # 28960

- Subcommittee
 Conference Committee

Committee Clerk Signature



Explanation or reason for introduction of bill/resolution: Recognizing the efforts undertaken & the continued need for ND & the entire US to undertake responsible measures to harden our commercial electrical grid against multiple serious threats.

Minutes:

Attch#1-Ken Sletten

Chairwoman Unruh: Representative Dick Anderson, Dist 6: A constituent that is a scientist. He worked on the power grid. (see Attch#1 – by Ken Sletten)

Chairwoman Unruh: Any questions? Any more in support? Any opposed? Agencies?
Hearing closed.

Sen. Armstrong: I move a Do Pass

Sen. Cook: I second.

Chairwoman Unruh: Any discussion? Call the roll: YES 5 NO 1 -1-absent

HCR Passed. **Chairwoman Unruh** will carry the bill.

3/9/17

Date:
Roll Call Vote #: 1

2017 SENATE STANDING COMMITTEE
ROLL CALL VOTES
BILL/RESOLUTION NO. HCR 3010

Senate Energy and Natural Resources Committee

Subcommittee

Amendment LC# or Description: _____

- Recommendation: Adopt Amendment
 Do Pass Do Not Pass Without Committee Recommendation
 As Amended Rerefer to Appropriations
 Place on Consent Calendar
- Other Actions: Reconsider _____

Motion Made By Sen. Armstrong Seconded By Sen. Cook

Senators	Yes	No	Senators	Yes	No
Chair Jessica Unruh	/		Sen. Erin Oban	/	
Vice Chair Curt Kreun					
Sen. Kelly Armstrong	/				
Sen. Dwight Cook	/				
Sen. Jim Roers	/				
Sen. Don Schaible		/			

Total (Yes) 5 No 1

Absent -1-

Floor Assignment Sen. Unruh

If the vote is on an amendment, briefly indicate intent:

REPORT OF STANDING COMMITTEE

HCR 3010: Energy and Natural Resources Committee (Sen. Unruh, Chairman)
recommends **DO PASS** (5 YEAS, 1 NAYS, 1 ABSENT AND NOT VOTING).
HCR 3010 was placed on the Fourteenth order on the calendar.

2017 TESTIMONY

HCR 3010

Testimony by Ken Sletten, on ND House 2017 Concurrent Resolution 3010.

Ken Sletten contact info: ken@kensletten.com
701-243-6434 (h) 509-429-8280 (c)

347 - 105th St NW
Souris, ND 58783-9714

2/9/17
HCR
3010

Respectfully submitted, to House Energy and Natural Resources Committee, for HCR 3010 hearing in Capitol Coteau-A hearing room at 09:00 on Thursday 9 Feb 2017.

HCR 3010 Description: A concurrent resolution recognizing the efforts undertaken and the continued need for the State of North Dakota and the entire United States to undertake responsible measures to harden our commercial electrical grid against multiple serious threats.

Mr. Chairman and members of the Committee,

Thank you for this opportunity to comment on HCR 3010.

Respectfully but strongly urge adoption of this important and timely resolution, that deals with the urgent and growing need to "end-to-end harden" our vital national electric power grid against 3 different classes of serious and even existential threats:

- (1). Malicious cyber-attack by software hackers, and physical attack by terrorists;
- (2). Naturally-occurring high-end solar storm Electro-Magnetic Pulse (EMP); and
- (3). Nuclear EMP (NEMP) attack sponsored by a rogue nation like Iran or North Korea.

Many are likely already aware of the risks of cyber and physical attack on our complex modern electrical grid. But electrical engineering details that describe how solar storm EMP and NEMP threats put our national electrical grid at risk of long-term power outages are very complicated. Fully understanding said details requires technical understanding of EMP and NEMP events, and how they interact with and seriously damage our interconnected electrical grid. But fundamental and serious nature of this growing "triple-threat" can be appreciated at a high level even by non-technical members of the public; by reviewing 2 key online documents:

- (1). By former CIA Director Jim Woolsey and other subject-matter experts; titled: "ElectroMagnetic Pulse (EMP) is existential threat to America":
<https://www.centerforsecuritypolicy.org/2013/07/30/jim-woolsey-electromagnetic-pulse-emp-is-existential-threat-to-america/>
- (2). Excellent 22-slide presentation titled: "An Overview of Electrical Grid Vulnerability":
<http://securethegrid.com/vulnerability/>

Realize members of the Legislature are super-busy while in Session, but if any have time and interest in more details on this important subject: Attached is 3-page technical references list on this subject that I put together over the last 2 years. Generally listed in "recommended read / study" priority order (but note reading all of these references would take MANY days).

Respectfully,

Ken Sletten

Ken Sletten

Threats to USA electric power grid: Cyber / physical attack, EMP, NEMP

2017-01-31: There is urgent need to "end-to-end harden" our USA electric power grid, against 3 major threats: (1) Malicious cyber & physical attack; (2) Solar storm ElectroMagnetic Pulse (EMP); (3) Nuclear EMP (NEMP).

To get email copy of this Microsoft Word document with clickable internet links, contact:

Ken Sletten ken@kensletten.com 701-243-6434 (h)
347 - 105th St NW Souris, ND 58783-9714 509-429-8280 (c)

Overviews + technical references; in recommended-read order (videos optional):

1. Short article + optional 74 min. video, by former CIA Director Jim Woolsey and other subject-matter experts: "ElectroMagnetic Pulse (EMP) is existential threat to America": <https://www.centerforsecuritypolicy.org/2013/07/30/jim-woolsey-electromagnetic-pulse-emp-is-existential-threat-to-america/>

2. Outstanding 22-slide presentation (1st is 3-min. video); original had embedded links to very detailed technical references: "An Overview of Electrical Grid Vulnerability". Covers physical, cyber, and NEMP attacks; plus solar storm EMP (coronal mass ejections): <http://securethegrid.com/vulnerability/> For 2016 direct download version (22 MB):

<http://securethegrid.com/wp-content/uploads/2016/06/Grid-Vulnerability-Brief1.pdf>

NOTE: 2015 version with clickable links is no longer up: Ken Sletten has full copy (3.6 MB):

<http://securethegrid.com/wp-content/uploads/2015/10/Grid-Vulnerability-Brief.pdf>

Astounding item from above slide #15: Congressional EMP commission concluded if power was out for ≥ 1 year in most of USA, up to 9-of-10 Americans would perish (!!!)

3. On NYT hardcover "Best Seller" list, by former ABC News anchor Ted Koppel: \$15.60:

"Lights Out: A Cyberattack, A Nation Unprepared, Surviving the Aftermath":

<http://www.amazon.com/Lights-Out-Cyberattack-Unprepared-Surviving/dp/055341996X>

4. Regarding seriousness of the growing cyber-attack threat. Published in Nov 2014:

NSA Admiral Rogers said China and maybe etc. could shut down U.S. power grid:

http://www.cnn.com/2014/11/20/politics/nsa-china-power-grid/index.html?hpt=hp_t2

<http://www.foxnews.com/world/2014/11/23/intel-boss-warning-on-cyber-attacks-no-joke-say-experts/>

5. On solar super-storm EMP risks: All Quebec lost power for ~12 hours on 13 March 1989; plus U.S. had > 200 electric grid problems erupt during this intense solar storm:

http://www.nasa.gov/topics/earth/features/sun_darkness.html#.VGp_wfnF95l

Then in July 2012 a huge solar storm BARELY missed us; likely about as strong as 1859 Carrington Event. NASA odds Carrington-class solar storm hits in next 10 years: 12 %

http://science.nasa.gov/science-news/science-at-nasa/2014/23jul_superstorm/

http://science.nasa.gov/science-news/science-at-nasa/2008/06may_carringtonflare/

<http://www.extremetech.com/extreme/186805-the-solar-storm-of-2012-that-almost-sent-us-back-to-a-post-apocalyptic-stone-age>

Threats to USA electric power grid: Cyber / physical attack, EMP, NEMP

6. **May 2015 EMP Task Force letter to President Obama, on the existential EMP threat.** Signed by LONG list of distinguished experts, retired officers, & former members of Congress:
<http://www.emptaskforcenhs.com/uncategorized/letter-to-president-barack-obama/#more-231>

7. Good Sept 2014 piece by president of the Center for Security Policy Frank Gaffney:
"Will ISIS Strike America's Achilles Heel?" (our very vulnerable national electric grid):
<https://www.centerforsecuritypolicy.org/2014/09/03/will-isis-strike-americas-achilles-heel/>

8. Still do NOT have needed action(s) to address growing EMP threats: **"Before the Lights Go Out: A Survey of EMP Preparedness Reveals Significant Shortfalls"**:
<http://www.heritage.org/research/reports/2011/08/before-the-lights-go-out-a-survey-of-emp-preparedness-reveals-significant-shortfalls>

9. **Detailed technical & scientific references ((a) thru (h)). First 3 as paid hardcopies or free downloads.** If no time to review all 11 links this section, recommend **start with (a):**

(a) **"Terrorism and the Electric Power Delivery System"**. For U.S. DHS by National Research Council (NRC) in 2007. Not published until 2012 due to initial security concerns: ISBN 978-0-309-11404-2: 146 pages; 8.5 x 11; **6.4 MB free download**:
<http://www.nap.edu/catalog/12050/terrorism-and-the-electric-power-delivery-system>

(b) **"The Resilience of the Electric Power Delivery System in Response to Terrorism and Natural Disasters"**. Summary of Feb 2013 workshop follow-up to release of last above. ISBN 978-0-309-29395-2: 42 pages; 8.5 x 11; **3.2 MB free download**:
<http://www.nap.edu/catalog/18535/the-resilience-of-the-electric-power-delivery-system-in-response-to-terrorism-and-natural-disasters>

(c) **"Severe Space Weather Events - Understanding Societal & Economic Impacts"**. 2008 NRC workshop report on effects of extreme space weather on modern technology. ISBN: 978-0-309-12769-1: 144 pages; 8.5 x 11; **14.2 MB free download**:
<http://www.nap.edu/catalog/12507/severe-space-weather-events-understanding-societal-and-economic-impacts-a>

(d) **"State of Preparedness Against Threat of Electromagnetic Pulse (EMP) Event"**. Dr. Peter Vincent Pry to Congressional Committee, May 2015. 792 KB, 30 pages (free):
<https://oversight.house.gov/wp-content/uploads/2015/05/Pry-Statement-5-13-EMP.pdf>

(e) **2 books on EMP risks**; By Congressionally authorized Task Force on National and Homeland Security; by Executive Director Dr. Peter Vincent Pry. Paperback; \$15 each.
"Electric Armageddon: Civil-Military Preparedness For An Electromagnetic Pulse Catastrophe". 176 pages; 8.5 x 11:
<http://www.amazon.com/Electric-Armageddon-Civil-Military-Preparedness-Electromagnetic/dp/1482348217/>

"Apocalypse Unknown: The Struggle To Protect America From An Electromagnetic Pulse Catastrophe". 396 pages; 8.5 x 11:
<http://www.amazon.com/Apocalypse-Struggle-Protect-Electromagnetic-Catastrophe/dp/1482092778/>

Threats to USA electric power grid: Cyber / physical attack, EMP, NEMP

(f) Techie EMP risks paper: Oak Ridge National Lab (note website is being updated):
http://web.ornl.gov/sci/ees/etsd/pes/pubs/ferc_Executive_Summary.pdf

(g) "Electronic Doomsday for the US ?". By Gatestone International Policy Council:
<http://www.gatestoneinstitute.org/7214/electro-magnetic-pulse-emp>

(h) SHIELD Act (Secure High-voltage Infrastructure for Electricity from Lethal Damage): U.S. H.R. 2417: Amends Federal Power Act to protect bulk power system and electric infrastructure critical to defense and well-being of U.S. against natural and man-made EMP:
Two of many reports / summary on this proposed legislation:

<http://www.foxnews.com/science/2013/06/18/shield-act-to-protect-from-solar-catastrophes-electromagnetic-pulses.html>

<https://www.centerforsecuritypolicy.org/wp-content/uploads/2013/08/HR-2417-SHIELD-Act-Fact-Sheet.pdf>

10. Additional links to key pages on Center For Security Policy (CFSP), Secure The Grid Coalition (STGC), and EMP Task Force (EMPTF) websites. Recommended for worthwhile additional reading and study: MANY good technical articles & videos under these links:

CFSP home (all CFSP links under this page): <https://www.centerforsecuritypolicy.org/>
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<https://www.centerforsecuritypolicy.org/category/homeland-security/infrastructure-and-emp/>

STGC home (all STGC links under this page): <http://securethegrid.com/>
<http://securethegrid.com/emp-technologys-worst-nightmare/>
<http://securethegrid.com/the-basics-of-grid-security/>
<http://securethegrid.com/the-experts/>
<http://securethegrid.com/the-experts/coalition-partners/>

EMPTF home (all EMPTF links under this page): <http://www.emptaskforcenhs.com/>

11. EMP videos by National Geo (I have): "Electronic Armageddon" (50 min.; \$20):
<https://shop.nationalgeographic.com/product/dvds/science/electronic-armageddon-dvd-r>

"American Blackout" (90 min.; \$25):
<https://shop.nationalgeographic.com/product/dvds/history/american-blackout-dvd>

12. Edison Electric Institute (power industry) downplays some threats, or says "best risk mitigation is prevention". Doubt terrorists like ISIS can be 'deterred'. In any case:
For balance: **See what is at least a partially opposing opinion:**

[http://www.eei.org/issuesandpolicy/cybersecurity/Documents/Electromagnetic%20Pulses%20\(EMPs\)%20-%20Myths%20vs.%20Facts.pdf](http://www.eei.org/issuesandpolicy/cybersecurity/Documents/Electromagnetic%20Pulses%20(EMPs)%20-%20Myths%20vs.%20Facts.pdf)

13. Long 2015-12-21 Bismarck Tribune page-1 piece: Power grid vulnerable to foreign hacks. No longer up on Tribune website, but still available thru AP News Archive website:
http://www.apnewsarchive.com/2015/AP_Investigation%3A_US_power_grid_vulnerable_to_for_eign_hacks/id-c8d531ec05e0403a90e9d3ec0b8f83c2

3010

HCR 3010
3-9-17
Att #1
PS1

Testimony by Ken Sletten, on ND House 2017 Concurrent Resolution 3010.

Ken Sletten contact info: ken@kensletten.com 347 - 105th St
NW
701-243-6434 (h) 509-429-8280 (c) Souris, ND 58783-
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original

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347 - 105th St NW Souris, ND 58783-9714 509-429-8280 (c)

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3. On NYT hardcover "Best Seller" list, by former ABC News anchor Ted Koppel: \$15.60: "Lights Out: A Cyberattack, A Nation Unprepared, Surviving the Aftermath":

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<http://www.amazon.com/Lights-Out-Cyberattack-Unprepared-Surviving/dp/055341996X>

4. Regarding seriousness of the growing cyber-attack threat. Published in Nov 2014:
NSA Admiral Rogers said China and maybe etc. could shut down U.S. power grid:
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http://www.nasa.gov/topics/earth/features/sun_darkness.html#.VGp_wfnF95l

Then in July 2012 a huge solar storm BARELY missed us; likely about as strong as 1859 Carrington Event. **NASA odds Carrington-class solar storm hits in next 10 years: 12%**

http://science.nasa.gov/science-news/science-at-nasa/2014/23jul_superstorm/
http://science.nasa.gov/science-news/science-at-nasa/2008/06may_carringtonflare/
<http://www.extremetech.com/extreme/186805-the-solar-storm-of-2012-that-almost-sent-us-back-to-a-post-apocalyptic-stone-age>

Threats to USA electric power grid: Cyber / physical attack, EMP, NEMP

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(a) **"Terrorism and the Electric Power Delivery System"**. For U.S. DHS by National Research Council (NRC) in 2007. Not published until 2012 due to initial security concerns: ISBN 978-0-309-11404-2: 146 pages; 8.5 x 11; **6.4 MB free download:**
<http://www.nap.edu/catalog/12050/terrorism-and-the-electric-power-delivery-system>

(b) **"The Resilience of the Electric Power Delivery System in Response to Terrorism and Natural Disasters"**. Summary of Feb 2013 workshop follow-up to release of

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last above.

ISBN 978-0-309-29395-2: 42 pages; 8.5 x 11; **3.2 MB free download:**

<http://www.nap.edu/catalog/18535/the-resilience-of-the-electric-power-delivery-system-in-response-to-terrorism-and-natural-disasters>

(c) "Severe Space Weather Events - Understanding Societal & Economic Impacts".

2008 NRC workshop report on effects of extreme space weather on modern technology.

ISBN: 978-0-309-12769-1: 144 pages; 8.5 x 11; **14.2 MB free download:**

<http://www.nap.edu/catalog/12507/severe-space-weather-events-understanding-societal-and-economic-impacts-a>

(d) "State of Preparedness Against Threat of Electromagnetic Pulse (EMP) Event".

Dr. Peter Vincent Pry to Congressional Committee, May 2015. 792 KB, 30 pages (free):

<https://oversight.house.gov/wp-content/uploads/2015/05/Pry-Statement-5-13-EMP.pdf>

(e) 2 books on EMP risks; By Congressionally authorized Task Force on National and Homeland Security; by Executive Director Dr. Peter Vincent Pry. Paperback; \$15 each.

"Electric Armageddon: Civil-Military Preparedness For An Electromagnetic Pulse Catastrophe". 176 pages; 8.5 x 11:

<http://www.amazon.com/Electric-Armageddon-Civil-Military-Preparedness-Electromagnetic/dp/1482348217/>

"Apocalypse Unknown: The Struggle To Protect America From An Electromagnetic Pulse Catastrophe". 396 pages; 8.5 x 11:

<http://www.amazon.com/Apocalypse-Struggle-Protect-Electromagnetic-Catastrophe/dp/1482092778/>

Threats to USA electric power grid: Cyber / physical attack, EMP, NEMP

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(f) **Techie EMP risks paper:** Oak Ridge National Lab (note website is being updated):
http://web.ornl.gov/sci/ees/etsd/pes/pubs/ferc_Executive_Summary.pdf

(g) **"Electronic Doomsday for the US ?"**. By Gatestone International Policy Council:
<http://www.gatestoneinstitute.org/7214/electro-magnetic-pulse-emp>

(h) **SHIELD Act** (Secure High-voltage Infrastructure for Electricity from Lethal Damage):

U.S. H.R. 2417: Amends Federal Power Act to protect bulk power system and electric infrastructure critical to defense and well-being of U.S. against natural and man-made EMP: Two of many reports / summary on this proposed legislation:

<http://www.foxnews.com/science/2013/06/18/shield-act-to-protect-from-solar-catastrophes-electromagnetic-pulses.html>

<https://www.centerforsecuritypolicy.org/wp-content/uploads/2013/08/HR-2417-SHIELD-Act-Fact-Sheet.pdf>

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CFSP home (all CFSP links under this page): <https://www.centerforsecuritypolicy.org/>

<https://www.centerforsecuritypolicy.org/category/homeland-security/cyberterrorism/>

<https://www.centerforsecuritypolicy.org/category/homeland-security/infrastructure-and-emp/>

STGC home (all STGC links under this page): <http://securethegrid.com/>

<http://securethegrid.com/emp-technologys-worst-nightmare/>

<http://securethegrid.com/the-basics-of-grid-security/>

<http://securethegrid.com/the-experts/>

<http://securethegrid.com/the-experts/coalition-partners/>

EMPTF home (all EMPTF links under this page): <http://www.emptaskforcenhs.com/>

11. **EMP videos by National Geo** (I have): "Electronic Armageddon" (50 min.; \$20):

<https://shop.nationalgeographic.com/product/dvds/science/electronic-armageddon-dvd-r>

"American Blackout" (90 min.; \$25):

<https://shop.nationalgeographic.com/product/dvds/history/american-blackout-dvd>

12. **Edison Electric Institute** (power industry) downplays some threats, or says "best risk mitigation is prevention". Doubt terrorists like ISIS can be 'deterred'. In any case:

For balance: **See what is at least a partially opposing opinion:**

<http://www.eei.org/issuesandpolicy/cybersecurity/Documents/Electromagnetic%20Pulses%20>

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EMPs)%20-%20Myths%20vs.%20Facts.pdf

13. Long **2015-12-21 Bismarck Tribune page-1 piece:** Power grid vulnerable to foreign hacks. No longer up on Tribune website, but still available thru AP News Archive website:
http://www.apnewsarchive.com/2015/AP_Investigation%3A_US_power_grid_vulnerable_to_foreign_hacks/id-c8d531ec05e0403a90e9d3ec0b8f83c2

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