

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

1 NEAL R. GROSS & CO., INC.

2 RPTS PATERSON

3 HIF073030

4

5

6 DOE MODERNIZATION: LEGISLATION ADDRESSING

7 CYBERSECURITY AND EMERGENCY RESPONSE

8 Wednesday, March 14, 2018

9 House of Representatives

10 Subcommittee on Energy

11 Committee on Energy and Commerce

12 Washington, D.C.

13

14

15

16 The subcommittee met, pursuant to call, at 10:00 a.m.,
17 in Room 2322 Rayburn House Office Building, Hon. Fred Upton
18 [chairman of the subcommittee] presiding.

19 Members present: Representatives Upton, Olson, Barton,
20 Shimkus, Latta, Harper, McKinley, Kinzinger, Griffith,
21 Johnson, Long, Bucshon, Mullin, Hudson, Walberg, Duncan,
22 Walden (ex officio), Rush, McNerney, Peters, Castor,

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

23 Sarbanes, Welch, Tonko, Loeb sack, Butterfield, and Pallone
24 (ex officio).

25 Staff present: Mike Bloomquist, Deputy Staff Director;
26 Daniel Butler, Staff Assistant; Kelly Collins, Legislative
27 Clerk, Energy/Environment; Jordan Davis, Director of Policy
28 and External Affairs; Wyatt Ellertson, Professional Staff,
29 Energy/Environment; Margaret Tucker Fogarty, Staff Assistant;
30 Adam Fromm, Director of Outreach and Coalitions; Jordan
31 Haverly, Policy Coordinator, Environment; Ben Lieberman,
32 Senior Counsel, Energy; Mary Martin, Chief Counsel,
33 Energy/Environment; Drew McDowell, Executive Assistant;
34 Brandon Mooney, Deputy Chief Counsel, Energy; Mark Ratner,
35 Policy Coordinator; Annelise Rickert, Counsel, Energy; Dan
36 Schneider, Press Secretary; Peter Spencer, Professional Staff
37 Member, Energy; Jason Stanek, Senior Counsel, Energy; Austin
38 Stonebraker, Press Assistant; Madeline Vey, Policy
39 Coordinator, Digital Commerce and Consumer Protection; Hamlin
40 Wade, Special Advisor, External Affairs; Everett Winnick,
41 Director of Information Technology; Priscilla Barbour,
42 Minority Energy Fellow; Jeff Carroll, Minority Staff
43 Director; Jean Fruci, Minority Energy and Environment Policy
44 Advisor; Tiffany Guarascio, Minority Deputy Staff Director

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

45 and Chief Health Advisor; Rick Kessler, Minority Senior
46 Advisor and Staff Director, Energy and Environment; John
47 Marshall, Minority Policy Coordinator; Alexander Ratner,
48 Minority Policy Analyst; and C.J. Young, Minority Press
49 Secretary.

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

50 Mr. Upton. Good morning. Good morning. So, this DOE
51 modernization hearing is going to focus on the proposed
52 legislation relating to core energy security missions of the
53 Department.

54 This mission is to ensure the supply and delivery of
55 energy that is vital to our economic and national security,
56 our public welfare, and health.

57 For the last two Congresses we have been working to
58 update the Department's authorities and capabilities both to
59 mitigate against and respond to energy supply emergencies,
60 especially with respect to critical energy infrastructure and
61 to cybersecurity.

62 For example, we directed the Department to modernize its
63 strategic petroleum reserve and response capabilities. We
64 clarified and enhanced DOE's role as the sector-specific
65 agency for the energy sector, especially for critical
66 electric infrastructure.

67 We moved through the House H.R. 3050 last summer to
68 strengthen DOE's support for state energy emergency offices
69 in their cybersecurity efforts and the common theme has been
70 to update DOE's cybersecurity and emergency coordinating
71 functions and provisions of technical assistance to other

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

72 agencies, states, and asset owners.

73 So in keeping with these modernization efforts, the
74 legislation today continues that work. H.R. 5174, the Energy
75 Emergency Leadership Act, introduced by Mr. Walberg and
76 Ranking Member Rush, elevates the role in DOE and specifies
77 certain emergency and preparedness functions to ensure full
78 attention to the risks of cybersecurity and other threats to
79 the energy sector.

80 Given the reliance on energy in modern society, ensuring
81 that supply has become of such surpassing importance that we
82 have to be able to make sure that the agency has sufficient
83 leadership focus to meet its responsibilities.

84 Similarly, H.R. 5175, the Pipeline and LNG Facility
85 Cybersecurity Preparedness Act, which I introduced along with
86 Mr. Loeb sack would enhance DOE's ability to coordinate the
87 interconnected systems of energy delivery and supply which
88 includes ensuring the security of digital systems in pipeline
89 and grid operations.

90 Although several governmental authorities play a role,
91 DOE has got to have the adequate visibility across the energy
92 sector to ensure the federal, state, and asset owners are
93 sufficiently prepared and coordinated and to efficiently

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

94 deploy where needed its world class technological
95 capabilities.

96 This bill certainly aims to assure that it can be done.
97 Both H.R. 5239, the Cyber Sense Act of 2018, and H.R. 5240,
98 the Enhancing Grid Security Through Public-Private
99 Partnership Act, have been introduced by Mr. Latta and Mr.
100 McNerney, two leaders on grid innovation.

101 The Cyber Sense bill, a version of which passed the
102 House as part of H.R. 8 back in 2016, seeks to establish a
103 voluntary DOE program that would permit cybersecure products
104 intended for use in the bulk power system.

105 And the Enhancing Grid Security Act bill seeks to
106 facilitate and encourage public-private partnerships aimed at
107 strengthening the physical and cybersecurity electric
108 utilities, especially mid-size and small utilities which may
109 not have met the resources to identify and address
110 cybersecurity vulnerabilities and system risks.

111 Two panels of witnesses this morning are going to
112 provide their perspective on these bills and discuss what
113 other measures may be helpful to ensure DOE can fulfil its
114 energy security and emergency missions.

115 I want to welcome back Undersecretary of Energy Mark

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

116 Menezes, who returns from his appearance in January. I look
117 forward to his comments and to talk about his own plans to
118 elevate DOE's leadership in emergency response.

119 He's accompanied by Pat Hoffman, principal deputy
120 assistant secretary in the Office of Electricity, who can
121 provide technical perspective from her experience addressing
122 cybersecurity and energy emergency functions.

123 Our second panel will feature a range of energy security
124 and emergency perspectives. One witness from DOE's Idaho
125 National Lab will help us understand federal capabilities to
126 support cybersecurity in the energy sector.

127 We are going to hear from the state of Indiana's
128 Emergency Response Authority from Dominion Energy on pipeline
129 security from EEI on electric cybersecurity and from the
130 National Electrical Manufacturers Association to talk about
131 cybersecurity of grid components.

132 We welcome you all and with that I would yield to the
133 ranking member of the subcommittee, my friend, Mr. Rush.

134 [The prepared statement of Mr. Upton follows:]

135

136 *****INSERT*****

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

137 [The Bills H.R. 5174, H.R. 5175, H.R. 5239, and H.R.

138 5240 follow;}

139

140 *****INSERT*****

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

141 Mr. Rush. I want to thank you, Mr. Chairman, for
142 holding this important hearing today on legislation
143 addressing cybersecurity and emergency response.

144 Mr. Chairman, I support the four bills before us and I
145 want to specifically and respectfully acknowledge Mr. Walberg
146 of Michigan who worked with my office on the Energy Emergency
147 Leadership Act.

148 This bill will establish a new DOE assistant secretary
149 position with jurisdiction over all energy emergency and
150 security functions related to energy supply, infrastructure,
151 and cybersecurity.

152 Mr. Chairman, while cybersecurity is an important issue,
153 I would be remiss if I did not point out that today at this
154 very same time students have declared this as National Walk-
155 Out Day.

156 And as we speak, Mr. Chairman, students from across the
157 country are leaving their classrooms to honor the lives of
158 the 17 people killed at Stoneman Douglas High School last
159 month and to press policy makers to pass common sense gun
160 control laws.

161 Mr. Chairman, cybersecurity is a serious issue that must
162 be addressed. However, nothing can be more urgent than

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

163 answering the cries and the pleas emanating from our nation's
164 youth -- students who have had enough of being scared and
165 anxious and frustrated by the lack of leadership coming from
166 both the administration and this Congress on the issue of gun
167 violence.

168 Mr. Chairman, as policy makers, as parents, as
169 grandparents, as adults, and as leaders we are failing our
170 youth by letting politics and influential interest groups
171 come before our most sacred responsibility, and that is
172 protecting our children.

173 Mr. Chairman, every single Democrat on the four Energy
174 and Commerce committees sent a letter to Chairman Walden on
175 March 7th urging him to hold hearings as soon as possible to
176 address gun violence in America.

177 That followed a February 16th letter also signed by all
178 24 Democrats on the full committee to Chairman Walden and
179 Health Subcommittee Chairman Burgess urging the Republican
180 leadership to hold a hearing as soon as possible on federal
181 investment in gun violence prevention research.

182 Mr. Chairman, we owe it to our children at the very
183 least to examine this problem in a serious and thoughtful
184 manner and I can assure you that this issue will come up

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

185 again and again, regardless of the planned topic of
186 discussion until we hold a hearing.

187 With that, I yield the remainder of my time to my friend
188 and colleague from California, Mr. McNerney.

189 Mr. McNerney. Well, I thank the ranking member for
190 yielding and the chairman for holding this hearing.

191 Today, we will examine several legislative proposals
192 concerning our nation's grid security. As co-chairs of the
193 Grid Innovation Caucus, Bob Latta and I are focused on
194 providing a forum that advocates for grid investments and
195 examines the risks and opportunities with our grid.

196 Our work, through the Grid Caucus, has led to the
197 introduction of two bills we will be discussing today. H.R.
198 5239, the Cyber Sense Act of 2018 would create a program to
199 identify cybersecure products for the bulk power grid system
200 through testing and verification.

201 The bulk power system is the backbone of American
202 industry and provides all the benefits of reliable electric
203 power to the American people. It's essential that we make
204 this system as secure as possible as cyberattacks pose a
205 serious threat to our electric grid.

206 Any vulnerable components of our grid is a threat to our

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

207 security and this bill will go a long way to strengthen our
208 system. Mr. Latta and I are also co-leads of H.R. 5240, the
209 Enhancing Grid Security Through Public-Private Partnerships
210 Act.

211 This bill will create a program to enhance the physical
212 and cybersecurity of electric utilities through assessing
213 security vulnerabilities, increase cybersecurity training,
214 and data collection.

215 It will also require the interruption cost estimate
216 calculator, which is used to calculate the return on
217 investment on utility investments, to be updated at least
218 every two years to ensure accurate calculations.

219 These two bipartisan bills, along with the other bills
220 we have before us today, will help put us on the path to
221 better securing our electric utility system.

222 I welcome the panelists and look forward to hearing
223 their insights on the usefulness of our legislation and how it
224 may be improved.

225 Thank you. I yield back.

226 Mr. Upton. Gentleman's time is expired.

227 The chair will recognize the chairman of the full
228 committee, the gentleman from Oregon, Mr. Walden.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

229 Chairman Walden. Thank you very much, Mr. Chairman.

230 I want to thank my colleague from California for his
231 good work on these issues. This is really important stuff
232 for our country and those of us who have been briefed up on
233 it know the importance of the work that's going on in our
234 agencies and the security issues that are really before us.

235 Today's hearing examines legislation addressing
236 cybersecurity and emergency response. It will help us
237 respond to some of the most urgent challenges -- the
238 reliability of our nation's energy infrastructure.

239 Because our energy infrastructure drives the entire
240 nation's economy, I've made it a top priority for this
241 committee to focus on emerging threats and proposed solutions
242 to make our infrastructure more resilient.

243 We are looking ahead to make sure we are doing
244 everything we can to protect our electric grid and our oil
245 and natural gas infrastructure as well and improve our
246 ability to respond when the unexpected happens.

247 Because nearly all of our nation's energy infrastructure
248 is privately owned and operated, the federal government needs
249 to work closely with representatives of the energy sector and
250 the companies in the supply chain that manufacture equipment

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

251 and technologies.

252 In today's highly interconnected world, the threat of
253 cyberattacks is ever present. So we have to be vigilant. We
254 must also be prepared for physical threats whether they be
255 sabotage or natural disasters like the hurricanes we
256 experienced last year.

257 As the sector-specific agency for energy, the Department
258 of Energy has a very important coordinating role to play and
259 this function was on display earlier this year in response to
260 Hurricanes Nate, Maria, Irma, and Harvey.

261 Many of us followed DOE's situation reports on the
262 storms' impacts and the energy industry's recovery and
263 restoration activities.

264 The Department of Energy's emergency responders in the
265 field provided critical subject matter expertise and assisted
266 with waivers and special permits to aid restoration.

267 To prevent a major fuel supply emergency, the Department
268 of Energy's strategic petroleum reserve provided much-needed
269 oil to refiners. The DOE also analyzed electricity supply to
270 determine whether it needed to draw on its Federal Power Act
271 authorities to secure the energy grid.

272 So today's hearing will examine four bipartisan bills

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

273 designed to improve DOE's energy security and emergency
274 response authorities. I want to thank all our members for
275 working across the aisle on these important issues.

276 I join Chairman Upton in welcoming back Undersecretary
277 of State -- Undersecretary of Energy, I guess, noted in
278 tweets this morning -- Undersecretary of Energy Mark Menezes
279 to our panel. I look forward to your comments on the
280 Department of Energy's security priorities and its views on
281 the legislation.

282 I also want to welcome the witnesses appearing on the
283 second panel where we will hear a range of perspectives from
284 state government, the energy industry, and supply chain
285 manufacturers.

286 We are also joined by a witness from DOE's Idaho
287 National Lab. I was there on Monday. Very much appreciated
288 the briefings including the classified ones and so I am very
289 impressed by the work that goes on at INL and our country
290 should be very proud of the incredible men and women and the
291 work they do there in every regard.

292 I also know that -- saw the unique capabilities to test
293 system wide cybersecurity applications on a full scale
294 electric grid loop.

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

295 INL is one of 17 DOE national labs tackling the critical
296 scientific challenges of our time and the threats that come
297 our way and I want to thank INL leadership and staff for
298 sharing their research and expertise with the committee.

299 This subcommittee has held dozens of hearings on energy
300 infrastructure and produced several bipartisan bills to
301 improve the resilience and reliability of our nation's energy
302 delivery system and these bills will ultimately make our
303 nation more energy secure, reduce the cost of fuels and
304 electricity for consumers.

305 So at the end of the day, if we focus on what's best for
306 consumers we will continue to make good public policy
307 decisions.

308 With that, Mr. Chairman, I yield back the balance of my
309 time and thank our witnesses for their participation.

310 [The prepared statement of Chairman Walden follows:]

311

312 *****INSERT*****

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

313 Mr. Upton. Gentleman yields back.

314 The chair recognizes the ranking member of the full
315 committee, the gentleman from New Jersey, Mr. Pallone.

316 Mr. Pallone. Thank you, Mr. Chairman.

317 Today's hearing revolves around a quartet of bipartisan
318 bills designed to enhance the security of our nation's energy
319 infrastructure. However, before we get to cybersecurity, I'd
320 like to talk for a minute about the security of our nation's
321 children.

322 Today, one month has passed since the tragic shootings
323 at Marjorie Stoneman Douglas High School that took the lives
324 of 17 children and educators, and as we sit here students all
325 across the nation have just completed a 17-minute walkout in
326 memory of those killed in that attack as well as to protest
327 this body's refusal to take action on the gun violence
328 epidemic.

329 Students and their families are justifiably frustrated
330 with the inaction here in Washington. They are sick and
331 tired of a president who says one thing in front of the
332 cameras and then works behind the scenes to push the NRA
333 agenda as soon as he thinks the cameras are focused somewhere
334 else.

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

335 And they are also sick and tired of a Republican
336 leadership in Congress that won't move forward on any common
337 sense legislation, some of which has strong bipartisan
338 support.

339 Americans have legitimate questions about the ever-
340 increasing capacity of guns to kill in large numbers and the
341 ease with which people who are in danger to themselves and
342 others can obtain them in the marketplace and those questions
343 at least deserve to be explored through hearings in this
344 committee.

345 Every Democrat on this committee has asked in two
346 separate letters to the chairman for a series of five
347 hearings on the gun violence epidemic.

348 We have not received a response and no hearings have yet
349 to be scheduled. So I hope that the chairman and my
350 Republican colleagues will finally see the need to schedule
351 the five hearings we requested.

352 We don't expect them to necessarily agree with us or
353 those participating in today's walkout on all the solutions
354 to the gun violence epidemic.

355 However, we do hope that they will finally acknowledge
356 the legitimate need to explore the questions we are asking

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

357 and for this committee to take action.

358 And now, with regard to cybersecurity, I appreciate the
359 majority taking these small but important bipartisan steps to
360 enhance the Department of Energy's authorities with regard to
361 our nation's energy infrastructure.

362 These four bills build upon the good work done by this
363 committee and the FAST Act under Chairman Upton's leadership.
364 I think it makes sense from both the security and business
365 standpoint to have the department with the best knowledge of
366 the energy industry taking the primary role in coordinating
367 efforts to prevent and respond to cyberattacks on these
368 facilities.

369 In general, I am supportive of each of these bills.
370 H.R. 5174, the Energy Emergency Leadership Act sponsored by
371 Representative Walberg and Ranking Member Rush, would create
372 a new DOE assistant secretary position with jurisdiction over
373 all energy emergency and security functions related to energy
374 supply, infrastructure and cybersecurity.

375 H.R. 5175, the Pipeline and LNG Facilities Cybersecurity
376 Preparedness Act, was introduced by Chairman Upton and Mr.
377 Loeb sack.

378 It would require the secretary of energy to carry out a

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

379 program to establish policies and procedures that would
380 improve the physical and cybersecurity of natural gas
381 transmission and distribution pipelines, hazardous liquid
382 pipelines and liquefied natural gas facilities.

383 Representative Latta and McNerney's bill, H.R. 5239, the
384 Cyber Sense Act of 2018, is based on McNerney's language
385 included in the last Congress energy bill.

386 It would require the secretary to establish a voluntary
387 program to identify cybersecure products that can be used in
388 bulk power systems.

389 Mr. McNerney and Mr. Latta also introduced H.R. 5240,
390 the Enhancing Grid Security Through Public-Private
391 Partnership Act, which directs the secretary to create and
392 implement a program to enhance the physical and cybersecurity
393 of electric utilities.

394 In addition to these bills, I also wanted to direct the
395 committee's attention to the LIFT America Act, the
396 infrastructure bill that committee Democrats introduced last
397 year.

398 A number of the bill's provisions would enhance the
399 security and resiliency of the grid through new grant
400 programs and by requiring certain projects receiving DOE

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

401 assistance including the cybersecurity plan written in
402 accordance with guidelines developed by the secretary.

403 And the bill would also establish a strategic
404 transformer reserve program to reduce electric grid
405 vulnerability to physical and cyberattacks, natural
406 disasters, and climate change, and these are provisions that
407 will better assure the security of our energy infrastructure
408 and I hope this committee will consider them as we move
409 forward.

410 And again, Mr. Chairman, thanks for bringing up these
411 bipartisan bills and I yield back.

412 Mr. Upton. Gentleman yields back, and as I indicated,
413 we are joined for our first panel with the Honorable Mark
414 Menezes, the undersecretary of energy.

415 I would just note for those of us that went on the
416 bipartisan trip to look at the hurricane damage in Puerto
417 Rico, on my local radio website this morning I see that the
418 bridge that we saw that was washed out was rededicated
419 yesterday with the governor and it's opened up.

420 It's been six months. It connects 60 families in a town
421 of about 33,000 folks. So I know we were there for an hour
422 or so back in December. So I just thought I'd give that

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

423 little update.

424 And with that, Mr. Menezes, welcome back again to the
425 committee. We look forward to your testimony. You know the
426 rules. Thank you in advance for your testimony. We will
427 give you five minutes to sum it up and then we will ask
428 questions from that point.

429 So welcome.

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

430 STATEMENT OF THE HONORABLE MARK MENEZES, UNDERSECRETARY, U.S.
431 DEPARTMENT OF ENERGY

432

433 Mr. Menezes. Thank you, Chairman Upton, Ranking Member
434 Rush, and distinguished members of the subcommittee.

435 Good morning, and thank you for the opportunity to
436 participate in this legislative hearing to discuss the
437 strategic priorities addressing the cybersecurity threats
438 facing our national energy infrastructure and the Department
439 of Energy's role in protecting these critical assets and
440 responding to emergencies.

441 Maintaining and improving the resilient energy
442 infrastructure is a top priority of the secretary and a major
443 focus of the department. You referred to the written
444 statement. I have submitted a much more comprehensive
445 written statement so my remarks will be limited to just the
446 highlights.

447 To demonstrate our commitment and focus on this mission,
448 the secretary announced last month that he is establishing
449 the Office of Cybersecurity, Energy Security, and Emergency
450 Response, to be known as CESER.

451 This organizational challenge -- change will strengthen

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

452 the department's role as the sector-specific agency or energy
453 sector cybersecurity supporting our national security
454 responsibilities.

455 The creation of CESER office will accomplish several
456 goals -- one, build on the programs that we have today; two,
457 elevate the department's focus on energy infrastructure
458 protection and response; three, enable a more coordinated
459 preparedness and response to cyber and physical threats and
460 natural disasters; and most importantly, four, create a
461 structure and an office with an evolving mission to ensure
462 sufficient authorities and resources are in place to address
463 present and future threats.

464 The focus of the office will necessarily include
465 electricity delivery, oil and natural gas infrastructure, and
466 all forms of generation.

467 The secretary's desire to create dedicated and focused
468 attention on these responsibilities will provide greater
469 visibility, accountability, and flexibility to better protect
470 our nation's energy infrastructure and support its asset
471 owners.

472 As more fully explained in my submitted written
473 testimony, DOE works in collaboration with other agencies and

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

474 private sector organizations including the federal
475 government's designated lead agencies for coordinating the
476 response to significant cyber incidents -- DHS, the FBI, the
477 National Cyber Investigative Joint Task Force, as well as
478 DOT, PHMSA, U.S. Coast Guard, and FERC and others through the
479 Energy Government Coordinating Council and other coordinating
480 councils.

481 The FAST Act designated DOE as the sector-specific
482 agency for energy sector cybersecurity. Congress enacted
483 several important new energy security measures in the FAST
484 Act as it relates to cybersecurity.

485 The secretary of energy was provided new authority upon
486 declaration of a grid security emergency by the president to
487 issue emergency orders to protect, restore, or defend the
488 reliability of critical electric infrastructure.

489 This authority allows DOE to respond as needed to
490 threats of cyber and physical attacks on the grid, and
491 although the administration does not have a formal position
492 on any of the legislation under discussion today, we are
493 pleased to continue to work with the committee to provide
494 technical assistance.

495 And this morning, I would like to provide the

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

496 subcommittee with some high-level priorities of the
497 department in the context of the president's fiscal year 2019
498 budget request and which is the subject matter of today's
499 bills.

500 Overall, investing in energy security and resilience
501 from an all-hazards approach is vital, given the natural and
502 manmade threats facing the nation's energy infrastructure,
503 the energy industry, and the supply chain.

504 The fiscal year 2019 request would provide the
505 department an opportunity to invest in early-stage research,
506 network threat detection, cyber incident response teams, and
507 the testing of supply chain components and systems.

508 Beyond providing guidance and technical support to the
509 energy sector, our Office of Electricity supports R&D
510 designed to develop advanced tools and techniques to provide
511 enhanced cyberprotection for key energy systems.

512 OE cybersecurity for energy delivery systems' R&D
513 program is designed to assist energy sector asset owners by
514 developing cybersecurity solutions for our energy
515 infrastructure.

516 OE co-funds projects with industry, our national labs,
517 and university partners to make advances in cybersecurity

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

518 capabilities. These research partnerships are helping to
519 detect, prevent, and mitigate consequences of a cyber
520 incident for our present and future energy systems.

521 It's important to emphasize that DOE plays a critical
522 role in supporting the entire energy sector's efforts to
523 enhance the security and resilience of the nation's critical
524 energy infrastructure.

525 To address today's ever increasing and sophisticated
526 challenges, it is critical for us to be leaders and cultivate
527 a culture of resilience.

528 We must constantly develop, educate, and train a robust
529 network of producers, distributors, vendors, public partners,
530 regulators, policy makers, and stakeholders acting together
531 to strengthen our ability to prepare, to respond, and
532 recover.

533 As part of a comprehensive cyber -- energy cybersecurity
534 resilient strategy, the department supports efforts to
535 enhance visibility and situational awareness of operation
536 networks, increase alignment of cyber preparedness and
537 planning across local, state, and federal levels and leverage
538 the expertise of DOE's national labs to drive cybersecurity
539 innovation.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

540 As always, the department appreciates the opportunity to
541 appear before this committee and discuss cybersecurity and
542 emergency response in the energy sector and we applaud your
543 leadership.

544 We look forward to working with you and your respective
545 staffs and continue to address cyber and physical security
546 challenges, and I look forward to your questions.

547 Thank you. [The prepared statement of Mr. Menezes
548 follows:]

549

550 *****INSERT*****

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

551 Mr. Upton. Thank you for your testimony and, as you
552 know, we are talking about several bills this morning.

553 We want to make sure that DOE in fact does have the
554 clear authority in the energy sector to be prepared for
555 emergencies, particularly concerning the distribution of oil
556 and gas and electricity, and we welcome your commitment to
557 work with us and the bill's sponsors, as you indicated in
558 your testimony, to provide the technical assistance to make
559 sure that these proposals provide the tools that the agency
560 can use.

561 I want to particularly thank, as Chairman Walden
562 indicated in his opening statement, the willingness to work
563 with the Idaho National Lab.

564 I know that he had a very productive day out there
565 earlier this week and I will tell members of the -- our
566 subcommittee that we are planning to have a classified
567 briefing with them at some point in the near future so that
568 we can -- we can know precisely what we have to be ready for
569 and be able to ask questions in a -- in a classified setting.
570 We are looking forward to setting that up in the next couple
571 of weeks.

572 Let me just ask if you can help us identify other areas

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

573 we might be able to clarify and strengthen your authorities
574 to respond to energy supply emergencies, if we can have that
575 commitment again today, and if you want to share any
576 specifics today or certainly down the road where you can help
577 us make sure that the worst doesn't happen and we will put
578 out thousands, maybe hundreds of thousands, maybe even
579 millions of folks without the ability to hook into the needed
580 energy resources for their daily lives.

581 Mr. Menezes. Thank you for the question, Chairman
582 Upton.

583 Indeed, having a robust communications and coordination
584 system with our industry asset owners is critical to do this.
585 We currently serve on a variety of and coordinator subsector
586 coordinating councils.

587 We work closely with industry. We have regular
588 meetings. We coordinate. We make our labs available to
589 those that need it.

590 We train, we practice, and we prepare. We do all that
591 and, to be sure, we work with our sister agencies through the
592 Energy Government Coordinating Council and work really on a
593 daily basis with, as I mentioned, DHS and the other agencies.

594 All of that we are doing today. When the system is

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

595 stressed when we have the emergencies in Puerto Rico, the art
596 then is to put all that in place and respond in real time and
597 to work with our sister agencies, and I have testified before
598 that the expectations that the DOE has and the technologies
599 that we have and the abilities to mobilize and to react are
600 sometimes exceeded by the authorities and the resources that
601 we have.

602 It would be important -- it is important for the
603 department with the bills that you have to be clear on the
604 authorities, you know, that we have and if I could say, too,
605 it would be important to ensure that we have the authority to
606 get the resources that we have when we are working with the
607 other committees to ensure that we have the resources.

608 So we thank you for your leadership on that. But clear
609 direction and the resources -- the authorization to have the
610 resources would be very -- would be very helpful.

611 Mr. Upton. So DOE works with the Department of Homeland
612 Security, TSA, and other agencies to ensure the protection of
613 pipelines. But these agencies, as we know, certainly have
614 other priorities.

615 It is my understanding that TSA, despite having some
616 50,000 employees, is only able to dedicate some -- a handful

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

617 of folks, literally, three or four -- to pipeline security.

618 So the question I might have is are you concerned by
619 that fact, that a lead agency for pipeline safety is so
620 stretched that only a handful of people would be working on
621 pipelines?

622 Mr. Menezes. Well, I can't speak directly to the
623 resources and demands that they have but I can tell you from
624 the experience that we have at DOE, having been over there
625 now almost four months, we are -- all agencies are
626 constrained to use existing resources to respond to, you
627 know, new and additional obligations, for example, and it is
628 a constant effort to find adequate resources to do things to
629 accomplish our statutory obligations.

630 I will say that with pipelines both DHS and DOT co-
631 chair, you know, that sector-specific pipeline industry. We
632 are involved through the oil and natural gas subsector
633 coordinating council.

634 And so we have -- we have regular interaction with the
635 agencies that you mentioned and other agencies but also with
636 the industry.

637 So, you know, we are involved in it. But, again, it's
638 always a challenge to find adequate resources within the

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

639 current budget -- you know, to do the things that's expected
640 of you.

641 Mr. Upton. Thank you.

642 I yield for questions to the ranking member of the
643 subcommittee, Mr. Rush.

644 Mr. Rush. I want to thank you, Mr. Chairman.

645 Mr. Undersecretary, to date we have not experienced any
646 large-scale cyberattacks on our energy grid. However, there
647 have been minor incidences, maybe even what we might call
648 probes into the system.

649 In your professional opinion, would you say that we
650 haven't experienced -- have not experienced any large-scale
651 attacks due to our defenses or is it simply because no entity
652 has as of yet really attempted to launch a full-scale attack?

653 And do we really need to know -- do we really even know,
654 rather, what their capabilities are of some of these foreign
655 entities or rogue states that may eventually try to do us
656 some harm?

657 Mr. Menezes. Thank you for the question, Ranking Member
658 Rush.

659 Yes, a very important question. We are at probably a
660 historical turning point from what has been going on in the

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

661 past.

662 I had mentioned the ever increasing level of
663 sophistication and the ever increasing number of threats.

664 What has happened in the past simply is over and every day
665 presents new challenges.

666 Some of the questions you asked, you know, would involve
667 classified material that I can't get in today but it is
668 public that we are facing threats today that we haven't seen
669 in the past.

670 The Internet of Things, all software, all of these are
671 providing opportunities for those that are very creative to
672 try to attack our systems, and it's ongoing. It's daily.
673 It's 24/7. It is around the clock.

674 Interestingly, as we know, that now it is machines that
675 are doing all this and they're using artificial intelligence.
676 So you have machines.

677 Our goal, of course, would be to counter their machines
678 with our machines and our artificial intelligence. But it's
679 an ever-escalating battle.

680 So you're right to ask the question. We don't even know
681 what the future threats are. And this is part of the reason
682 why we are standing up this office. We want this to be

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

683 highly visible. We want this to be accountable to other
684 agencies, to the Congress, so that you all have a much higher
685 visibility on what DOE is doing.

686 So you asked the right questions. We are concerned
687 about not only current but future threats and having the
688 resources.

689 Pat, did you want to say something?

690 Ms. Hoffman. I just would also like to credit the
691 strong partnership we have with industry and that we are
692 keeping pace with respect to intelligence and classified
693 information sharing, partnership with the ISAC for alerts and
694 getting information out to industry as soon as possible, as
695 well as partnerships and looking at engineering solutions and
696 looking at technology solutions that will help mitigate some
697 of the issues.

698 Mr. Rush. That leads me to another concern, and that's
699 the -- our nation's workforce preparedness when it comes to
700 cybersecurity. Are we doing all that we can to ensure that
701 we have a highly skilled trained workforce both presently and
702 in the future to address cybersecurity issues?

703 Mr. Menezes. We are doing what we can. I am not sure
704 that we are doing everything that we can but we certainly are

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

705 elevating education in the realm of preparedness in addition
706 to, you know, response and ultimately recovery.

707 But it's going to be research and development and
708 breakthrough technologies to be able to protect and defend
709 our system and to be able to respond.

710 So we currently have training programs in place where we
711 deal with our -- not only our workforce but also the
712 industry's workforce because they have to have the benefit of
713 everything that we see, we know, and that we are developing
714 so that they can train and they can instill a culture of
715 resilience within their organizations.

716 And I can testify firsthand on the past success of the
717 leadership of this committee and working with the ESCC and
718 the industry partners in DOE's role.

719 I can assure you it was important for the electricity
720 sector to have their CEOs participate, and when the CEOs
721 participate they return to the company and they instill a
722 culture of compliance and resilience and that they make many
723 changes and they make sure that the workforce is very
724 educated on these very technical and highly sophisticated
725 programs.

726 So we are committed to ensuring that we have a dedicated

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

727 and educated workforce.

728 Mr. Rush. Thank you, Mr. Chairman. I yield back.

729 Mr. Upton. The chair recognizes the gentleman from
730 Texas, Mr. Barton.

731 Mr. Barton. Thank you, Mr. Chairman. It's always good
732 to see our good friend here in such a position.

733 This is an important hearing that we are having today
734 because it addresses an issue that we really haven't done a
735 very good job of addressing -- this issue of cybersecurity
736 and emergency response.

737 I am not real sure what cybersecurity is, first of all.
738 So I guess my first question would be does the Department of
739 Energy have a definition of cybersecurity.

740 Mr. Menezes. Well, let me go back to the days that I
741 was on that side of the dais in '05 when we decided to add
742 the word cybersecurity into the mandatory reliability
743 provisions that we put in EPAC of '05.

744 That -- we thought whether we should define it back
745 then, to be frank about it, and we decided then that it was
746 better to have it as, frankly, broad as it could be because
747 we weren't sure what it would become.

748 And so consequently I am not sure if we have a formal

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

749 definition. I am looking over at --

750 Mr. Barton. So far you have done a very good job of
751 dissimulating and not saying a darn thing so --

752 [Laughter.]

753 Mr. Menezes. I know that.

754 Mr. Barton. -- but roles do change.

755 Mr. Menezes. Yes. I don't think we have a formal
756 definition. But --

757 Mr. Barton. Well, do we need one.

758 Mr. Menezes. -- I had mentioned that, you know, so
759 cyber -- again, the Internet of Things and software typically
760 are ways that they seek to gain entry into systems via those
761 mechanisms.

762 Mr. Barton. Mr. Chairman, let's let the record show
763 that I stumped the undersecretary of energy on the first
764 question, but in a polite way, because he and I are friends.

765 Well, would you -- would you say that cybersecurity
766 deals with the internet intercepting -- somehow making it
767 difficult for computer systems to operate, hacking into a
768 controlled system or power plants or pipeline controls?
769 Would that be a practical type of cybersecurity attack --
770 something like that?

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

771 Mr. Menezes. Yes, and you mentioned those are threats,
772 right. But there's a security part of that, too. So it
773 would include the communication systems, making sure you have
774 resilient communication systems, control systems that you can
775 monitor and detect and react and take, you know, action.

776 You had mentioned the threat detection and the analysis,
777 and it's not limited to just one sector of the energy
778 industry, for example.

779 So it has to include -- you have points of potential
780 entry into any systems and we are talking about supply chain
781 today but, you know, we have generation.

782 We have all the distribution. We have transmission. We
783 have the, you know, the producers, the vendors. It's all up
784 and down the, you know, every point.

785 Mr. Barton. Well, let me ask -- let me ask another
786 simple question, which you may not want to answer.

787 Which of our industries are sectors that the Department
788 of Energy has responsibility for would you consider to be
789 most vulnerable to a cybersecurity attack?

790 Mr. Menezes. I think any that use the internet and use
791 computers and are part of a system. And so when you -- when
792 you get the briefings, you know, we are members.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

793 DOE is a member of the National Security Council and as
794 such we have intelligence and counterintelligence and access,
795 you know, to all of our sister agencies and we have eyes on
796 things.

797 When you look at it, those that wish to penetrate our
798 system will try all segments -- all segments. So in that
799 respect, we are all vulnerable. We are all constantly
800 vulnerable.

801 Mr. Barton. Let me ask my final question. Have -- to
802 the department's knowledge, have there been any cybersecurity
803 attacks on our energy sector that the Department of Energy is
804 responsible for?

805 Mr. Menezes. Attacks?

806 Mr. Barton. Yes. Have there been attempts to --

807 Mr. Menezes. Our systems are constantly being attacked
808 -- constantly. Not only the DOE system but also the energy
809 system.

810 Mr. Barton. Okay. Well, if you say constantly then
811 that would -- I would interpret that to mean that we've
812 successfully fended them off, since I am not aware of any
813 breakdowns in our energy infrastructure.

814 Mr. Menezes. Well, there have been some reported

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

815 breaches, if you will. We are fortunate that we haven't had
816 a major consequence of attacks and thus far we have been
817 successful in identifying.

818 Part of this analysis involves modelling, information
819 sharing, and monitoring. You may collect data and then you
820 will use our experts' abilities to evaluate what we are
821 seeing and then try to figure out what is happening.

822 Mr. Barton. My time has expired. But would the
823 department be willing to have a briefing -- a bipartisan
824 briefing where we could -- you could go into some detail
825 about the attempted attacks?

826 Mr. Menezes. Yes, sir.

827 Mr. Barton. Thank you.

828 Thank you, Mr. Chairman.

829 Mr. Upton. Gentleman's time has expired.

830 Mr. McNerney.

831 Mr. McNerney. Well, I thank the chairman and, again, I
832 thank the witness.

833 Are you familiar with the two bills that Mr. Latta and I
834 have proposed -- the Cyber Sense Act and the Enhanced Grid
835 Security Through Public-Private Partnerships Act?

836 Mr. Menezes. Yes, sir.

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

837 Mr. McNerney. Do you think those bills serve a good
838 purpose?

839 Mr. Menezes. We applaud the -- we applaud the committee
840 for the leadership, you know, that you have shown and I think
841 -- has one of them passed already, I believe? I mean, in
842 past Congresses?

843 Mr. McNerney. Right. So --

844 Mr. Menezes. And I will say that on the supply chain --
845 you have already -- you have already seen action, right. You
846 have seen action from NERC in proposing critical
847 infrastructure protection standards. So you see it pending
848 at FERC so certainly your past efforts have generated that
849 activity.

850 It's also generated activity here in this administration
851 because in the fiscal year 2019 request we requested
852 additional moneys to do -- to do what your bill is proposing
853 to do.

854 Mr. McNerney. Do you have any suggestions on improving
855 either one of those two pieces of legislation?

856 Mr. Menezes. Again, my suggestions would be as you
857 choose to send direction over -- and obligations over to the
858 Department of Energy if you can authorize resources we find

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

859 that that helps us because otherwise the department typically
860 would be forced to figure out where to get resources, you
861 know, that it's currently using for other --

862 Mr. McNerney. But speaking of resources, the fiscal
863 2019 budget looks like a 40 percent cut in the electricity
864 delivery and reliability account, which then is split into
865 two further accounts.

866 So you're saying on the one hand that you need resources
867 and on the other hand the administration is proposing
868 significant cuts in program funding.

869 So how can they reconcile those notions?

870 Mr. Menezes. I think the OE budget cut -- I believe
871 it's the case where it shows that we are pulling out almost
872 \$96 million and moving it into CESER. So it's creating a new
873 office. But we are still --

874 Ms. Hoffman. We see an increase in CESER budget line
875 for the 2019 request to -- yes, to \$96 million.

876 Mr. McNerney. I saw that, but I mean, I hear that you
877 keep saying we need more resources and yet the -- some of
878 these line items are being significantly slashed.

879 Mr. Menezes. Well, can I point out a victory that we
880 had -- that this office had with, you know, the

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

881 administration?

882 As many of you know, because of the several trips that
883 we've taken to Puerto Rico, for example, on the emergency
884 response, okay, a very critical part -- I know we've been
885 talking about cybersecurity but if you will allow me to talk
886 about that.

887 Again, when you got -- when we -- when we got over there
888 and looked at our resources, it was surprising. It was
889 surprising to me that all the work that DOE was doing on
890 emergency response in this hurricane season, for example, the
891 resources were, I thought, insufficient.

892 We asked the White House and they agreed to double the
893 budget -- double the budget of the emergency response, of
894 ISER -- our Infrastructure Security Energy Recovery.

895 Mr. McNerney. So you're saying that in general terms
896 the administration is acting in a way that'll increase your
897 resources. Is that -- is that what you're saying?

898 Mr. Menezes. In this -- in this area. In this area.

899 Mr. McNerney. In this area?

900 Mr. Menezes. Yes, and they -- it's in our fiscal year
901 2019, you know, to set up CESER. It's all in the
902 congressional justification for it. So --

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

903 Mr. McNerney. So, I mean are you --

904 Mr. Menezes. -- so we have support in the
905 administration on the topics that we are talking about today.

906 Mr. McNerney. So in a sense, are you robbing Peter to
907 pay Paul for the CESER?

908 Mr. Menezes. No. No, we are not. No, it's -- you
909 know, we are moving some existing programs over to CESER just
910 to begin to set up the office and so that was not a -- in
911 fact, that's an increase. That is actually an increase.

912 So, again, together it's going to be \$96 million and
913 that is an uptick of about maybe 16 percent, I think, from
914 what it was in fiscal year 2018.

915 Now, CESER didn't exist -- I mean, fiscal year 2017. So
916 it's a positive story here.

917 Mr. McNerney. All right. Mr. Chairman, I am going to
918 yield back.

919 Mr. Upton. I would just note that we've got Secretary
920 Perry scheduled to come next month to talk about the budget
921 as well.

922 Mr. Olson.

923 Mr. Olson. I thank the chair. Welcome to our two
924 witnesses.

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

925 My first question will be about Hurricane Harvey. I
926 followed your reports on Hurricane Harvey -- the situation
927 reports very closely as the storm hit and after the storm hit
928 and the impacts on our energy sector -- the Port of Houston
929 and the petrochemical complex.

930 DOE was a good responder -- a good partner. Worked hand
931 in hand with Governor Abbott, with the local county judges,
932 my county judge, Bob Hebert, Fort Bend County -- county judge
933 Matt Sebesta, Brazoria County -- county judge Ed Emmett,
934 Harris County.

935 He helped to get waivers they needed and the assistant
936 had to ensure the permits and waivers were issued without
937 delay. That's very important.

938 You mentioned, Mr. Menezes, that the budget has been
939 doubled now since lessons learned from Harvey for recovery
940 efforts.

941 What are some lessons learned like that that we could
942 apply in the future, going forward, from Hurricane Harvey?
943 Feel free, both of you, to make comments about that question.

944 Mr. Menezes. Well, I am aware that we did an after
945 activity report, I believe. I might defer to Pat. I think
946 she's in possession of that report.

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

947 I am not sure if it's finalized or not but certainly we
948 will make it available to all members of the committee.

949 Pat, do you have specific comments on that?

950 Ms. Hoffman. Yes, thank you very much for the question.

951 I think I would applaud industry's effort as well in
952 Hurricane Harvey and Irma and Marie and the strong work that
953 they've done.

954 Some of the lessons learned is as we continue to move
955 forward the industry is on the front line so exchanging
956 coordination of information is critical and absolute for
957 having an effective recovery and restoration process and I
958 think that's where you have seen the success as well as some
959 of the lessons learned.

960 From a department perspective, being able to engage our
961 power marketing administrations, to be continuing to use the
962 strategic petroleum reserve are all important aspects of how
963 the department can help in a restoration process.

964 The waivers and the coordination with industry were
965 always very positive and helpful to support so being
966 proactive in those areas as we continue.

967 As we look forward on cyber, as we think about that,
968 some of the needs and the issues are really being proactive

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

969 in looking at threat analysis, continuing to support the
970 mutual assistance program, and I think whether it's
971 hurricanes or cybers, really want to be able to engage
972 stronger in the mutual assistance program in support of
973 industry.

974 Mr. Olson. And you all read my mind. Let's now talk
975 about cyber.

976 Attacks happen on America every single day in
977 cyberspace. Bad actors have attacked our power industry.
978 They've attacked refineries, chemical plants, pipelines, all
979 across the spectrum.

980 You mentioned, Mr. Menezes, about AI -- artificial
981 intelligence. I formed a caucus here in the House to look at
982 those issues and I have a bill out to get us on board with AI
983 because that's our future to prevent some of these attacks.

984 My bill just basically says let's partner up with the
985 private to make sure these attacks don't happen through
986 cyberspace and use AI as a weapon.

987 AI is to empower people. It's not to have machines run
988 our world but it's to empower people with information to make
989 sound decisions when a disaster hits, like a hurricane.

990 And just like you commented about, the bill just

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

991 basically says let's have a true public-private partnership,
992 support the private sector, make them -- empower them with
993 the public sector's assistance, make sure we adjust jobs
994 because there's lots of jobs being lost or jobs being
995 created, have facts about jobs. Also bias -- there's natural
996 bias can be around information that may be biased -- avoid
997 that, and also privacy -- big issues.

998 But how can AI help out with the recovery from Harvey
999 and those you're facing?

1000 Mr. Menezes. Well, thank you for that question, Mr.
1001 Olson.

1002 You know, you raise a very important point. AI will be
1003 the future of how strong and resilient we can be because of
1004 the ever sophistication -- ever-growing sophistication of
1005 these attacks.

1006 With respect to your bill, again, the administration,
1007 you know, doesn't have a formal view of it. But as a general
1008 rule --

1009 Mr. Olson. It's good. Trust me.

1010 Mr. Menezes. As a general rule, all the direction and -
1011 - that you can provide to us, particularly in the use of
1012 tools that we can use within industry, former Chairman Barton

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

1013 had asked about, you know, attacks on the system and we are
1014 here representing the department and to be sure, the
1015 department is, you know, subject to attacks.

1016 It is our industry, however, that typically would be
1017 front line because the bad actors would look for soft
1018 targets. It might not spend a lot of effort in going after
1019 government assets that they think are going to be hard
1020 targets.

1021 So they're developing artificial intelligence to
1022 probably identify those risk levels. Well, industry is going
1023 to be on the front line and so it's very important that we
1024 get a set of tools and resources to be able to work with
1025 industry and to help industry have the resources and the
1026 knowledge and the wherewithal to be able to anticipate,
1027 predict, react, respond, and to make their systems more
1028 secure.

1029 Mr. Olson. Amen. Machines to empower people, not take
1030 over the world. Thank you for your comments. We're working
1031 for this.

1032 I yield back. Thank you, Chairman.

1033 Mr. Upton. Gentleman's time has expired.

1034 Mr. Tonko.

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

1035 Mr. Tonko. Thank you, Mr. Chair, and to Secretaries
1036 Menezes and Hoffman. Welcome. It's good to have you back
1037 again.

1038 I know DOE is taking its role as the sector-specific
1039 agency for cybersecurity seriously. But I have a few
1040 questions on the reorganization of the Office of Electricity
1041 Delivery and Energy Reliability.

1042 And, for the record, I am not necessarily opposed to the
1043 change but I would like to understand how it might affect DOE
1044 functions as we move into the future.

1045 Last month, Secretary Perry announced the creation of
1046 the Office of Cybersecurity, Energy Security, and Emergency
1047 Response which, as I understand it, will take existing
1048 programs from the Office of Electricity.

1049 Can you explain the vision for this cybersecurity office
1050 moving forward and do you expect to add new programs or
1051 functions to this office over time?

1052 Mr. Menezes. Thank you for that question. It's a very
1053 good question.

1054 When the secretary arrived over at the department, you
1055 know, and you have your security clearance, right, you get
1056 briefed and your world view changes, and almost immediately

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

1057 it became very apparent that one of the top priorities will
1058 be resources for cybersecurity and, again, and the physical
1059 security -- and we were in the hurricane seasons as well and
1060 so those three things came together very quickly. You know,
1061 just from an experience point of view.

1062 The department, of course, had a history of dealing with
1063 these issues and so we began a process where we evaluated
1064 everything within the department, our stakeholders.

1065 We talked to members of Congress and staff. We talked
1066 to the appropriators. We talked to OMB and the White House
1067 to formulate a process to bring the visibility and enhance
1068 the importance of these three topics.

1069 Since this is an initial creation -- not a creation but
1070 an establishment -- we had the authority -- you know, the DOE
1071 Org Act has the authority -- has given us the authority to do
1072 this -- but it wouldn't surprise you to find out that our
1073 appropriators, you know, had -- and others had some very keen
1074 views on what assets and what could we do to begin the
1075 process.

1076 So I would like to emphasize this is an initial step and
1077 so what we did was we identified within the department those
1078 programs -- successful programs to move -- to begin to

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

1079 process to move them over into a new office. So it was to
1080 simply begin that process.

1081 So we identified those two, the R&D within OE and the
1082 ISER function also within OE. It just happened to be that
1083 they're both in OE.

1084 It doesn't diminish what we continue to expect out of OE
1085 -- the Office of Electricity -- and it's just a beginning
1086 point for this new office.

1087 Mr. Tonko. And what will happen to other programs from
1088 the Office of Electricity?

1089 Mr. Menezes. What will happen with what?

1090 Mr. Tonko. Other programs from the Office of
1091 Electricity.

1092 Mr. Menezes. Well, they will continue and we will --
1093 you know, in a --

1094 Mr. Tonko. In that realm? In that given division?

1095 Mr. Menezes. No, the Office of Electricity will, of
1096 course, help in seeing the transition of them. But the
1097 Office of Electricity has other critical functions too that
1098 they will continue to do and --

1099 Mr. Tonko. Does that include the non-cyber R&D portfolio
1100 focussed on grid modernization and storage?

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

1101 Mr. Menezes. Yes. Yes. They will continue to do that.

1102 The other thing I want to point out is that one thing
1103 that we started at this department is it's a hallmark of this
1104 administration at DOE because of our backgrounds is to engage
1105 in much more of a collaborative effort between all of the
1106 programs.

1107 We are about busting these silos. Now, we are limited
1108 to the actual offices due to revenue streams. But as a
1109 practical matter, we collaborate. We share responsibilities
1110 and you know that we coordinate certainly all of our labs.

1111 So what you're seeing over there is a coordinating
1112 effort and a collaborative effort so that we can make use of
1113 the resources that we currently have to do the things that
1114 were important.

1115 Mr. Tonko. Will there be any split of the Office of
1116 Electricity staff -- the FTEs, or full time equivalents going
1117 in another direction or will they stay intact as it is now?

1118 Mr. Menezes. Well, we are in the process of identifying
1119 which employees will ultimately report to or be part of the
1120 new office and, you know, there's a series of procedures and
1121 policies that we have to follow in order to do that. But we
1122 are going to be in full compliance with all of the

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

1123 regulations that we need to do.

1124 Mr. Tonko. Well, it's important, I believe, that
1125 cybersecurity gets proper consideration in resources. I also
1126 believe the work being done by the Office of Electricity on
1127 grid modernization, on micro grids and on storage is also
1128 critical and I hope that these offices will be working
1129 together and not having to compete for resources. I think
1130 that's very important.

1131 Mr. Menezes. You have -- you have our commitment from
1132 that, sir.

1133 Mr. Tonko. Okay. With that, I yield back, Mr. Chair.

1134 Mr. Upton. Mr. Shimkus.

1135 Mr. Shimkus. Thank you, Mr. Chairman.

1136 It's great to have to have you -- good to see you again,
1137 and welcome to the committee.

1138 So I hate acronyms. So CESER is the Office of
1139 Cybersecurity, Energy Security and Emergency Response
1140 Management, correct?

1141 Mr. Menezes. Yes, sir.

1142 Mr. Shimkus. That's -- when you use CESER that's what
1143 you're referring to and that's a new organization within the
1144 Department of Energy to address grid resiliency, which can be

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

1145 defined by either concerns of attacks or cybersecurity or the
1146 like. Is that fair?

1147 Mr. Menezes. That is fair, and it will be headed up by
1148 an assistance secretary.

1149 Mr. Shimkus. And you want to, I think -- you used a
1150 good terminology -- you want to bust the silos that occur in
1151 major bureaucracies so we have people talking to each other.

1152 Mr. Menezes. Yes, sir.

1153 Mr. Shimkus. So, so far so good. I think it's needed.
1154 It's something we've talked about for a long time.

1155 So let me address a couple questions, and former
1156 Chairman Barton had raised just the whole cybersecurity --
1157 how do you define.

1158 So that's the whole issue of what could be points of
1159 entry. My colleague, Mr. Tonko, mentioned the micro grids,
1160 which kind of are developing in our -- in our country and
1161 then the question would be cybersecurity of entry through a
1162 data control system that then could make instructions to
1163 transformers, through generation, through the like.

1164 So that's one way there could be disruption. And isn't
1165 that also the reason why we want -- which we did in the last
1166 Congress, talked about quite a bit -- I think you mentioned

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

1167 the fact that we had moved the bill -- we do want some
1168 communication between our government agencies and the private
1169 sector. Why is that important in this debate?

1170 Mr. Menezes. They're on the front line. I mean, it is
1171 -- it is their -- they're, A, providing the service. They
1172 are doing the things that we've come to expect from our
1173 energy infrastructure.

1174 They own and operate the actual facilities, they develop
1175 the software, and they rely on the supply chain, all of which
1176 could be vulnerable. And so as the government, you know,
1177 agency responsible for that, we need to ensure that they do
1178 have the training, they have the know-how.

1179 We share with them information upon which they can, you
1180 know, identify, train, and respond and recover, ultimately.
1181 So they're on that front line, which is not easy. It's a lot
1182 more than --

1183 Mr. Shimkus. So, they're seeing some front line attacks
1184 that they can then talk to you and we can address training
1185 and -- not remediation but counter measures, I guess, would
1186 be.

1187 Are we getting -- is CESER able to then also talk to our
1188 intel communities for higher level cyber concerns that could

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

1189 be then passed on to the private sector and say, hey, watch
1190 out for this?

1191 Mr. Menezes. Correct. In fact, you know, we -- the
1192 information sharing and analytical center, you know, has
1193 developed CRISP, which is the Cybersecurity Risk Information
1194 Sharing Program.

1195 Mr. Shimkus. Thank you.

1196 Mr. Menezes. Yes. Just threw out a couple more
1197 acronyms your way. And the importance of that is that while
1198 the ISAC manages that, it uses information that is shared by
1199 our intelligence-counterintelligence that we receive.

1200 I had mentioned previously as members of the NSC, you
1201 know, we have resources that some agencies do not have and
1202 with special, you know, protections in place for classified
1203 information we share that information to the extent that we
1204 can, and it has been very helpful and useful in identifying
1205 threats that without it we still would not necessarily know
1206 that our system was even attacked.

1207 Mr. Shimkus. You know, let me go quickly. My time is
1208 almost expired. Talking about electromagnetic pulses either
1209 intentional or naturally occurring, the hardening of systems,
1210 the cost, and the communication with the private sector, I

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

1211 mean, the private sector when we talk about it they just say,
1212 oh, the cost is too much -- can't do that.

1213 And there is some cost, but I think it is a concern that
1214 I hope that you all and maybe even this CESER subsection of
1215 DOE is talking about.

1216 Mr. Menezes. Well, I would say that a hallmark of any
1217 technology that we develop, any training system, it has to be
1218 cost effective. Clearly, we cannot give them information
1219 that imposes such a burden that --

1220 Mr. Shimkus. But are we talking on EMPs both naturally
1221 occurring or bad actors? Is that part of what you're
1222 discussing or --

1223 Mr. Menezes. Yes, it's -- yes. CESER is -- does have
1224 the energy security part of it so it would include the EMPs
1225 as well and the GMDs, if you want another acronym.

1226 Mr. Shimkus. Thank you. My time has expired.

1227 Mr. Upton. Mr. Loeb sack.

1228 Mr. Loeb sack. Thank you, Mr. Chairman, for holding this
1229 important hearing and I do appreciate both of you being here
1230 as well -- the witnesses. Thank you so much.

1231 I don't think that we can argue with the fact that it's
1232 absolutely critical that we do ensure the safety of our

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

1233 energy infrastructure and in the 21st century we all know
1234 that a very critical emerging threat that's been talked about
1235 today is cyberattacks and we've got to just work as hard as
1236 we can to make sure that we protect, you know, that energy
1237 infrastructure.

1238 I am very proud to work with Chairman Upton. We
1239 actually can do some things on a bipartisan basis in this
1240 committee and I think we've done a lot, but to make sure that
1241 we get adopted eventually and implemented H.R. 5175, the
1242 Pipeline and LNG Facilities Cybersecurity Preparedness Act.
1243 So I want to thank the chair for working with me on that, and
1244 vice versa. It's great.

1245 I do think it's absolutely critical that we make
1246 progress to ensure the cybersecurity and safety of our
1247 natural gas and LNG facilities and I believe that this bill
1248 is a step in the right direction.

1249 Physical threats to pipelines and energy infrastructure
1250 do remain a significant threat, as everyone on this committee
1251 knows and you folks know. But today -- these days our
1252 pipeline system is increasingly technologically sophisticated
1253 as we get new pipelines put in place and that does, I think,
1254 probably increase our vulnerability in some ways to

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

1255 cybersecurity attacks. And for the life of me, since I speak
1256 a little Spanish and even more Portuguese, I cannot figure
1257 out yet how to pronounce your name -- why it's only two
1258 syllables.

1259 Mr. Menezes. It's Americanized Portuguese.

1260 Mr. Loeb sack. Yes, I am aware of that.

1261 Mr. Menezes. You were right on that. And so we've
1262 apparently had the middle E become silent. So it's Menezes.

1263 Mr. Loeb sack. Thank you for explaining that. Menezes.
1264 Thank you so much. Thanks for being here today.

1265 As we mentioned, DOE has to play a critical role in
1266 ensuring the safety and security of this infrastructure can
1267 you elaborate a little more about the level of vulnerability
1268 of our pipeline system to cyberattacks?

1269 I mean, you have spoken about that some this morning
1270 already but can you elaborate even more, within the context
1271 of an open hearing, at any rate.

1272 Mr. Menezes. Right, and so I will keep it general.

1273 Perhaps the vulnerability on the pipelines exist because
1274 it's a transportation system, you know, at its sense and it -
1275 - probably the control mechanisms, the communication systems,
1276 and the operations systems, they may not be as fully

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

1277 integrated, say, as a fully operating electricity, you know,
1278 company in all sectors, for example, in the -- and so as a
1279 consequence it may be the assumption that because they're
1280 more simplified, if you will, you might not have to develop
1281 technologies to make them as resilient as any other point of
1282 entry.

1283 So as they are improving their efficiencies they are
1284 bringing in new softwares, you know, and new devices and,
1285 again, the result is you see the flow of product.

1286 But as they become more sophisticated, we need to ensure
1287 that what they put in has the resiliency programmed in at the
1288 front end --

1289 Mr. Loeb sack. Right.

1290 Mr. Menezes. -- so that it's resilient, and that's
1291 going to be the key. So --

1292 Mr. Loeb sack. Because I was kind of shocked actually at
1293 an earlier hearing when I found out that there isn't a lot of
1294 federal involvement, you know, when it comes to pipelines in
1295 the first place.

1296 There's, you know, sort of oversight after they're
1297 already in place but it's -- there's precious little
1298 involvement as they're going in. I think that's one area

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

1299 where there can be more involvement to make sure that these
1300 things are put in properly and that they are secure.

1301 Mr. Menezes. Yes. We are doing what we can in our
1302 role, you know, for the oil and natural gas subsector
1303 coordinating council and we do have regularly -- you know,
1304 meetings -- we have monthly meetings with the group and we
1305 have quarterly meetings as well with the larger group, you
1306 know, that is co-led by DOT and DHS and we do bring in all
1307 those other agencies. So we are -- we have a structure
1308 within the existing authorities to try to address that.

1309 Mr. Loeb sack. Yes.

1310 Mr. Menezes. There's a lot of information sharing and
1311 it's important. You have got to be at the meetings. You
1312 have got to -- you have got to be willing to participate.
1313 And they are, by the way. I mean, they are.

1314 Mr. Loeb sack. And just very quickly -- my time is
1315 running short. Thank you very much. I want to make sure
1316 that, you know, that you folks are prepared as a department
1317 in the event that this legislation is passed, be able to put
1318 this into effect.

1319 I do have one other question. Maybe you could respond
1320 in writing to me if that's possible. We have a lot of

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

1321 existing pipelines now that may not be as subject to
1322 cybersecurity threats.

1323 I don't know the answer to that, and maybe you could
1324 distinguish in writing for me those that are already in the
1325 ground, already exist, versus the newer ones which might be
1326 more vulnerable, given the technology, and I would really
1327 appreciate an answer to that question, perhaps in writing if
1328 that works for you.

1329 Mr. Menezes. We'll be happy to get back with you on
1330 that.

1331 Mr. Loeb sack. Thank you so much.

1332 Mr. Menezes. Thank you.

1333 Mr. Loeb sack. Thanks. Thank you, Mr. Chair, and I
1334 yield back.

1335 Mr. Upton. Mr. Latta.

1336 Mr. Latta. Well, thank you very much, Mr. Chairman, for
1337 holding today's hearing. This is very, very important when
1338 we are talking about cybersecurity and also the emergency
1339 response.

1340 But before I do, and I know he's stepped out right now,
1341 but I just want to recognize Mr. McNerney from California
1342 who's been working with me and all the hard work that he's

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

1343 done on the issues, especially with grid security.

1344 Mr. Under Secretary and Ms. Hoffman, thank you very much
1345 for being with us today because, again, this is a very, very
1346 important topic that we are dealing with today.

1347 But if I could start with -- in your testimony you noted
1348 that securing the electric sector supply chain is critical to
1349 the security and resilience of the electrical grid and
1350 products must be tested for known vulnerabilities in order to
1351 assess risk and develop mitigations.

1352 Would you explain the consequences of having a device or
1353 a component in the electric system that poses a cybersecurity
1354 vulnerability and, you know, are there -- more importantly,
1355 do we have the adequate measures right now in place to
1356 protect that supply chain?

1357 Mr. Menezes. Great question, and thank you very much
1358 for it.

1359 Our supply chains probably would be our most vulnerable
1360 areas and by supply chain it could be any component part, you
1361 know, that any of our energy partners, you know, would rely
1362 on.

1363 That could make our entire system vulnerable. If point
1364 of entry could be on a -- what you think is a routine

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

1365 software program, perhaps to do accounting, you know, for a
1366 supplier of valves, for example.

1367 Okay. So the importance has been noted in a couple of
1368 ways. NERC has already proposed CIPs -- the critical
1369 infrastructure protection standards -- which is pending at
1370 FERC to address this very supply chain issue with respect to,
1371 you know, the agencies that's responsible for developing our
1372 mandatory reliability provisions for the electricity grid and
1373 this administration in fiscal year 2019 has requested
1374 additional money so that we, with our labs and our experts,
1375 can similarly test these products for -- you know, for their
1376 vulnerabilities and we can mitigate those vulnerabilities.
1377 So we can make the whole system stronger by really addressing
1378 those most vulnerable, if you will.

1379 Mr. Latta. Also in your testimony you referenced the
1380 budget proposal to invest in testing supply chain components
1381 and systems and under the Cyber Sense bill seeks to authorize
1382 a related program focused on identifying and promoting
1383 cybersecure products using the bulk power system.

1384 Again, would you elaborate on the work that the DOE is
1385 doing to test the supply chain components and systems and
1386 also in a follow-up of that, how does the quality control for

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

1387 supply chains help in ensuring that cybersecurity?

1388 Mr. Menezes. I will allow Pat has more experience
1389 directly on this.

1390 Ms. Hoffman. So through the Electric Sector
1391 Coordinating Council and our discussions with industry, the
1392 supply chain need has been highlighted as extreme importance
1393 and so I appreciate the committee's efforts in this area.

1394 What we are looking at is actually partnering with
1395 industry to test and do a pilot program to test several
1396 components that are critical in the industry to do a deep
1397 dive testing of the components and subcomponents.

1398 What the industry would like to understand is all the
1399 vulnerabilities so they can assess their risk and the risks
1400 that they are facing.

1401 So part of what the NERC standards also emphasize is the
1402 disclosure of vulnerabilities and the continued testing.

1403 One of the things that we want to emphasize is as we are
1404 looking at testing of components there may be a new
1405 vulnerability or a new threat vector that's discovered
1406 tomorrow. So what should be institutionalized is a process
1407 for continual improvement in cybersecurity.

1408 As we've talked about the definition of cybersecurity

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

1409 being secure, information technology, secure firmware
1410 software, the information side of the industry, we really
1411 need to continually test product, continually improve
1412 products, just like we would do from a manufacturing point of
1413 view.

1414 So that philosophy of continual improvement is
1415 absolutely critical and testing with the national
1416 laboratories can help identify some of the vulnerabilities
1417 and continue to advance the improvement of products.

1418 Mr. Latta. When you're testing the products and getting
1419 that -- how do you get that information out to the industry?
1420 Because just like this past Friday I spoke at one of my
1421 electric co-ops in my district -- I have the largest number
1422 of co-ops in the state of Ohio -- and not too far in the past
1423 from that I also spoke at another one.

1424 But how do you get that information out, especially with
1425 these products, to make sure that they know that they're, A,
1426 available and, B, that they're tested and they ought to be
1427 utilized once they're approved?

1428 Ms. Hoffman. So the goal is to get the information out
1429 through the supply chain community and I am sure the next
1430 panel will talk about that and details of having that

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

1431 disclosure and that collaborative relationship with the
1432 industry with the mitigations and the solutions.

1433 But the other area is through our national laboratories
1434 and through, say, the ISAC program to continue to really
1435 identify some of the vulnerabilities but get it out to
1436 industry and all the components and all the -- and all the
1437 sectors in the industry.

1438 Mr. Latta. Yes. Well, thank you very much, and I yield
1439 back.

1440 Mr. Upton. Okay. I would recognize Mr. Kinzinger. No,
1441 I am sorry -- Mr. McKinley.

1442 Mr. McKinley. Well, I wasn't expecting that. Thank
1443 you, Mr. Chairman.

1444 Mr. Menezes -- or Secretary Menezes, a couple questions
1445 quickly, if I could.

1446 Almost three years ago, to today -- three years ago we
1447 had Tom Siebel -- he's the CEO of C3 Energy -- testify before
1448 us about cybersecurity and the grid, and he made a very
1449 revealing comment.

1450 He said that there were just a group of engineers --
1451 just a small group of engineers would be able to shut down
1452 the grid on the East Coast in four days, and that would shut

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

1453 -- it would shut down the grid between Boston and New York.

1454 Did you -- did you -- did you ever see his testimony or
1455 respond back to him on that?

1456 Mr. Menezes. I did not see it.

1457 Mr. McKinley. It just -- the fact that a lot of things
1458 have happened and I appreciate your remarks -- your answers
1459 back to Barton where you said that we are constantly under
1460 attack.

1461 And maybe it's worked but I am saying there are groups
1462 saying the engineers can do this. They can still get past
1463 your system if they want to do that.

1464 So the other thing, and just maybe it was coincidence in
1465 2015 Ukraine was faced with a cyberattack. The Russians
1466 apparently are the ones that contributed to that.

1467 What have we learned from that? Did we interact with
1468 the Ukraine and find out how that was shut down so we could
1469 prevent that from happening here?

1470 Mr. Menezes. Since that occurred before I arrived, I
1471 will just --

1472 Mr. McKinley. Just quickly, because I've got a series
1473 of more questions. Have we -- yes or no, have we worked --
1474 interacted with them?

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

1475 Ms. Hoffman. The answer is yes. We participated -- we
1476 worked closely with them. We actually gained some knowledge
1477 of the attack. We have had training sessions with industry
1478 and analyzing so lots of --

1479 Mr. McKinley. Okay. But we've learned -- we've learned
1480 something from it.

1481 But then let me go also now go back even further in
1482 history. Back in 2007 there was an Aurora generator test
1483 that was maybe controversial. Are you familiar with it,
1484 Secretary?

1485 Ms. Hoffman. Yes, I am very familiar with it.

1486 Mr. McKinley. Okay, you are. Okay. What have we --
1487 because they are -- it was -- they were able to display that
1488 just by entering 21 codes they could blow up a generator and
1489 thereby set in motion a blackout in the United States.

1490 What have we done to prevent those 21 codes from being
1491 introduced?

1492 Ms. Hoffman. So we worked with industry in analysing
1493 that -- the Aurora attack and looking at the focus on relays
1494 and the vulnerabilities in that. The industry has looked at
1495 mitigation solutions. We've done information sharing with
1496 industry.

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

1497 So it's been an active engagement with the industry.

1498 Mr. McKinley. Have we taken -- have they taken action,
1499 implemented things to prevent that from happening with that?

1500 Ms. Hoffman. The industry has implemented and has taken
1501 action per some of the requests from NERC in doing that.

1502 Mr. McKinley. Okay. The third question or second
1503 question has to do with vulnerability because you talk about
1504 emergency, and we have a report here from New England saying
1505 that they're not going to have enough gas if there's an
1506 emergency situation that's coming up and they say that
1507 because during the cold weather they're having to divert
1508 those -- that gas to homes and so there's not going to be gas
1509 for power plants.

1510 We've experienced that in West Virginia. We had a black
1511 start plant that had to shut down during the Polar Vortex and
1512 just this last winter was told that they were on day to day -
1513 - they may have to shut down as well.

1514 So I am wondering about in an emergency how are we going
1515 to make sure that we have gas available for our power
1516 generation, let alone cyberattack? Is there a solution to
1517 that?

1518 Mr. Menezes. Well, we need more infrastructure, to be

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

1519 sure, both what you referenced. The New England ISO,
1520 together with NERC, has identified areas in the country where
1521 we rely heavily on natural gas for our power generation to
1522 ensure our resilient and the reliability of our grid.

1523 It's in those constrained areas where it's important
1524 that we try to increase the infrastructure so that we can
1525 have adequate supply.

1526 That has been the hallmark of this administration so
1527 that we have, you know, a sufficient diversity of fuels
1528 including natural gas.

1529 Mr. McKinley. If I could, Mr. Secretary, but we are
1530 relying on Russia for bringing in LNG to New England and just
1531 -- and this is -- now they've unloaded their second tanker on
1532 this.

1533 So if we are going to be energy dominant, how are we
1534 energy dominant if in an emergency if we are going to rely on
1535 a foreign government to provide us a natural resource to be
1536 able to provide electricity in New England?

1537 Mr. Menezes. Well, good question. Well, the president,
1538 you know, has announced his efforts to -- for the
1539 infrastructure bill and contained therein or recommendations
1540 on how we can help to, you know, site and build, construct,

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

1541 and permit these -- in this case, natural gas pipelines, you
1542 know, to address the issue that you raised.

1543 Mr. McKinley. Right.

1544 Mr. Menezes. It's not limited to that but it is a
1545 component part of that. So it's also a function of working
1546 with the states because, you know, under federalism the
1547 states have a big role to play as to any interstate gas
1548 pipelines --

1549 Mr. McKinley. I understand. I don't want a heavy hand
1550 --

1551 Mr. Menezes. There's so much we can do.

1552 Mr. McKinley. I don't want the heavy hand of the
1553 federal government stepping in. But there is a concern.

1554 Just in closing quickly, could you tell me what keeps
1555 you up at night? What is your biggest worry, biggest
1556 concern, from your position?

1557 Mr. Menezes. Well, in the cybersecurity, clearly. I
1558 mean, this is -- your worldview changes as you get a security
1559 clearance and you get briefed in on what's happening.

1560 I mean, I think you all have been read into a lot of
1561 this stuff. But yes, that causes me to stay awake and,
1562 frankly, as we have seen what are becoming, you know, common

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

1563 winter events when our system is stressed it seems as though,
1564 you know, we may be faced with an inadequate supply of what
1565 used to be baseload.

1566 So the closure -- premature closing of what
1567 historically, you know, has been -- whether it's nuclear or
1568 clean coal, these facilities are going offline.

1569 We are becoming more reliant on natural gas, which is
1570 not a bad thing. But it does have to get through pipelines
1571 and we've seen in the cyclone bomb, if you will, on the East
1572 Coast we see natural gas actually having price spikes, which
1573 forces the operators to go to nuclear, coal, and, believe it
1574 or not, oil. So those are the things that keep me up at
1575 night.

1576 Mr. McKinley. Okay. Thank you very much. I yield
1577 back.

1578 Mr. Kinzinger. Thank you, Mr. Chairman. Thank you all
1579 for being here.

1580 I know we all recognize the very serious threat we face
1581 with cyberattacks. It can be especially difficult as the
1582 threats we face are constantly evolving and can vary
1583 significantly.

1584 Individual bad actors are constantly attempting to

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

1585 obtain data -- bank routing numbers or medical records from
1586 everyday Americans -- while state actors, for example, North
1587 Korea's attack on Sony Pictures or China's break of the OPM
1588 files, represent a very different kind of threat. And for a
1589 lot of these nonstate actors, a very low barrier of entry.

1590 In the energy sector, we have to prepare for any level
1591 of attack, given the innerconnectedness of the grid. Even a
1592 relatively small scale attack on a single asset could have
1593 serious consequences.

1594 I will ask both of you, just whatever you can do with
1595 this. If you can elaborate on how the work the DOE does,
1596 like R&D, industry information sharing, and physical
1597 hardening of assets to combat cyberattacks, is flexible and
1598 able to evolve as the threats change.

1599 You might have addressed this to some extent.

1600 Ms. Hoffman. Sure. I appreciate the question. We've
1601 been actively engaged with industry and we know that the core
1602 components of a strong cybersecurity program really looks at
1603 building capabilities.

1604 And so our goal is to help industry build as much
1605 capabilities as possible so our R&D program is focussed on
1606 supporting that capability development.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

1607 So from an information sharing program, let's look at a
1608 continuous monitoring or an ability for intrusion detection.
1609 It's a capability that the industry needs to have and a
1610 support that we've been providing through the risk
1611 information sharing program that we've developed with
1612 industry.

1613 Other activities is really trying to get ahead of the
1614 game and looking at threat analytics but engineering some
1615 cyber solutions to prevent and mitigate some of the events
1616 that are occurring or the events that could cause damage to
1617 the equipment.

1618 One of the things that we want to do is look at
1619 continued sharing of programs but also incident response and
1620 I think that is the next phase of which we must advance in is
1621 supporting the development of incident response capabilities
1622 so those tools and capabilities to identify where actors are
1623 on the system but also to prevent them from continuing to
1624 progress from a cyberattack point of view.

1625 So our R&D program, we also have two strong university
1626 programs, one with the University of Illinois and one with
1627 the University of Arkansas, to develop the next generation
1628 solutions as well as partnerships with the national

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

1629 laboratories, looking at a moving target type activity to
1630 think about how could we make the system more dynamic.

1631 Mr. Kinzinger. And to drill down a little bit, it was
1632 mentioned, sir, in your testimony that the cyberattack on
1633 Ukraine, which the CIA attributes to Russian military
1634 hackers, we've experienced a number of attacks by state
1635 actors here.

1636 Does DOE plan for these kinds of coordinated attacks
1637 differently and what systems are in place to ensure that the
1638 DOE is receiving the most pertinent and up to date threat
1639 information from our intelligence agencies?

1640 Mr. Menezes. Right. I mean, as Pat Hoffman had
1641 testified earlier, the lessons that we learned with respect
1642 to the Ukraine.

1643 But I would like to point out that we work with NERC on
1644 the GridEx exercises where we have these kinds of situations
1645 and we bring industry in, government in, all the stakeholders
1646 in, and they participate in a real live situation, if you
1647 will, that brings to bear the most sophisticated approaches
1648 that we have seen to date.

1649 So it's been ongoing. It had been a success story by
1650 all measures. We gain a lot from that. The industry gains a

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

1651 lot from that. I can -- I can vouch from industry that you
1652 take those lessons learned and you implement them.

1653 And they could be as simple as revealing, for example,
1654 that you might need satellite phones, for example, because
1655 when you lose your power you need to be able to communicate
1656 and you need to have enough satellite phones.

1657 So it can be something as simple as that to something
1658 much more sophisticated to developing, you know, a more
1659 resilient software program, for example.

1660 Mr. Kinzinger. Thank you.

1661 And DOE has a long history of promoting a strong energy
1662 workforce and I think we all recognize the need for well-
1663 trained cybersecurity professionals in both the private and
1664 public sector.

1665 As part of the new announced Office of Cybersecurity,
1666 Energy Security, and Emergency Response, does DOE plan to
1667 engage in cybersecurity workforce development? For whoever
1668 wants to answer that.

1669 Mr. Menezes. Right, and that -- to repeat what we had
1670 previously said, the short answer is yes. We currently have
1671 in place training programs throughout the process, whether it
1672 be at the front end on, you know, on preparedness.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

1673 We make sure that you have training, to anticipate,
1674 identify, you know, the new threat vectors, how to respond --
1675 you know, how do you recover.

1676 And, of course, the -- what's most important is to have
1677 the innovative R&D in place. So while driven primarily by
1678 our labs together with industry it's important that we train
1679 the workforce, and the workforce is not just in the
1680 departments, you know, or the governments.

1681 It's in the industries themselves and it's not limited
1682 to just the big player in the industries but it's all the
1683 participants which we have in place right now to cover, you
1684 know, the large utilities of all sizes whether you're a muni
1685 or a co-op.

1686 So we are trying to develop and implement and train and
1687 maintain and enhance these programs.

1688 Mr. Kinzinger. Thank you all, and thanks for your
1689 service to the country.

1690 I yield back.

1691 Mr. Upton. Mr. Griffith.

1692 Mr. Griffith. Thank you very much, Mr. Chairman, and
1693 thank you, Mr. Undersecretary, for being here. I appreciate
1694 all your work on emergency response and Puerto Rico, and I

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

1695 know you're passionate about trying to make everything safer.

1696 I am going to shift gears a little bit. My colleagues
1697 have asked some great questions on what we already have and I
1698 appreciate that, and my colleague on the other side of the
1699 aisle, Congressman Loeb sack, touched on this earlier and
1700 asked you all to get back with him on whether the new
1701 pipelines with more technologies are more vulnerable than
1702 older ones already in the ground.

1703 I would hope that you would include me in whatever
1704 response you give him because I am interested in that.

1705 And we have a new pipeline that's being built in my
1706 district and a lot of my constituents are concerned about all
1707 kinds of issues.

1708 And so I would also ask, and not expecting you to have
1709 an answer today, but also ask that you take a look at what
1710 can we do as far as making sure that the new pipelines have
1711 technology in them that lets us know if there's an earthquake
1712 in the area, a collapse somewhere.

1713 The faster that people know about it the faster we can
1714 respond. Folks are very concerned about, you know, possible
1715 breaches.

1716 I've mentioned natural disasters but it could also be

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

1717 bad actors from outside. And also I think maybe we need to
1718 look and would like your help in figuring out if we need to
1719 draft legislation that would get DOE in on the front end, as
1720 Mr. Loeb sack pointed out, because, you know, I am not sure
1721 that FERC is looking at, okay, how can we make this pipeline
1722 less vulnerable -- should we move it away from the more
1723 occupied area of a particular -- let's say we have a farm.
1724 Should we move it away from where the house and the barn are
1725 and -- to an area that's less likely both to be attacked by
1726 bad actors or to create a problem should there be some kind
1727 of an issue.

1728 Likewise on that same vein -- I am going to give you a
1729 second here but I just want to get it all out before I forget
1730 something -- it would also seem to me that DOE would want to
1731 know who had extra capacity and a new pipeline with the right
1732 kind of technology could tell you instantly whether or not
1733 they had the ability to take on more natural gas at a
1734 particular moment should there be a failure in some other
1735 area so that we can get that natural gas to where it needs to
1736 go by rerouting it possibly.

1737 And we've got two coming through Virginia, one through
1738 my district, one going through Bob Goodlatte's and other

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

1739 districts.

1740 While we are laying this pipe is the time to put in any
1741 new innovations and new thoughts into that, and I am just
1742 hoping that DOE has some thoughts and plans.

1743 And I will give you an opportunity to respond to that
1744 now but also ask that you get back to me on all those
1745 thoughts that are important to me intellectually but also
1746 important to the constituents in my district -- that they
1747 want to feel a little bit safer about this pipeline coming
1748 through their back yard.

1749 Mr. Menezes. Well, thank you for the series of
1750 questions and the commentary. Of course, we -- you know, we
1751 agree with the issues that you have identified. If I can
1752 just take a quick crack at it, if you will, Pat, and then I
1753 will defer to you.

1754 But, first of all, with respect to developing the
1755 technology on the -- on the resiliency side of it, first of
1756 all, you hit on a key point.

1757 As you know, our system is becoming more and more open.
1758 We are actually excited about all the possibilities of
1759 getting more inputs on either side of the meter. Individuals
1760 will -- to be able to gain input.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

1761 We are -- we are increasing the flexibility of our grid
1762 for a variety of good reasons -- make it more resilient, more
1763 reliable. However, every time we make it smarter it's a new
1764 entry -- it's a potentially new entry.

1765 So in my conversations with the lab directors, for
1766 example, whom we meet with regularly on this, as they're
1767 developing ways to make things more efficient or greater
1768 access, more individuals who can get electrons -- you know,
1769 produce whatever they want when they want it, as an example,
1770 I make sure that my message to them is as you develop that
1771 new technology, please, at the front end, design it in such a
1772 way that it is resilient and it is secure. And so that
1773 message is out and they are -- they are doing that. So
1774 that's on that question.

1775 With respect to the question on the extra capacity to
1776 take on more natural gas, I will say that we work with our
1777 other partners. I mean, we work with FERC. We work with
1778 NERC.

1779 We are aware of the interoperability issues there. We
1780 are also aware of other potential issues that might give
1781 rise, when you're talking about sharing market information
1782 and that kind of thing. So those things have to be looked at

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

1783 and considered carefully.

1784 But the short answer is yes, to the extent that as we
1785 are making these improvements and we are spending these
1786 resources and we are developing these programs and we are
1787 improving technologies, I think you can look at it
1788 holistically, if I can use that word, to describe what you
1789 were discussing.

1790 And with that, I will pass it to Pat if she wishes to
1791 say something.

1792 Ms. Hoffman. Just really quick, adding the resiliency
1793 looks at -- looking at four and minus one contingency or
1794 single point of failures.

1795 I think also another point that I would like to bring up
1796 is you're absolutely right, having the ability to increase
1797 the amount of sensors in the system to be able to predict and
1798 get ahead of the game as we look at failures as a critical
1799 component that we think is an important part of our program
1800 in improving resilience.

1801 Mr. Griffith. I appreciate it, and I yield back, Mr.
1802 Chairman.

1803 Mr. Upton. Mr. Johnson.

1804 Mr. Johnson. Thank you, Mr. Chairman, and I want to

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

1805 thank both of you for being here today. Such a -- such an
1806 important topic, cybersecurity, particularly as it relates to
1807 energy and our energy infrastructure.

1808 I dare say that most people don't really think about the
1809 implications of cybersecurity when it comes to infrastructure
1810 and the importance of it.

1811 So when looking at emerging cybersecurity risk and
1812 particularly threats of the highest consequence to energy
1813 infrastructure, it seems critical to me that DOE have full
1814 visibility on the greatest infrastructure risks and
1815 consequences.

1816 Do you believe, Mr. Undersecretary, at this point that
1817 DOE has sufficient visibility to day on what those risks and
1818 vulnerabilities are?

1819 Mr. Menezes. Well, we are doing -- we have -- currently
1820 we have sufficient visibility but it is the future that we
1821 need to anticipate. And so today's hearing is about how it
1822 is that these increasing threats will require us to have
1823 greater visibility in the resources which is why we've set up
1824 this office that we affectionately refer to as CESER.

1825 Mr. Johnson. Yes.

1826 Mr. Menezes. So it is -- we are looking -- we are doing

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

1827 okay today, as several members have identified. It seems as
1828 though while we have the constant threats we've been able to,
1829 you know, avoid a major catastrophe.

1830 But we want to make sure that going forward we have the
1831 visibility and the resources. I think Ms. Hoffman would like
1832 to say something.

1833 Mr. Johnson. Sure.

1834 Ms. Hoffman. I think it's important to continue to
1835 support the information sharing between industry and the
1836 Department of Energy in understanding the number of events
1837 that are going out.

1838 The critical need, as the undersecretary has talked
1839 about, is moving forward -- that we want to get ahead, we
1840 want to see what the next generation threats are.

1841 And so that close public-private partnership and
1842 information sharing and the flexibility and the freedom for
1843 the industry to voluntarily share information with the
1844 department is absolutely important.

1845 Mr. Johnson. Okay. I am encouraged by that answer
1846 because I've long held the belief and I still do that this is
1847 not -- this is not an issue that has an ending to it.

1848 I mean, this is not a race that we are going to run and

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

1849 cross the finish line. As soon as we figure out how to keep
1850 the bad guys from getting into our networks, especially in
1851 the digital world where everything is connected, as soon as
1852 we figure that out, we've got another problem right on the
1853 tail end of that.

1854 So I appreciate that there's a forward look and an
1855 understanding that that's the case. So what measures can you
1856 take to increase visibility of security threats today?

1857 Now, you mentioned some of them. You have created this
1858 office. Can you give us some examples of what some of the
1859 future look areas are?

1860 Mr. Menezes. I will take the -- you know, the larger
1861 view and I will defer then to Ms. Hoffman on the specifics.

1862 But the creation of the CESER or the establishment of
1863 the CESER program is just an initial step and we are taking
1864 existing programs and putting it in.

1865 Our vision, though, is much greater and so we want to
1866 work with this committee and other members of Congress -- you
1867 know, the White House, our other agencies -- to actually put
1868 in place other programs, projects, and the resources to
1869 anticipate the increasing threat.

1870 And so that's the big picture and that's why it's

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

1871 important, we think, to set this up and have it under an
1872 assistant secretary.

1873 Mr. Johnson. Okay.

1874 Ms. Hoffman. So I would just add three things. It's
1875 really active threat investigations, so going after and
1876 looking at future threats and tactics and techniques that a
1877 bad actor would utilize against the system. So it's really
1878 being proactive, moving forward.

1879 It's continuing to support the threat analysis programs
1880 such as the CRISP program where we are actively looking at
1881 indicators and looking at sharing of information, whether
1882 it's an indicator that's discovered by industry or by the
1883 federal government and allowing that to be shared with
1884 industry as quickly as possible.

1885 And then it's really getting to the point that we can
1886 get to machine-to-machine sharing and we can get proactive
1887 whether it's with our official intelligence, whether it's
1888 with other capabilities.

1889 But it's very -- I would say going from the current
1890 understanding mode to more of a proactive mode are the areas
1891 that we want to move forward on.

1892 Mr. Johnson. You know, one of the things that -- when I

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

1893 -- when I was on active duty in the Air Force even as far
1894 back as the -- as the mid-'90s as the world began to be
1895 interconnected and we started talking about things like
1896 network-centric warfare and the digital age and what that
1897 meant to national security, risk management and risk
1898 assessment was -- began to be pushed down in the Department
1899 of Defense as part of our overall culture. So it's one thing
1900 to have our leaders talking about it.

1901 I know I am over my time. Can you give us 30 seconds on
1902 what you're doing to make risk assessment and risk management
1903 where cybersecurity is part of the culture in DOE?

1904 Ms. Hoffman. Just really quick -- we have a risk
1905 management tool that we've provided and work with industry
1906 on. We have a cyber capabilities maturity model, which is
1907 also a risk assessment tool.

1908 The industry is looking at the NIST risk assessment
1909 capabilities. So that is being filtered down. But it is a
1910 continual process that we want to show in advance. And so
1911 there are tools and best practices that the legislation has
1912 recognized and it's very important -- a success in industry
1913 for advancing those capabilities.

1914 Mr. Johnson. Okay. Well, thank you very much.

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

1915 Mr. Chairman, thanks for the indulgence and I yield
1916 back.

1917 Mr. Upton. Mr. Long.

1918 Mr. Long. Thank you, Mr. Chairman, and Mr. Menezes,
1919 when you opened this morning you mentioned I believe that the
1920 cyber threat from the bad actors, sometimes it boils down to
1921 their artificial intelligence attacking our systems and our
1922 defense is our artificial intelligence trying to prevent
1923 their artificial -- can you speak to that for just 30 seconds
1924 and kind of -- I mean, that's a --

1925 Mr. Menezes. I will let --

1926 Mr. Long. -- can of very severe worms, I think.

1927 Mr. Menezes. I will let Ms. Hoffman answer that one.

1928 Ms. Hoffman. So when -- so when we talk about
1929 cybersecurity, it's really looking at information,
1930 technology, and control system technology.

1931 But a lot of it is layering computer protections against
1932 computer attacks and computer protections, and so you keep
1933 layering on, you know, different information technology
1934 solutions to thwart information-based attacks on the system.

1935 So it becomes an information and a controlled system but
1936 a capability of an actor to use that information technology

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

1937 against the industry and so it becomes a very broad attack
1938 surface.

1939 And so what we need to do is think about what is the
1940 right information technology placement in industry that
1941 provides the capability industry requires but doesn't provide
1942 that broader attack surface.

1943 Mr. Long. Kind of reminds me of a friend of mine 40
1944 years ago that had a restaurant and he said that he laid
1945 awake half the night trying to figure out how to keep his
1946 employees from stealing from him.

1947 But the problem was that his employees laid awake the
1948 other half of the night trying to circumvent his new system.

1949 So, Mr. Menezes, as we live in an increasingly digitized
1950 world with the ever-growing threat of cybersecurity attacks,
1951 I think it would be important for the Department of Energy to
1952 identify the greatest security risk in order to mitigate
1953 potential damage.

1954 How does the Department of Energy prioritize any
1955 security risk and how are you working with private energy
1956 asset owners to plan for the possibility of cyberattacks?

1957 Mr. Menezes. Well, our priorities are typically a
1958 result of what we are seeing and what we are anticipating.

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

1959 So it's in real time because information that we gathered --
1960 both you and Congressman Johnson mentioned the digitalization
1961 of our systems and, indeed, we are producing not only more
1962 data but more access points as all of our systems become more
1963 digitized.

1964 So when we prioritize those things that we are
1965 addressing, it is -- obviously we have to address those
1966 threats that we know as those threats are evolving. I mean,
1967 that's the first thing.

1968 We have to continue everything we've done in the past
1969 because they can always revert to prior technology, so we
1970 can't ignore that. We build on -- we build on what we know
1971 and then we try to anticipate where we think the next threats
1972 are coming from.

1973 So we have to -- we have to make sure that we can
1974 respond to what we know and we have to be able to identify
1975 those threats.

1976 As I mentioned earlier, we have a lot of hits on our
1977 systems. They could appear random. Because of our modelling
1978 techniques it could be that we are -- we are witnessing ways
1979 -- new ways that they are trying to figure out ways to gain
1980 access to the system.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

1981 So we need to make sure that we have that priority in
1982 place so we can almost see into the future, if you will, to
1983 make our current system resilient to those -- to those
1984 threats.

1985 Mr. Long. Okay. And you also talk a lot in your
1986 testimony about the Department of Energy working with the
1987 Department of Homeland Security, Department of Justice, and
1988 the FBI on energy sector cybersecurity.

1989 As the sector-specific agency for cybersecurity in the
1990 energy sector, what is the Department of Energy's role during
1991 a potential cyberattack on the energy infrastructure?

1992 Mr. Menezes. I will defer to Pat.

1993 Ms. Hoffman. So in the event of a cyberattack, I mean,
1994 first of all, we coordinate very closely with industry in
1995 looking at what is the event -- what is happening on the
1996 system.

1997 We coordinate the primary function through the National
1998 Cybersecurity and Communications Integration Center -- the
1999 NCCIC at DHS, which is the focal point for cyber coordination
2000 in the federal government. So we will work with them. We
2001 will work with the FBI as well.

2002 We will look at the capabilities that industry has for

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

2003 dealing with this attack, trying to understand what is the
2004 cause -- the root cause of the attack but then also work with
2005 industry on providing mitigation measures and any support
2006 that's needed.

2007 We would utilize NERC and the ISAC for getting
2008 information out to the rest of industry from a prevention and
2009 preparedness point of view and that capability is very strong
2010 and used, is aware across the -- all the sectors of the
2011 industry to pay attention.

2012 Mr. Long. Okay. Thank you.

2013 I have run out of time so, Mr. Chairman, I yield back.

2014 Mr. Upton. Mr. Walberg.

2015 Mr. Walberg. Thank you, Mr. Chairman, and thank you for
2016 highlighting my legislation, H.R. 5174, as part of this
2017 hearing, and I appreciate the panel being here, Mr. Menezes
2018 and Ms. Hoffman, and your attention to these concerns.

2019 Back when the Department of Energy was organized as a
2020 Cabinet agency back when I was in graduate school in 1977,
2021 the largest energy security concern was fuel supply
2022 disruptions, not electricity disruptions or cybersecurity, as
2023 we are talking about now.

2024 As you would expect, the department's Organization Act

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

2025 reflected those concerns. Times have changed and we should
2026 be thinking differently now about energy security and
2027 emergency preparedness. So I am glad we are doing that here
2028 today.

2029 Mr. Menezes, the secretary's efforts to elevate the
2030 agency's leadership on emergency and cybersecurity functions
2031 are commendable. But I would like to see DOE leadership
2032 continue under future administrations. It can't be catch as
2033 catch can. We need that continuity.

2034 Do you think it would help to codify DOE's assistant
2035 secretary functions into DOE Organization Act?

2036 Mr. Menezes. Well, thank you for that question,
2037 Congressman, and let me take a minute to express our
2038 appreciation for working with the committee and its efforts
2039 to review our DOE structure and its authorizing statutes.

2040 Your staff and members -- other members have been very -
2041 - work in a very collaborative way to try to identify ways to
2042 -- as we seek to realign and modernize the department that
2043 you seek to modernize the enabling statutes.

2044 So we support the effort. We appreciate the
2045 collaboration and exchange of information and we continue to
2046 look forward with you as you move legislation through the

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

2047 process.

2048 Mr. Walberg. In H.R. 5174, we specify functions to
2049 include emergency planning coordination response. Can you
2050 talk about your work to elevate these functions in the new
2051 office?

2052 Mr. Menezes. Right. Well, and the secretary announced
2053 the setting up of CESER. That's going to be -- that is a
2054 clear demonstration of his commitment and his organizational
2055 vision for the department, to highlight it, to increase the
2056 visibility, to coordinate efforts, and to be a source of
2057 additional guidance from Congress, the White House, and other
2058 agencies.

2059 So he's committed to that and he's showing it in a very
2060 real and measurable way.

2061 So that's what we are proposing and that's what we are
2062 doing. And then we look forward to working with you, the
2063 appropriators, others, you know, to ensure that it has the
2064 adequate resources it needs to accomplish the goals that we
2065 hope it accomplishes.

2066 Mr. Walberg. Ms. Hoffman.

2067 Ms. Hoffman. I would just like to add to what the
2068 undersecretary said -- that any sort of event that occurs the

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

2069 effective response really is built off of information sharing
2070 and coordination.

2071 So in the preparedness when we are conducting exercises,
2072 when we are sharing classified threat briefings, when we are
2073 coordinating with the intelligence community, it's all
2074 critical components of how we support preparedness and so
2075 that we are actively coordinating ahead of any event that may
2076 occur and that will be -- allow the federal government and
2077 industry to be very efficient in making sure that we
2078 understand the cause -- the root causes but also the
2079 opportunities for mitigations and restoration.

2080 Mr. Walberg. Good. So, clearly, you will work with us
2081 to identify any gaps with -- of authority or ambiguities --
2082 maybe I should have left that word out -- in the system so we
2083 can make sure it continues to work.

2084 Mr. Menezes. Yes, sir.

2085 Mr. Walberg. Let me ask one more question, Mr. Menezes.
2086 Do you believe that elevating cybersecurity functions to a
2087 Senate-confirmed assistant secretary level will help
2088 intergovernmental and interagency communication as well as
2089 multidirectional information sharing with DOE's ability to
2090 appropriately and quickly address cyber-related emergencies?

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

2091 Mr. Menezes. I do. The key point -- the key part about
2092 being a Senate-confirmed appointee is the accountability that
2093 you have to maintain with the two branches of government.

2094 You're in the executive branch and you're confirmed by
2095 the Senate, and so it forces you to work with Congress and to
2096 fully explain yourself to the executive branch.

2097 Secondly, it increases the visibility and the
2098 accountability. So as of today, we come up here regularly to
2099 testify and so it's a way that we can ensure that we have --
2100 we are doing what we said we were going to do and we are
2101 doing what you think that we told you that we were going to
2102 do, and you can give us instructions as to, you know, how we
2103 can better do what we need to do.

2104 Mr. Walberg. Thank you, and you can review the acronyms
2105 too, as you come up.

2106 I yield back.

2107 Mr. Upton. Mr. Duncan.

2108 Mr. Duncan. Mr. Chairman, thank you. You saved the
2109 best for last, I guess. Maybe.

2110 There's been a lot of talk today about electromagnetic
2111 pulse and grid hardening. You know, solar flares, coronal
2112 mass ejections, CMEs, resulting geomagnetic storm effects are

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

2113 real.

2114 So EMPs could be manmade and be a natural event, and we
2115 sort of discount the natural event but just did a little
2116 research -- 1989 we had a huge CME event that knocked out
2117 power to 6 million people in northeastern Canada, and we just
2118 missed another one this year in 2017 where a huge solar flare
2119 happened and the Earth just was not in its path, thank
2120 goodness, and thank God we weren't.

2121 But we are not immune to that happening in the future.
2122 So too many times when we talk about EMPs, people look at us
2123 like we have on a tinfoil hat -- that we are talking about
2124 some rogue state possibly launching a nuclear weapon in to
2125 the atmosphere above the Earth and creating an EMP and
2126 knocking out our power grid. That's a real possibility too
2127 when rogue states have nuclear weapons.

2128 So whether it's a natural EMP or whether it's manmade,
2129 we've got to be prepared for it and one thing that I talk
2130 about a lot in this committee is my alma mater, Clemson
2131 University, and they partner with Savannah River site -- the
2132 Savannah River National Laboratory, rather -- DOE, regional
2133 utilities, and stakeholders to develop the nation's largest
2134 grid emulator, the 20 MVA Duke Energy e-grid and are working

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

2135 on the next phase, a high-voltage transmission scale user
2136 facility that can be used to test large-power transformers
2137 and other critical transmission assets to develop protection
2138 schemes from cyber and EMP attacks -- both cyber and EMP
2139 attacks.

2140 It's a prime example of enhancing grid security through
2141 public-private partnerships, which is the title of one of the
2142 bills we are reviewing today.

2143 So I encourage DOE to continue looking for these
2144 opportunities, especially since the new Office of
2145 Cybersecurity, Energy Security, and Emergency Response. I
2146 guess you're going to pronounce that as CESER. Everything in
2147 government has an acronym, right?

2148 Can you further discuss what CESER's plans to harden the
2149 grid and protect the EMPs are? Either one.

2150 Ms. Hoffman. So thank you for the question.

2151 As you are well aware, the department takes an all-
2152 hazard approach. So we are looking at a multitude of threats
2153 that face the electric grid and the energy industry.

2154 The national laboratories have important testing
2155 capabilities. You mentioned one of them. There are several
2156 capabilities that we are utilizing from an EMP perspective.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

2157 We have partnership with the -- we have partnered with the
2158 industry in looking at an EMP strategy.

2159 We have also worked with EPRI as they're looking at
2160 their mitigation and testing plan. We are looking at what
2161 the department can do to support EMP testing. As you
2162 know, it's a very expensive process to do EMP testing.

2163 Mr. Duncan. You mentioned the cost but were you
2164 familiar with what Clemson is doing, before today?

2165 Ms. Hoffman. Yes, I am familiar with Clemson several
2166 other activities in the labs.

2167 Mr. Duncan. Have you visited the research facility in
2168 Charleston, South Carolina, or has anybody from DOE done
2169 that?

2170 Ms. Hoffman. I don't know if visited that facility but
2171 I've visited the --

2172 Mr. Duncan. Can I invite you on behalf of my alma mater
2173 to visit the drivetrain and test facility in Charleston,
2174 South Carolina?

2175 Ms. Hoffman. Yes, sir.

2176 Mr. Duncan. Both of you?

2177 Mr. Menezes. Yes, sir.

2178 Mr. Duncan. Okay.

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

2179 Let me shift gears real quick. President Trump has
2180 talked about a huge infrastructure package and we are talking
2181 about within Congress and I guess TNI is working on this
2182 package.

2183 When people think about infrastructure they think about
2184 roads, bridges, water, sewer, airports, port deepening, et
2185 cetera.

2186 But grid hardening and our transmission of power
2187 supplies, so talking about -- I think Morgan Griffith talked
2188 about natural gas pipelines and other things. But are
2189 elements within DOE, discussing with the White House and
2190 members of Congress, specifically probably TNI Committee --
2191 transportation and infrastructure -- plans to include grid
2192 hardening and cybersecurity as part of the infrastructure
2193 package or elements within the DOE having those
2194 conversations?

2195 Mr. Menezes. Well, thank you for the question and
2196 pointing out the importance of the issue and the
2197 opportunities to work with everyone who's working on the
2198 infrastructure bill and who will be working on the
2199 infrastructure bill.

2200 To be sure, you know, a resilient strong operating

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

2201 energy system relies on infrastructure and so those component
2202 parts should be part of an infrastructure bill to the extent
2203 that it's necessary.

2204 The secretary, in fact, is testifying today in the
2205 Senate -- in the other body, excuse me.

2206 Mr. Duncan. On this subject?

2207 Mr. Menezes. Excuse me -- on the other body -- on the
2208 infrastructure -- on the president's infrastructure bill.

2209 And so --

2210 Mr. Duncan. So let me just -- because my time is
2211 running out --

2212 Mr. Menezes. So energy is a --

2213 Mr. Duncan. -- is this a priority for the White House
2214 with regard to an infrastructure package -- grid hardening
2215 and cyber security as part of the infrastructure package and
2216 should it be?

2217 Mr. Menezes. I know that energy components are a part.
2218 I am not sure if they -- if the phrase hardening would be in
2219 --

2220 Mr. Duncan. Let me encourage you to go back to
2221 Secretary Perry and go back to your bosses and others in the
2222 White House you have conversations with and let's make this a

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

2223 priority in the upcoming infrastructure package.

2224 But I can tell you it's going to be a priority of a
2225 number of people here in Congress.

2226 Mr. Chairman, I appreciate it. With that, I yield back.

2227 Mr. Walberg. [Presiding.] I thank the gentleman.

2228 Seeing that there are no further members wishing to --

2229 Mr. Rush. Mr. Chairman. Mr. Chairman.

2230 Mr. Walberg. Mr. Rush.

2231 Mr. Rush. Before we adjourn, I want to ask unanimous
2232 consent to allow me to ask the Secretary a couple of
2233 questions.

2234 Mr. Walberg. Without objection.

2235 Mr. Rush. Mr. Secretary, I understand that the
2236 Secretary will be appearing before the committee in the near
2237 future to discuss the Department's fiscal year 2019 budget
2238 request.

2239 The Department routinely provides detailed budget
2240 justification to Congress. But a number of the detailed buy-
2241 ins of the fiscal year 2019 request are not available. Does
2242 the Department plan to release Volumes II, III, V, and VI
2243 prior to the Secretary's appearance before the committee?

2244 Mr. Menezes. We plan to release it when it's complete.

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

2245 Yes, sir.

2246 Mr. Rush. Thank you, Mr. Chairman.

2247 Mr. Walberg. I thank the gentleman.

2248 Again, seeing that there are no further members wishing
2249 to ask questions, I would like to thank the panel for being
2250 with us today and providing us the answers and probably
2251 further questions that we'll have down the road.

2252 Mr. Menezes. Happy to answer any questions for the
2253 record. Thank you.

2254 Mr. Walberg. Thank you, sir.

2255 We'll change panels here now, and move on with the
2256 continuation of the hearing.

2257 [Pause.]

2258 We appreciate the quick changeover here and we want to
2259 thank all of our witnesses for being here today and taking
2260 the time to testify before our subcommittee.

2261 Today's witnesses will have the opportunity to give
2262 opening statements followed by a round of questions from
2263 members.

2264 Our second witness panel for today's hearing includes
2265 Tristan Vance, director -- chief energy officer, Indiana
2266 Office of Energy Development -- welcome; Zachary Tudor,

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

2267 associate laboratory director for National and Homeland
2268 Security Idaho National Laboratory -- welcome; Mark Engel,
2269 senior enterprise security advisor, Dominion Energy --
2270 welcome to you; Kyle Pitsor, vice president, government
2271 relations, National Electrical Manufacturers Association --
2272 welcome you; and Scott Aaronson, vice president, security and
2273 preparedness, Edison Electric Institute. Welcome.

2274 We appreciate you all being here today. We'll begin
2275 the panel with Mr. Tristan Vance, and you are now recognized
2276 for five minutes to give an opening statement and I am sure
2277 you're well aware of the lighting format.

2278 Welcome. We recognize you.

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

2279 STATEMENTS OF TRISTAN VANCE, DIRECTOR, CHIEF ENERGY OFFICER,
2280 INDIANA OFFICE OF ENERGY DEVELOPMENT; ZACHARY TUDOR,
2281 ASSOCIATE LABORATORY DIRECTOR FOR NATIONAL AND HOMELAND
2282 SECURITY, IDAHO NATIONAL LABORATORY; MARK ENGELS, SENIOR
2283 ENTERPRISE SECURITY ADVISOR, DOMINION ENERGY; KYLE PITSOR,
2284 VICE PRESIDENT, GOVERNMENT RELATIONS, NATIONAL ELECTRICAL
2285 MANUFACTURERS ASSOCIATION; SCOTT AARONSON, VICE PRESIDENT,
2286 SECURITY AND PREPAREDNESS, EDISON ELECTRIC INSTITUTE

2287

2288 STATEMENT OF MR. VANCE

2289 Mr. Vance. Thank you. Thank you, Mr. Chairman, Ranking
2290 Member Rush, and members of the subcommittee.

2291 I am Tristan Vance, the director of the Indiana Office
2292 of Energy Development. I also serve as the chief energy
2293 officer for the state of Indiana and I am testifying on
2294 behalf of the National Association of State Energy Officials
2295 -- NASEO.

2296 Our testimony is in support of H.R. 5174, the Energy
2297 Emergency Leadership Act, H.R. 5175, Pipeline and LNG
2298 Facilities cybersecurity Preparedness Act, H.R. 5239, the
2299 Cyber Sense Act, and H.R. 5240, the Enhancing Grid Security
2300 Through Public-Private Partnership Act.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

2301 We appreciate the subcommittee's actions on energy
2302 emergency preparedness as demonstrated by the passage of H.R.
2303 3050, which reauthorized appropriations for the U.S. State
2304 Energy Program -- SEP -- and strengthened its emergency and
2305 cybersecurity provisions.

2306 Mr. Chairman, Ranking Member Rush, Full Committee
2307 Chairman Walden, Ranking Member Pallone, and the original
2308 sponsored of the SEP legislation and sponsors of the Dear
2309 Colleague letter calling for \$70 million for the SEP program,
2310 Mr. Tonko and Mr. McKinley, you all deserve special praise
2311 for your leadership.

2312 My state energy director colleagues from across the
2313 country visited Washington, D.C. in February and strongly
2314 encouraged many of your Senate colleagues to act on H.R.
2315 3050.

2316 First, NASEO would like to note the U.S. Department of
2317 Energy's exceptional response to last year's hurricanes. The
2318 support for energy -- the support for energy emergency
2319 response from DOE combined with SEP resources, collaboration
2320 among states, tribal, and local governments and industry
2321 worked to save lives and lessen economic losses.

2322 In particular, the electric and petroleum industries'

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

2323 efforts to restore services were exceptional. Secretary
2324 Perry's call for the cybersecurity, Energy Security, and
2325 Emergency Response Office, or CESER, would further improve
2326 both states' and the nation's ability to respond to and
2327 mitigate the risks of energy supply disruption from all
2328 hazards.

2329 NASEO's 2017 bipartisan recommendation to the Trump
2330 administration called for such action. In my capacity as a
2331 NASEO board member, I co-chaired the NASEO transition task
2332 force which developed this important recommendation.

2333 We believe such action will save lives and protect the
2334 economy of communities in every region of the country.

2335 The Energy Emergency Leadership Act will elevate this
2336 core DOE function and we strongly support the bill. I also
2337 want to stress the importance of CESER having a well-defined
2338 state energy security program and robust program management
2339 resources.

2340 A strong DOE state energy emergency partnership such as
2341 the one that exists today in the DOE Office of Infrastructure
2342 Security and Energy Restoration is critical to respond to
2343 emergencies effectively.

2344 Joint state-federal coordination and data sharing is the

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

2345 heart of emergency response. In Indiana, for example, the
2346 propane crisis in 2014 needed a rapid response and
2347 government's ability to connect stakeholders from three
2348 sources in order to keep Hoosiers safe and protect our local
2349 economy from potentially devastating poultry industry losses.

2350 While our nation has not faced a cybersecurity event
2351 with significant energy supply impacts, we should adopt the
2352 lessons learned from recent natural disasters for our cyber
2353 preparedness.

2354 We share the subcommittee's concerns and the threat
2355 cybersecurity presents to the energy system -- electricity,
2356 natural gas, and petroleum.

2357 A cyberattack to the energy system during a natural
2358 disaster is a horrific scenario. However, we must address
2359 such possibilities.

2360 For example, the DOE-NASEO-NARUC Liberty Eclipse
2361 emergency exercise in 2016 focused on a combined cyber and
2362 natural disaster event.

2363 These low-cost regional exercises are essential. We
2364 also strongly support H.R. 5239 and H.R. 5240 and believe
2365 states can leverage these activities. They build upon the
2366 work of utilities, DOE, and the states.

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

2367 For example, in Indiana we created the Indiana Executive
2368 Council on Cybersecurity to lead a public-private partnership
2369 and have created a state-led exercise series focused on SCADA
2370 systems for electric and water utilities.

2371 Equally important is mitigating energy system risks.
2372 For example, states using public-private partnerships such as
2373 the energy -- such as energy savings performance contracting
2374 to upgrade energy systems at mission critical facilities and
2375 we are working with DOE's Clean Cities program to add natural
2376 gas, propane, and electric vehicles in first responder fleets
2377 to enhance resiliency.

2378 NASEO believes the four bills discussed today are a
2379 significant step forward on an urgent nonpartisan national
2380 security issue. We greatly appreciate the subcommittee's
2381 continued leadership on these issues.

2382 Thank you.

2383 [The prepared statement of Mr. Vance follows:]

2384

2385 *****INSERT*****

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

2386 Mr. Walberg. Thank you.

2387 I recognize Mr. Tudor for your five minutes of

2388 testimony.

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

2389 STATEMENT OF MR. TUDOR

2390

2391 Mr. Tudor. Thank you, Chairman Upton, Ranking Member
2392 Rush, Mr. Walberg, and distinguished members of the committee
2393 for holding this hearing and inviting Idaho National
2394 Laboratory's testimony on the energy sector's cybersecurity
2395 and emergency response. I request that my written testimony
2396 be made part of the record.

2397 In my role at Idaho National Laboratory, also known as
2398 INL, I lead an organization that conducts research for the
2399 cyber and physical protection of critical infrastructure with
2400 an emphasis on the energy sector.

2401 INL has capabilities that will support the Department of
2402 Energy's Office of Cybersecurity, Energy Security, and
2403 Emergency Response, or CESER, in achieving the new leadership
2404 role for critical infrastructure protection, consistent with
2405 the authorities directed in the FAST Act for assuring the
2406 energy sector's capabilities and coordination for cyber and
2407 physical protection of emergency response.

2408 Persistent, capable, well-resourced, and highly
2409 motivated cyber adversaries are a threat to our nation's
2410 energy sector. These adversaries continue to develop the

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

2411 skills, capabilities, and opportunities for potential
2412 compromise of the nation's energy infrastructure.

2413 The potential consequences of a sophisticated
2414 cyberattack create an imperative that federal agencies, labs,
2415 and industries collaborate to build capabilities and develop
2416 innovations that reduce the unacceptable risks associated
2417 with a cyberattack.

2418 DOE, INL, and our other national laboratory partners are
2419 providing leadership and resources to assure that the nation
2420 has detective capabilities to reduce these risks.

2421 These capabilities include a broad array of science and
2422 engineering programs, extensive teams of multidisciplinary
2423 national laboratory researches, unique user facilities and
2424 test beds for experimentation at scale, and a breadth of
2425 collaborative relationships with industry, universities, and
2426 federal agencies.

2427 With regard to reducing cyber risks, INL's Cybercore
2428 Integration Center, known as Cybercore, performs research,
2429 development, testing, and evaluation of technologies and
2430 information products to prevent, detect, and respond to cyber
2431 vulnerabilities and intrusions.

2432 When shared through public-private partnerships, these

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

2433 solutions create barriers to attack, mitigate the
2434 consequences of an attack, and enable rapid restoration of
2435 energy sector operations.

2436 Specific examples of technology advancement that are
2437 reducing risks include, with DOE and other agencies, INL
2438 supported the recovery and information sharing in response to
2439 the cyberattack on Ukraine's electric grid. After our post-
2440 event analysis, INL developed and is conducting unique cyber
2441 strike workshops for U.S. asset owners and operators to learn
2442 how to protect against similar attacks.

2443 INL developed and completed a pilot study of our
2444 consequence-driven cyber-informed engineering methodology, or
2445 CCE, with Florida Power and Light.

2446 CCE leverages an organization's knowledge and
2447 experiences to engineer out the potential and highest -- for
2448 the highest consequence cyber events. Briefings of the
2449 study's results were shared with the Section 9 electric
2450 utility partners, congressional staffers, and government
2451 leaders. A second pilot is currently underway.

2452 INL also is advising the National Security Council on
2453 implementing the methodology with a larger set of
2454 participants.

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

2455 INL is one of several national laboratories providing
2456 technical information and strategic planning guidance to
2457 assist CESER develop -- leadership to develop
2458 infrastructures, capabilities and processes for reducing
2459 cyber and physical risk.

2460 This includes providing principles to establish a
2461 research portfolio that delivers impactful solutions and
2462 response to cyber and all hazard threats, standards for
2463 security-informed design to engineer in cyber physical
2464 protections for future grid infrastructure and next
2465 generation energy systems, guidance on best practices for
2466 coordinating incident response with DHS and other federal and
2467 private organizations.

2468 Some examples of INL's current partnerships that are
2469 reducing cyber risks are research collaboration with the
2470 electric industry partners at the California Energy Systems
2471 for the 21st Century Program and Lawrence Livermore National
2472 Laboratory is leading to new capabilities for machine-to-
2473 machine automated threat response.

2474 DOE's pilot program, cybersecurity for the operational
2475 technology environment, is providing a forum for situational
2476 awareness for cyber risks among industry partners and

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

2477 stakeholders.

2478 Examples I described demonstrate that DOE and INL are
2479 making significant progress in reducing the risks to our
2480 energy sector. However, with the increasing capabilities of
2481 our adversaries and the increasing complexity of our energy
2482 system technologies we will not completely eliminate all
2483 risks.

2484 Hence, INL will continue to prioritize initiatives that
2485 emphasize the advancement of protection and response
2486 capabilities that reduces risks. We do this with the
2487 understanding that the U.S. will continue to identify new
2488 requirements for technology and innovation, expect solutions
2489 through expansive organizational leadership, coordination,
2490 and integration, and prioritize funding and focus for
2491 research.

2492 I look forward to your questions. Thank you.

2493 [The prepared statement of Mr. Tudor follows:]

2494

2495 *****INSERT*****

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

2496 Mr. Walberg. Thank you.

2497 Mr. Engels, you're recognized.

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

2498 STATEMENT OF MR. ENGELS

2499

2500 Mr. Engels. Mr. Chairman, Ranking Member Rush, and
2501 members of the subcommittee, thank you for the opportunity to
2502 testify.

2503 My name is Mark Engels and I am a senior enterprise
2504 security advisor at Dominion Energy. Dominion Energy is one
2505 of the largest producers and transporters of energy with a
2506 portfolio of approximately 26,200 megawatts of electricity
2507 generation, 6,600 miles of electric and transmission and
2508 distribution lines, 15,000 miles of natural gas pipeline, and
2509 the Cove Point liquefied natural gas facility in Maryland.

2510 We operate one of the largest natural gas storage
2511 systems in the U.S. with one trillion cubic feet of capacity
2512 and serve more than 6 million utility and retail customers.

2513 I've been with Dominion Energy almost 40 years and with
2514 a focus on cybersecurity for 19 of those years. As a
2515 representative from Dominion Energy, I appreciate the
2516 opportunity to provide comments and input to this committee
2517 and applaud the committee's focus to advance public-private
2518 partnership between the Department of Energy and the oil and
2519 natural gas sector.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

2520 For Homeland Security Presidential Directive 7, both the
2521 Department of Energy, the Department of Homeland Security in
2522 coordination with the Department of Transportation function
2523 as the sector-specific agencies for natural gas pipelines and
2524 LNG.

2525 The fact that pipelines have two SSAs comprised of three
2526 different federal agencies cannot be understated, especially
2527 when it comes to interagency coordination in advance of,
2528 during, and post-incident operations.

2529 The key to this coordination is maintaining a productive
2530 relationships between the energy government coordination
2531 councils' two co-chairs -- DOE and DHS -- and the oil and
2532 natural gas sector coordinating council.

2533 The ONG SEC is comprised of owners and operators from
2534 20-plus industry trade associations representing all aspects
2535 of the oil and natural gas sector.

2536 I encourage DOE and TSA, who has regulatory authority
2537 for pipeline security, to develop a memo of understanding
2538 that outlines roles and responsibilities for dealing with
2539 cyber and physical security of natural gas pipelines and LNG.

2540 TSA already has an MOU with the Department of
2541 Transportation's Pipeline and Hazardous Materials Safety

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

2542 Administration, or PHMSA, which has responsibility for
2543 pipeline safety.

2544 The recent announcement of DOE's new Office of
2545 Cybersecurity, Energy Security, and Emergency Response should
2546 continue to improve the coordination for pipeline, cyber, and
2547 physical security.

2548 The language in H.R. 5175 Section 22 could introduce
2549 complexity and confusion when it comes to DOE's involvements
2550 with states. Individual pipeline companies, Dominion Energy
2551 included, already have longstanding relationships with state
2552 emergency response organizations, public utility commissions,
2553 and law enforcement for all hazard events.

2554 H.R. 5175 directs DOE to focus on advanced cybersecurity
2555 applications, pilot demonstrations, develop workforce
2556 curricula, and provide mechanisms to help the energy sector
2557 evaluate, prioritize, and improve physical and cybersecurity
2558 capabilities.

2559 Dominion Energy has worked with DOE and several national
2560 labs on a number of efforts that align with the proposed
2561 legislation.

2562 They include being a peer reviewer for the Department of
2563 Energy's Cybersecurity for Energy Delivery Systems Program,

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

2564 participation into workforce and training efforts, Cyber
2565 Strike -- a hands-on workshop communicating lessons learned
2566 associated with the Ukraine grid attacks -- and Attack, an
2567 approach developed by INL to aggregate and evaluate cyber
2568 risk-related information.

2569 Dominion Energy is a member of both the downstream
2570 natural gas and electricity information sharing and analysis
2571 centers, both who have benefited -- both of which have
2572 benefited from intelligence provided by DOE's Cybersecurity
2573 Risk Information Sharing Program, or CRISP.

2574 Dominion's -- Dominion Energy and other national -- and
2575 other natural gas pipeline companies have worked very closely
2576 with TSA and DOE on cyber and physical security to build a
2577 partnership based on trust and respect.

2578 The proposed legislation should make sure that roles and
2579 responsibilities are clearly defined and understandable by
2580 pipeline operators who ultimately have to face the growing
2581 threat every day.

2582 Thank you again for the opportunity to provide comments
2583 and I will be glad to answer any of your questions.

2584 [The prepared statement of Mr. Engels follows:]

2585

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

2586

*****INSERT*****

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

2587 Mr. Walberg. Thank you.

2588 Mr. Pitsor.

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

2589 STATEMENT OF MR. PITSOR

2590

2591 Mr. Pitsor. Good afternoon, Mr. Chairman, Ranking
2592 Member Rush, members of the subcommittee. Thank you for the
2593 opportunity to testify on such an important topic today, the
2594 physical and cybersecurity of our nation's electric system.

2595 My name is Kyle Pitsor, vice president of government
2596 relations for National Electrical Manufacturers Association,
2597 representing about 350 manufacturers of electrical equipment
2598 and medical imaging technologies.

2599 NEMA and our member manufacturers have made
2600 cybersecurity a top priority. As the manufacturers of
2601 essential grid equipment, NEMA companies are a key line of
2602 defence against both physical and cyberattacks in the
2603 electricity transmission and distribution system.

2604 We understand that a secure product supply chain is
2605 inherent to a secure grid and cybersecurity aspects should be
2606 built into, not bolted onto manufacturers' products whenever
2607 possible.

2608 Manufacturers also understand that managing
2609 cybersecurity supply chain risk requires a collaborative
2610 effort and open lines of communication among electrical

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

2611 utility companies, federal and state and local governments,
2612 and suppliers of the full spectrum of grid systems and
2613 components, both hardware and software.

2614 I would like to mention briefly some of the industry
2615 wide efforts NEMA and its members have pursued to establish
2616 best practices for supply chain and manufacturer
2617 cybersecurity hygiene and then make a few comments on the
2618 Cyber Sense Act and the Enhancing Grid Security Through
2619 Public-Private Partnership Act.

2620 In 2005, the electrical industry took a step towards
2621 improving supply chains' security of manufacturers' products
2622 by publishing a technical best practices document that laid
2623 out the steps for securing supply chains.

2624 NEMA published a white paper on cybersecurity, supply
2625 chain best practices for manufacturers that addresses supply
2626 chain integrity through four phases of a product's life cycle
2627 -- the manufacturing, delivery, operation, and end of life of
2628 a product.

2629 This month in March, NEMA members have approved a new
2630 technical document detailing industry best practice cyber
2631 hygiene principles for electrical manufacturers to implement
2632 in their manufacturing and engineering processes.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

2633 The document raises a manufacturer's level of
2634 cybersecurity sophistication by following seven fundamental
2635 principles that are outlined in my statement.

2636 With the above-mentioned two industry developed and
2637 cybersecurity best practices documents in mind, I will make a
2638 few comments about two of the bills under consideration
2639 today.

2640 First of all, with respect to the Cyber Sense Act, NEMA
2641 member manufacturers support voluntary cyber evaluation of
2642 products used in the transmission, distribution, storage, and
2643 end use of electricity.

2644 However, the specific requirements of any such program
2645 need to be carefully designed in close collaboration with
2646 manufacturers and other stakeholder groups and developed via
2647 an open and transparent process.

2648 We recommend that any cybersecurity evaluation program
2649 abide by a set of principles that we've outlined in our
2650 written statement.

2651 With respect to the Enhancing Grid Security Through
2652 Public-Private Partnership Act, NEMA supports the concepts
2653 included in the draft legislation.

2654 With respect to Section 2, NEMA agrees that voluntary

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

2655 technical assistance efforts should be available to provide
2656 electric utilities with information and resources to
2657 effectively prepare for and combat both physical and
2658 cybersecurity threats.

2659 We also agree that this technical assistance should be
2660 provided in close collaboration with state governments and
2661 public utility regulatory commissions as well as with
2662 equipment manufacturers.

2663 Including manufacturers in the training and technical
2664 assistance efforts will ensure that products are installed
2665 and maintained as intended to limit the risk of cyberattack
2666 resulting from the proper -- possible misuse of a product.

2667 NEMA also supports the recommendations included in
2668 Sections 3 and 4 of the legislation. One additional outage
2669 index that we recommend be included in Section 4(b) of the
2670 draft legislation is the Momentary Average Interruption
2671 Frequency Index.

2672 Momentary outages cost U.S. electricity consumers over
2673 \$60 billion in 2014 and account for more than half of all
2674 power outages. Inclusion of this index, we believe, will
2675 improve the interrupter cost estimate information produced by
2676 the Department of Energy.

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

2677 In conclusion, NEMA and member company manufacturers
2678 recognize that cybersecurity risks are constantly evolving
2679 and changing and requires a shared responsibility by all
2680 stakeholders.

2681 NEMA looks forward to working with you as a resource to
2682 this committee as you continue your work to address
2683 cybersecurity concerns in the energy sector.

2684 Thank you, and I look forward to any questions.

2685 [The prepared statement of Mr. Pitsor follows:]

2686

2687 *****INSERT*****

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

2688 Mr. Walberg. Thank you.

2689 I now recognize Mr. Aaronson.

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

2690 STATEMENT OF MR. AARONSON

2691

2692 Mr. Aaronson. Thank you, Mr. Chairman, Ranking Member
2693 Rush, and members of the subcommittee. I appreciate the
2694 opportunity to testify here today.

2695 For EEI's member companies, which includes all of the
2696 nation's investor-owned electric companies, securing the
2697 energy grid is a top priority. I appreciate your invitation
2698 to discuss this important topic on their behalf.

2699 The electric power industry, which includes investor-
2700 owned electric companies, public power utilities, and
2701 electric cooperatives, supports more than 7 million American
2702 jobs and contributes \$880 billion annually to U.S. gross
2703 domestic product -- about 5 percent of the total.

2704 That 5 percent is truly the first 5 percent, responsible
2705 for generating and delivering the energy that powers our
2706 economy and our way of life.

2707 Our members own and operate some of the nation's most
2708 critical infrastructure and they take that responsibility
2709 seriously. EEI's member companies prepare for all hazards --
2710 physical and cyber events, naturally occurring or manmade
2711 threats, and severe weather of every kind.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

2712 To address multiple threats, our companies take what's
2713 known as a defense in-depth approach with several layers of
2714 security. I would like to highlight three main areas of
2715 focus -- standards, partnerships, and response and recovery.

2716 First, standards -- through a process created by
2717 Congress the electric power sector is subject to mandatory
2718 enforceable critical infrastructure protection, or CIP,
2719 regulatory standards for cyber and physical security.

2720 Through these standards, the bulk power system enjoys a
2721 baseline level of security. Standards are important, but
2722 with intelligent adversaries operating in a dynamic threat
2723 environment, regulations alone are insufficient and must be
2724 supplemented.

2725 That brings me to the second area of focus, which is
2726 partnerships, which you have heard a lot about today. You
2727 heard it from DOE and you will hear it from this entire panel
2728 -- security is a shared responsibility.

2729 None of us can do this alone. To be successful in this
2730 environment, industry and government must partner, and as you
2731 heard earlier, we are.

2732 I am here this morning in my role as EEI's vice
2733 president for security and preparedness but I am also

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

2734 privileged to be a member of the secretariat for the
2735 Electricity Subsector Coordinating Council.

2736 The ESCC is comprised of CEOs of 22 electric companies
2737 and nine major industry trade associations representing the
2738 full scope of electric generation, transmission, and
2739 distribution in the United States and Canada.

2740 Through partnerships like the ESCC, government and
2741 industry leverage one another's strengths. This partnership
2742 manifests itself in many ways including deployment of
2743 government technologies, like CRISP, which you have heard
2744 about, multidirectional information sharing, drills and
2745 exercises, and facilitating cross-sector coordination.

2746 What makes the ESCC effective is CEO leadership across
2747 all segments of the industry. This structure provides
2748 resources, sets priorities, drives accountability.

2749 Furthermore, CEOs serve as a draw to other senior
2750 counterparts in industry sectors and in government. The
2751 unity of effort driven by industry working with government
2752 has produced significant tangible results.

2753 Finally, the third area of focus is response and
2754 recovery. The electric power sector is proud of its record
2755 on reliability but outages do occur.

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

2756 The past year has made one thing abundantly clear -- we
2757 can't protect everything from everything all of the time and
2758 investments help companies restore power and be prepared.

2759 Our industry invests more than \$120 billion each year to
2760 make the energy grid stronger, smarter, cleaner, more
2761 dynamic, and more secure.

2762 In addition, the industry's culture of mutual assistance
2763 unleashes a world-class workforce amidst the toughest
2764 conditions to restore power safely and effectively.

2765 Today, we have supplemented that traditional response in
2766 recovery with a 21st century edition -- cyber mutual
2767 assistance. So far, more than 140 entities are participating
2768 in the program, covering more than 80 percent of U.S.
2769 electricity customers.

2770 That brings me to the bills before the subcommittee
2771 today. We appreciate both Congress and the Trump
2772 administration's support of the electric power sector.

2773 Just as EEI's member companies evolve to meet new
2774 threats, our government partners continuously improve their
2775 posture through these new initiatives.

2776 For example, we applaud DOE Secretary Perry and his team
2777 for establishing DOE's new Office of Cybersecurity, Energy

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

2778 Security, and Emergency Response, or CESER.

2779 Legislation passed by this committee codified DOE's role
2780 as the sector-specific agency -- thank you -- and we believe
2781 the elevation of CESER will deepen the relationship between
2782 our industry and DOE on issues of cybersecurity and energy
2783 grid response initiatives.

2784 In his testimony, Secretary Menezes mentioned DOE's
2785 establishment of the supply chain testing facility. We are
2786 interested in the details of that program. The subcommittee
2787 is also aware that through the NERC/FERC process a mandatory
2788 supply chain standard will be implemented soon.

2789 The committee should consider those efforts when
2790 adopting legislation related to supply chains.

2791 Finally, I would like to mention a report included in
2792 the Enhancing Grid Security Through Public-Private
2793 Partnerships Act looking at distribution, cyber, and physical
2794 security.

2795 EEI supports this report because it could address
2796 several emerging questions that many in the industry also are
2797 asking.

2798 What considerations should be made to protect a
2799 distribution system that is outside of mandatory NERC CIP

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

2800 standards?

2801 How can we secure newer technology that is largely
2802 consumer grade but may increase the energy grid's attack
2803 surface?

2804 A collaborative risk-based approach to security at the
2805 distribution level is essential. This report should drive
2806 that approach and consider the many different entities in the
2807 distribution grid, electric companies, and others.

2808 Again, I appreciate you holding this hearing. I look
2809 forward to answering any of your questions.

2810 [The prepared statement of Mr. Aaronson follows:]

2811

2812 *****INSERT*****

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

2813 Mr. Walberg. Thank you. Thanks to the panel for your
2814 very efficient use of the five minutes time. Maybe it would
2815 be an example to myself and my colleagues.

2816 Now privileged to represent the neighbor to the south
2817 who guards my border, Mr. Latta.

2818 Mr. Latta. Well, thank you very much, Mr. Chairman, and
2819 I appreciate our panel for being here. And again, this is a
2820 really important hearing that we are having today because it
2821 affects us all.

2822 Mr. Pitsor, if I could start with my questions with you,
2823 if I may, please. In your testimony you state that you
2824 support a voluntary cybersecurity evaluation of products used
2825 in bulk power systems such as the program described in H.R.
2826 5239 Cyber Sense.

2827 One point you raise is that once products are sold
2828 manufactures often don't know where or how these components
2829 are used, installed, or operated.

2830 You suggest that asset owners should maintain a system
2831 of tracking products. Would you explain in detail why it is
2832 important to track these products?

2833 Mr. Pitsor. As we look -- as we look at evaluation of
2834 cybersecurity threats of different components and how they're

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

2835 assembled in the manufacturers, once they have sold a
2836 product, they're assembled in the field. They're not
2837 necessarily aware of who purchased them and how they were
2838 assembled.

2839 And so the tracking concept here is to have a database
2840 and that could be shared so would be more familiar with where
2841 products have been placed, how they've been assembled, how
2842 they've been installed, how they've been commissioned.

2843 So that if patching is necessary due to a cyber-related
2844 event or testing for that product, we would then be able to
2845 contact the asset user as to what patches should be installed
2846 and how they should be installed.

2847 Mr. Latta. Let me follow up, when you're talking about
2848 the -- especially with the -- with the database because in
2849 Section 2(b)(2) of the Cyber Sense bill establishes a
2850 cybersecurity vulnerability reporting process and related
2851 database for products tested and identified as cybersecure
2852 under this program.

2853 Would this help address the need for a system for
2854 tracking those products by having that, as you just
2855 mentioned?

2856 Mr. Pitsor. I think a database would be very helpful in

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

2857 terms of addressing that need, yes.

2858 Mr. Latta. Thank you.

2859 Mr. Aaronson, if I could ask you, and I think you
2860 mentioned about -- in your testimony about when you were out
2861 with co-ops, and I know I just was at two of my co-ops. I
2862 represent the largest number of co-ops in the district -- in
2863 the state of Ohio.

2864 But if I could ask this question -- as the new
2865 technologies are becoming increasingly interconnected within
2866 our electric grid, new vulnerabilities are emerging across
2867 the system including at the distribution level.

2868 Currently, the physical or cybersecurity of the bulk
2869 power system or the interstate is addressed through the
2870 Critical Infrastructure Protection Standards issued by NERC.

2871 But the distribution system intrastate is outside the
2872 jurisdiction of the mandatory NERC standards and the question
2873 is are there implications for this perceived gap in oversight
2874 and protection of the cybersecurity of the distribution
2875 portion of the nation's electrical grid.

2876 Mr. Aaronson. So a couple of things to respond to
2877 there. As I mentioned in my testimony, we operate one big
2878 machine, right, with thousands of owners and operators from

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

2879 really large investor-owned electric companies that EEI
2880 represents to co-ops and municipal systems of varying sizes.
2881 And so as you know, the ESCC incorporates all of those and we
2882 work very closely.

2883 I know both APPA and NRECA provided written testimony or
2884 written statement for the record. So I would refer to that.

2885 With respect to gaps, and I call them perceived gaps,
2886 just because distribution level components are not subject to
2887 the federal CIP standards does not mean that there is not
2888 security happening at that level.

2889 That said, we do think that anything we can do with
2890 respect to components that make up that part of the grid --
2891 the intrastate -- the distribution level, is going to be an
2892 important approach to continue to advance security for all of
2893 us.

2894 The other thing I would say about distribution security
2895 is we need to prioritize. You know, in security we defend --
2896 you protect diamonds like diamonds and pencils like pencils,
2897 and to be sure, there are diamonds at the distribution level
2898 that we need to be aware of. There are components that are
2899 crown jewels at the distribution level that we need to be
2900 securing.

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

2901 And so approaches like Cyber Sense may allow us to do
2902 that and some of the things that Secretary Menezes and
2903 Assistant Secretary Hoffman were discussing with respect to
2904 really looking closely at those components and drilling down
2905 on the most critical, because if you have a hundred
2906 priorities you have no priorities -- but really finding those
2907 most critical components and beating the heck out of them so
2908 that we can understand if there are any vulnerabilities in
2909 them, again, will make us all more secure.

2910 Mr. Latta. Well, thank you very much, Mr. Chairman. My
2911 time is about to expire and I yield back.

2912 Mr. Walberg. I thank the gentleman.

2913 Now I am privileged to recognize the ranking member, the
2914 gentleman from Illinois -- in fact, the district I was
2915 privileged to be born in -- I quickly add long before you
2916 represented the district, Mr. Rush.

2917 [Laughter.]

2918 Mr. Rush. Mr. Chairman, it's still the best district in
2919 the nation.

2920 Mr. Vance, in your written testimony you noted that DOE
2921 held a cybersecurity contest which brought together students
2922 competing to address the challenges of protecting

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

2923 infrastructure and firms that might employ the same students
2924 after they graduate.

2925 Do you think that on both the public and private sector
2926 that we are doing enough to ensure that we have a skilled
2927 workforce capable of meeting the challenges we will
2928 inevitably face in regards to cybersecurity?

2929 And I will invite any of the members of the panel to
2930 weigh in on some of these issues.

2931 Mr. Vance. I think what we've been doing in Indiana is
2932 specifically trying to bring together the public and private
2933 sides together to analyse what some of the weaknesses are,
2934 what we are good at, what we are not good at, and as Mr.
2935 Aaronson from EEI spoke about just a second ago, I think we
2936 need to prioritize and figure out where those diamonds are
2937 and where those pencils are.

2938 It's one thing for me and my colleagues in the private -
2939 - I am sorry, the public sector to sit in a room and try to
2940 figure out what we need to focus on. We are going to miss a
2941 lot of things.

2942 What we need to do is sit down with the private sector
2943 and work through a collaborative process to identify where
2944 our weaknesses are and how to strengthen those.

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

2945 So the bills being discussed today, I think, are four
2946 steps in the right direction to help strengthen those
2947 partnerships.

2948 Mr. Rush. Anybody else want to chime in?

2949 Mr. Tudor. Mr. Rush, thank you for the question.

2950 I agree that public-private partnerships are key to
2951 moving these forward and these four pieces of legislation are
2952 definitely, you know, great steps towards that.

2953 At the Idaho National Lab, you know, we know that the
2954 partnerships are the strongest part of our operation, whether
2955 it's with vendors, asset owners, you know, with other
2956 government agencies and that's the way that we will be able
2957 to develop the structures to keep our cyber resilience in our
2958 energy systems.

2959 Mr. Rush. And does anyone have any suggestions on how
2960 the Congress could help you to ensure that we have enough
2961 skilled workforce other than what's information in these four
2962 bills?

2963 Mr. Vance. I will add, real quick, just to give a
2964 little bit more perspective on what we are doing in Indiana.
2965 Our approach with our cybersecurity council has been to bring
2966 together all the potential industries involved in

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

2967 cybersecurity.

2968 So right now, I've got about 250 or so members of that
2969 council spanning about 20 different industries with industry
2970 subgroups that then things can bubble up through those
2971 subgroups into the full committee that -- to address in a
2972 cross-sector manner.

2973 So I will give you an example. One of the committees is
2974 focused on personal identifiable information because that's
2975 something that's not unique to any one specific industry and
2976 it really needs to be a topic in and of itself.

2977 But it can't just be its own council or committee. It
2978 has to be part of a bigger picture because it ties back to
2979 energy, water, finance -- all these other things.

2980 So what we've been trying to do in Indiana is to build a
2981 large council that integrates all these different aspects so
2982 it can be addressed in a very -- in a cross-sector manner
2983 across different industries.

2984 Mr. Aaronson. Mr. Rush, I would add, you know, I know
2985 you're very committed to workforce development in particular
2986 with respect to cyber and I think one of the things that
2987 you're hearing both from the previous panel and all of us is
2988 this is a shared responsibility.

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

2989 It's a whole of community issue. I referenced in my
2990 verbal testimony the cyber mutual assistance program. To us,
2991 that is a force multiplier. That is when a company is in --
2992 is being attacked their counterparts come from around the
2993 country and around the nation and around North America,
2994 frankly, to support them.

2995 And so I think that's great for the electricity sector
2996 and we are very proud of that. But to be able to work with
2997 the National Guard, to be able to work with other sectors, to
2998 be able to prioritize restoration when cyber incidents maybe
2999 are impacting more than one sector.

3000 We need to look at this again far more holistically.
3001 And then from a workforce perspective, you know, we are very
3002 proud of the development that we do within our sector through
3003 things like the CEWD. It's the Energy Workforce Development
3004 -- Committee for Energy and Workforce Development is a great
3005 example of how we can find those gaps that we have in our
3006 workforce and work through education, work through public-
3007 private partnerships to improve our staffing in our most
3008 critical needs.

3009 Mr. Rush. Thank you, Mr. Chairman. I yield back.

3010 Mr. Walberg. I thank the gentleman.

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

3011 I now recognize the gentleman from Virginia, Mr.

3012 Griffith.

3013 Mr. Griffith. Thank you very much, Mr. Chairman.

3014 Mr. Tudor, I am going to come to you first but I am
3015 going to take what's more or less a point of personal
3016 privilege and just say that I saw you sitting throughout that
3017 first panel and all those questions on that second row there
3018 with a couple of young people who are very well behaved. Are
3019 they connected with you?

3020 Mr. Tudor. Yes, sir. That's my son, Miles, and my
3021 niece, Sydney. They're getting a civics lesson today.

3022 Mr. Griffith. Well, not the most riveting of hearings
3023 but one that's very important and they have done a great job
3024 and I thought they were -- you could tell they were doing
3025 some stuff back there and I thought they were like my kids,
3026 playing on an electronic device.

3027 But, apparently, they have a numbers game that they're
3028 working on that's all done with their hands and they've been
3029 very quiet and very well behaved. So you're -- you and your
3030 family are to be commended for having such well-behaved
3031 children.

3032 That being said, let's get down to business. You made

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

3033 reference to the consequence-driven cyber-informed
3034 engineering -- CCE methodology.

3035 You say this is more about getting ahead of the problems
3036 of vulnerabilities and threats rather than chasing them. Can
3037 you describe what role this approach may have in
3038 strengthening cybersecurity and critical infrastructure?

3039 Mr. Tudor. Yes. Thank you for that question, sir.

3040 So consequence-driven cyber-informed engineering, or
3041 CCE, kind of identifies the problem -- that we are constantly
3042 seeing new vulnerabilities, new threats every day. So an
3043 organization does a risk assessment on a Monday and by
3044 Wednesday when new vulnerabilities are discovered, many of
3045 the activities described in that risk assessment may be moot.

3046 But if we go back and look at the key consequences of
3047 any organization and we take an electric utility at this, you
3048 know, if keeping the lights on is their mission but maybe
3049 there's several key components that if they were lost may
3050 prevent that mission from being carried out.

3051 You know, looking at the engineering methods of those
3052 consequences, looking at the way an adversary might go about
3053 attacking those infrastructures, using a threat-based
3054 methodology and at INL we do a lot of work considering the

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

3055 threat first and we use that mind set when we look at our
3056 different mitigations, and then developing mitigations with
3057 the asset owner who is a key component of this.

3058 So if we can engineer out those severe consequences,
3059 irregardless of the threat or the current risk or a current -
3060 - or a new vulnerability then we believe that that has a
3061 chance of maintaining that resiliency over a longer period
3062 rather than just addressing new vulnerabilities as they show
3063 up.

3064 Mr. Griffith. I appreciate that, and there's a pilot
3065 program but it's had very limited deployment. Are you
3066 confident this methodology is an effective approach and, if
3067 so, what are you trying to examine before deciding whether
3068 this program should be expanded?

3069 Mr. Tudor. Yes, thank you again.

3070 We have conducted one pilot. We are on a second, and I
3071 think that as we've been briefing this across Congress, the
3072 National Security Council, and others, we've been very
3073 encouraged that people do believe that this type of
3074 methodology will be able to go forward.

3075 So we are working with the DOE and others to develop
3076 some ways to do CCES scale. In our next few pilot

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

3077 engagements we'll be bringing more partners along to provide
3078 training for them and they can go out and provide training
3079 for others. So we hope to be able to scale out this
3080 methodology in the next several years.

3081 Mr. Griffith. I appreciate that.

3082 Mr. Engels, you have got a pipeline -- a new pipeline
3083 coming near my district, although not through my district,
3084 and I asked before about some, for lack of a better term,
3085 smart pipe technology.

3086 I know you're not expecting that question today and so
3087 if you could just get me an answer later as to what you all
3088 might be doing in regards to letting us know if there's some
3089 kind of a break in the line quicker using some smart
3090 technology.

3091 Mr. Engels. I will be glad to follow up with you on
3092 that.

3093 Mr. Griffith. And likewise, I have a friend who's got a
3094 farm where there's going to be a pump station and whatever
3095 you all could do to reassure folks that they're being placed
3096 in the safest location and likewise if there's any smart
3097 technology in there I would appreciate having that
3098 information.

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

3099 Mr. Engels. I understand. We'll make sure we follow
3100 up.

3101 Mr. Griffith. Thank you. All right.

3102 Mr. Aaronson, you mentioned in your written testimony
3103 that approximately 75 percent of U.S. customers are served by
3104 a company that participates in cybersecurity risk information
3105 sharing program.

3106 Do you have any insight what's going on with the other
3107 25 percent?

3108 Mr. Aaronson. So CRISP is a wonderful technology and
3109 the beauty of it is it was something that was actually
3110 developed by National Labs. It was piloted for a few years
3111 by a small subset of companies -- did some proof of concept,
3112 and that was then.

3113 We'll call it commercialized, although maybe that's not
3114 a fair characterization because it is still a public-private
3115 partnership with the Department of Energy, the North American
3116 Electrical Reliability Corporation through their information-
3117 sharing analysis center -- I am trying to not use acronyms --
3118 and then the companies that deploy it.

3119 What we are looking to do and what the ISAC is planning
3120 to do now is to expand the program. So started with five

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

3121 pilots. It has expanded to more than that, to the 75 percent
3122 of customers being represented by a company that has deployed
3123 CRISP.

3124 The other thing you should note is that information,
3125 while it is gleaned from the companies that have deployed the
3126 sensors that make up CRISP, the information that is gleaned
3127 is actually socialized to the entire electric utility sector.

3128 So while there are sensors on 75 percent of companies,
3129 we are going to get a much broader cross-section in the
3130 coming years.

3131 Mr. Griffith. I appreciate that. Thank you for the
3132 answer.

3133 I thank all of you for being here today, and I yield
3134 back.

3135 Mr. Walberg. I thank the gentleman and I recognize the
3136 gentleman from California, Mr. McNerney.

3137 Mr. McNerney. I want to thank the chairman and I thank
3138 the witnesses. Good testimony and informative.

3139 Mr. Aaronson, in your testimony you pointed out that the
3140 EEI members do work to prepare for hazards and cyber or
3141 natural events.

3142 What are your members doing to prepare for climate

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

3143 change events? Is that -- is that -- is there a standard or
3144 is there some sort of work that needs to be done that's being
3145 done?

3146 Mr. Aaronson. So, again, I think we look at this as all
3147 hazards, and whether it is an act of war or an act of God,
3148 whether it is a natural disaster, whether it's an earthquake,
3149 whether it's the wildfires that I know that your district has
3150 been impacted by, we are looking at ways we can be more
3151 resilient, and a lot of what we do kind of crosses, again,
3152 acts of war and acts of God and is more about consequence
3153 management.

3154 Why the lights were, you know, turned off -- why there
3155 was a power outage becomes a little less relevant and how
3156 quickly can we get them restored.

3157 And so a lot of our focus is on that response and
3158 recovery and resilience component of preparation for all
3159 manner of hazards.

3160 Mr. McNerney. Okay. Thank you.

3161 Mr. Pitsor, I appreciate your comments on the enhancing
3162 grid security through public-private partnerships. You
3163 mentioned that you wanted to see a Momentary Average
3164 Interruption Frequency Index included in the ICE calculation.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

3165 How would that improve the calculation? How would that
3166 improve the results?

3167 Mr. Pitsor. Well, the MAIFI index represents some
3168 nearly 50 percent of all the momentary outages that occur in
3169 the U.S. and these are momentary outages that are usually
3170 five minutes or less.

3171 We think that the overall interrupter calculation, if
3172 it's missing those 50 percent of the outages, it's not
3173 capturing fully the economic costs that are associated by
3174 these smaller momentary outages.

3175 For instance, electric motors trip off, computers don't
3176 have backup power trip off. There are costs associated with
3177 that that could be -- should be captured in the overall
3178 estimator.

3179 Mr. McNerney. Okay. You mentioned the Cyber Sense Act.
3180 How would your members respond to nonvoluntary requirements
3181 for -- including cybersecurity in their products?

3182 Mr. Pitsor. We are very supportive of the evaluation
3183 testing of electrical equipment. I think the key is going to
3184 be what type of equipment we are speaking of -- the scope of
3185 the testing, what protocols we are testing against, who's
3186 paying for that testing, and the follow-on work that will be

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

3187 done to address vulnerabilities that are found in terms of
3188 patching, recommissioning, the continuous process that goes
3189 on in addressing cyber --

3190 Mr. McNerney. I mean, it seems that your members would
3191 want to have a set of standards they could -- they could link
3192 their products.

3193 Mr. Pitsor. Exactly. Working on supply side standards
3194 that I mentioned, a new cyber security index standard and
3195 then looking at how we test different products and different
3196 configurations against different vulnerabilities. We segment
3197 those products because some products, as has been recognized,
3198 are behind layers of security. So the testing of those maybe
3199 are less than those that have outward-facing connection to
3200 the internet. There's different levels of testing that would
3201 be required for those products.

3202 Mr. McNerney. Do you have concerns about cuts that are
3203 being proposed in the fiscal 2019 budget's impact on
3204 cybersecurity or security in general? I guess Mr. Aaronson
3205 would be the right person to ask that question of.

3206 Mr. Aaronson. So we appreciate what the Department of
3207 Energy has done with respect to CESER and elevating some of
3208 these issues. We've worked really closely in particular with

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

3209 the Office of Electricity and their Infrastructure Security
3210 Energy Restoration Office, which will ultimately matriculate
3211 over the CESER.

3212 This last historic hurricane season and the nor'easters
3213 the last several weeks, and with that response from Puerto
3214 Rico -- so between that, our partnerships with the labs and
3215 our partnerships with the sector coordinating council we have
3216 really appreciated the ability to work closely with this
3217 administration and the previous administration. This has
3218 been a priority for Department of Energy for several years
3219 now.

3220 Mr. McNerney. So you don't see any sort of a drawback
3221 with the cuts that are being proposed?

3222 Mr. Aaronson. You know, at this point, I think the
3223 priorities that we care about most have not been impacted in
3224 our day-to-day interactions with the department.

3225 Mr. McNerney. Thank you. I yield back.

3226 Mr. Walberg. I thank the gentleman.

3227 Now I recognize the good doctor and gentleman from
3228 Indiana, Mr. Bucshon.

3229 Mr. Bucshon. Thank you, Mr. Chairman.

3230 Mr. Vance, good to have you here from Indiana.

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

3231 Mr. Vance. Thank you.

3232 Mr. Bucshon. You're welcome. As you know -- this is a
3233 question for you -- as you know, electric cooperatives serve
3234 more than 1.3 million customers in the state of Indiana,
3235 primarily those in rural parts of the state, which is
3236 southwest Indiana, the Wabash Valley that I represent.

3237 An additional 300,000 individuals are served by
3238 municipal electric utilities. Both cooperative and municipal
3239 utilities are generally much smaller than their investor-
3240 owned counterparts.

3241 What are some of the specific challenges that you see
3242 these smaller utilities face in terms of defending their
3243 assets against cybersecurity threats?

3244 Mr. Vance. I think the challenge is that a co-op or a
3245 municipal utility face are very similar to what an investor-
3246 owned utility face because they have the same issues in that
3247 every time that you move toward a networked piece of
3248 equipment you're exposing yourself to potential cybersecurity
3249 attacks.

3250 So in Indiana we've been very aware of including our co-
3251 ops and our municipal utilities in our conversations on
3252 energy security and cybersecurity. They sit on our

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

3253 cybersecurity council established by the governor.

3254 I think one of the important things we are trying to do
3255 in Indiana as we continue exercises is to build those
3256 relationships so that we know we have those personal
3257 connections and when an energy emergency hits we cannot spend
3258 hours searching through a binder of 300 pages trying to
3259 figure out what to do.

3260 I think to some extent the movie "Ghostbusters" summed
3261 it up well when it said, "Who are you going to call?" You
3262 have to know who you're going to call in those situations.
3263 We can't spend hours trying to figure it out.

3264 So we've been including our munis and co-ops in our
3265 conversations.

3266 Mr. Bucshon. Are there financial challenges to making
3267 sure that your networks and everything are secure that the
3268 state helps with or anything?

3269 Mr. Vance. There's always finding constraints when it
3270 comes to infrastructure. But to the best of my knowledge, I
3271 have not -- I am not aware of any specific constraints with
3272 munis and co-ops. But we can get back to you on an answer to
3273 that.

3274 Mr. Bucshon. Okay. One of the bills we are discussing,

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

3275 and somebody mentioned this a little while ago, Enhancing
3276 Grid Security Through Public-Private Partnership Act
3277 specifically requires the secretary of energy to take
3278 different sizes of and regions served by electric utilities
3279 into account when administering cybersecurity programs.

3280 Based on your experience in Indiana, what might this
3281 look like?

3282 Mr. Vance. I think that would be something that we'd be
3283 very interested to work with DOE on. What that would look
3284 like I am not entirely sure, off the top of my head.

3285 Mr. Bucshon. Anybody have any comments on any of this
3286 stuff? No?

3287 Good. I yield back, Mr. Chairman.

3288 Mr. Walberg. I thank the gentleman.

3289 Seeing no one else on the panel, I recognize myself for
3290 five minutes. Thanks to the panel for being here.

3291 Mr. Aaronson and Mr. Vance, I asked some questions to
3292 our DOE panel earlier and I would appreciate hearing your
3293 answers to them as well.

3294 I appreciate the secretary's efforts to elevate the
3295 agency's leadership on emergency and cybersecurity functions
3296 and I believe they are commendable.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

3297 But I would like to see DOE leadership continue under
3298 future administrations, as I mentioned. Do you think it
3299 would be -- would help to codify DOE's assistant secretary
3300 functions in the DOE organization chart?

3301 Either one -- Mr. Vance or Mr. Aaronson.

3302 Mr. Vance. From our perspective, I would have to
3303 discuss with my other members of NASEO before I could make a
3304 statement one way or the other.

3305 But I would defer to DOE on that.

3306 Mr. Walberg. Okay. Mr. Aaronson.

3307 Mr. Aaronson. I would just simply say I see no problem
3308 with that. I think it could be useful, and to Mr. McNerney's
3309 question also, I think anything that provides accountability,
3310 that elevates something not just within the organization but
3311 then visibility as a Senate-confirmed position and across the
3312 various verticals within the department that acknowledges
3313 these intersector relationships between electric, gas, and
3314 other generating capabilities, and then I think anything that
3315 can get more resources.

3316 I don't want to be dismissive of your question, Mr.
3317 McNerney. I think anything that -- you know, more resources
3318 so we can do some of these partnerships more, better, faster,

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

3319 and focus on all of the things that are happening in this --
3320 in -- with respect to security in the sector is going to be
3321 valuable. So I think codifying it, elevating it, funding it,
3322 supporting it are all good outcomes.

3323 Mr. Walberg. Okay. Let me ask, do you believe that
3324 elevating the cybersecurity functions to the Senate-confirmed
3325 assistant secretary level is a positive? Is it necessary?

3326 Mr. Aaronson. You know, I will leave that to policy
3327 makers on that, sir. I think -- I think it's a positive
3328 development though, certainly.

3329 Mr. Walberg. Okay.

3330 Mr. Aaronson, one of the bills we are discussing today
3331 is the Enhancing Grid Security Through Public-Private
3332 Partnership Act, which directs DOE to provide cybersecurity
3333 training and technical assistance for electric utilities that
3334 have fewer available resources due to size or region.

3335 The legislation builds upon the existing public-private
3336 partnership between DOE, the electrical cooperatives, and
3337 public utilities -- power utilities.

3338 Could you explain for us the challenges facing certain
3339 electric utilities in improving the cybersecurity of their
3340 assets?

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

3341 Mr. Aaronson. Sure. So, again, I would point everybody
3342 to the statement by the American Public Power Association and
3343 the National Rural Electric Cooperative Association with whom
3344 I serve as secretaries on the sector coordinating council
3345 with.

3346 So one of the benefits of the sector coordinating
3347 council is that we do all come together with common cause,
3348 whether they are large investor-owns, smaller investor-owns,
3349 cooperatives, municipals, Canadians, independent power
3350 generators, the nuclear sector, gas, and on and on and on.

3351 So we work really well together on these issues, again,
3352 of sort of mutual concern with respect to protection of our
3353 infrastructure.

3354 With respect to challenges among the smaller entities,
3355 there are workforce challenges. There are the ability to
3356 ingest intelligence.

3357 There is the ability to implement some of the good
3358 information that is coming out of the government and some of
3359 the mitigation measures that are recommended. And so
3360 anything that we can do as a community -- again, whole of
3361 community so that it is a rising tide that lifts all boats --
3362 ultimately helps all of the infrastructure that we own and

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

3363 operate together.

3364 So we are very supportive of that particular provision
3365 for our co-op and municipal brothers and sisters but also for
3366 some of other smaller entities that are going to need help
3367 implementing the things you all recommend.

3368 Mr. Walberg. So this Section 2 of H.R. 5240, the
3369 Enhancing Grid Security Through Public-Private Partnerships
3370 Act, does that strengthen and further these existing public-
3371 private partnerships?

3372 Mr. Aaronson. I think it does.

3373 Mr. Walberg. Okay.

3374 Thank you. The gentleman from New York is here, my
3375 friend, and we recognize you for five minutes for
3376 questioning.

3377 Mr. Tonko. Thank you, Mr. Chair, and thank you to our
3378 witnesses for being here this afternoon.

3379 Mr. Aaronson, the utility industry has a long tradition
3380 and culture of mutual assistance. When a disaster strikes,
3381 everyone responds, and I know there are still crews from New
3382 York working in Puerto Rico.

3383 The industry has a good idea of how to deal with supply
3384 disruptions and restorations after a natural disaster. But

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

3385 cyber is still uncharted territory. When the industry comes
3386 together to think about the future of mutual assistance, does
3387 that include how you might respond to a cyber incident?

3388 Mr. Aaronson. Very much so.

3389 So the -- one of the things that we have done as a
3390 sector -- and actually I will give a little bit of a time
3391 line because in think it's instructive.

3392 So you will recall the end of 2015 we had both GridEx
3393 III, which is a biannual exercise that NERC puts on, and then
3394 just a month later there was the attack in Ukraine that had
3395 impact on their distribution system.

3396 The CEOs of the sector coordinating council got together
3397 for a meeting in January of 2016 and asked the question, do
3398 we have the surge capacity to deal with either the imagined
3399 threats in the GridEx scenario or the real ones that were
3400 perceived from the Ukraine scenario.

3401 And the answer was sort of, which is never a good answer
3402 for chief executives. And so they told us as the sector
3403 coordinating council support staff to go put something
3404 together.

3405 We put together something known as cyber mutual
3406 assistance, and so from that time just a little over two

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

3407 years ago we scoped what cyber mutual assistance would look
3408 like.

3409 We developed a legal structure around it. We developed
3410 a play book. We exercised it. We've utilized it, and now
3411 142 companies representing nearly 80 percent of all customers
3412 in North America have a company that is a member of the cyber
3413 mutual assistance program.

3414 So we will be -- look, it's in its very nascent stages.
3415 Traditional mutual assistance has been around for more than
3416 80 years. But it is a platform that we can begin to surge
3417 and support each other in the eventuality of a cyberattack.

3418 Mr. Tonko. And in that collaboration, are there any
3419 differences that you would cite that they could distinctly --
3420 make a distinction from, you know, the regular emergency
3421 planning and response efforts?

3422 Mr. Aaronson. It is in some ways very similar in that
3423 the goal is to restore power and one of the things I tell
3424 people is the best way to not have cyber vulnerabilities is
3425 to not have cyber infrastructure.

3426 So another thing that we are pursuing is to actually be
3427 able to operate in a degraded state manually, which is
3428 something Ukrainians were able to do and, again, which we

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

3429 have some capacity to do but, you know, are going to develop
3430 even more so.

3431 With respect to the differences between traditional and
3432 cyber mutual assistance, the first one is the obvious one.
3433 You're not going to have bucket trucks of, you know, cyber
3434 linemen driving down the highway to the affected area.

3435 But there is the capacity to support each other
3436 remotely. There are things that can be done to develop both
3437 information sharing in the event of these attacks and the
3438 sharing of equipment and the bringing in of noncompromised
3439 equipment to support the company that may have had equipment
3440 compromised.

3441 Last is with storms you see them coming and they are
3442 regional. And so companies from all over North America will
3443 descend, and did certainly this last year, on the affected
3444 region.

3445 Cyber doesn't know boundaries like that and so that is a
3446 consideration for how do you respond -- do I want to send my
3447 people into a company that's been impacted when I may be
3448 next, and that is something that the cyber mutual assistance
3449 program is contemplating and addressing.

3450 Mr. Tonko. Okay. Thank you very much.

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

3451 And Mr. Vance, a common theme we are hearing today is
3452 how partnerships -- those between utilities and between
3453 different levels of government -- are critical to ensuring
3454 that our electric system is reliable, resilient, and prepared
3455 for the worst.

3456 Can you give us a sense of the level of cyber expertise
3457 at the state and local levels?

3458 Mr. Vance. We have a number of folks at our Office of
3459 Technology who are the co-coordinators of our cybersecurity
3460 council who are spending their time on cybersecurity in
3461 coordination with our Department of Homeland Security, our
3462 Utility Regulatory Commission, and a number of folks across
3463 state government.

3464 So we do have some folks who are focused specifically on
3465 the cyber issues. This is a relatively recent thing. I
3466 think it started in 2016 but it's something we are trying to
3467 get up to speed on as soon as we possibly can.

3468 Mr. Tonko. Thank you. And your testimony mentioned the
3469 importance of a robust state energy security program. What
3470 kind of services and resources can DOE provide to our given
3471 states?

3472 Mr. Vance. I think that's something that can be defined

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

3473 as we explore this more. But the first things off the top of
3474 my head are more training and exercise.

3475 A lot of this planning and exercise activities -- for
3476 example, the exercise we did in Rhode Island that mapped a
3477 cyberattack on top of a natural disaster -- is something that
3478 was a very useful exercise, bringing people together and go
3479 through these issues and also put a face to who some of these
3480 people were at utilities, at DOE, at the states.

3481 So I think more exercise and opportunities to plan
3482 regionally are really helpful as well.

3483 Mr. Tonko. Thank you very much.

3484 And seeing that I have no time remaining, I yield back,
3485 Mr. Chair.

3486 Mr. Walberg. I thank the gentleman.

3487 Seeing there are no further members wishing to ask
3488 questions, I would like to thank all of our witnesses again
3489 for being here today and for the insights you shared with us
3490 and considering our questions.

3491 Before we conclude, I would like to ask for unanimous
3492 consent to submit the following documents for the record:
3493 number one, a statement from the American Public Power
3494 Association and the National Rural Electric Cooperative

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

3495 Association; a cybersecurity update letter from the American
3496 Public Power Association; a letter to Department of Energy
3497 Secretary Perry; a response letter from the Department of
3498 Energy Secretary Perry; a statement from Siemens Energy.

3499 [The information follows:]

3500

3501 *****COMMITTEE INSERT*****

This is a preliminary, unedited transcript. The statements within may be inaccurate, incomplete, or misattributed to the speaker. A link to the final, official transcript will be posted on the Committee's website as soon as it is available.

3502 Mr. Walberg. And pursuant to committee rules, I remind
3503 members that they have 10 business days to submit additional
3504 questions for the record and I ask that witnesses submit
3505 their response within 10 business days upon receipt of the
3506 questions.

3507 Without objection, the subcommittee stands adjourned.

3508 [Whereupon, at 1:04 p.m., the committee was adjourned.]