

**STATE OF NEW JERSEY
BOARD OF PUBLIC UTILITIES**

**I/M/O The Merger of Exelon Corporation)
And PEPCO Holdings, Inc.)** **BPU Docket No. EM14060581**

**DIRECT TESTIMONY OF

MAXIMILIAN CHANG

ON BEHALF OF THE
DIVISION OF RATE COUNSEL**

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Dated: November 14, 2014

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1 **I. STATEMENT OF QUALIFICATIONS**

2
3 **Q. Please state your name and business address.**

4 A. My name is Maximilian Chang. I am a Principal Associate with Synapse Energy
5 Economics, an energy consulting company located at 485 Massachusetts Avenue,
6 Cambridge, Massachusetts.

7 **Q. On whose behalf are you submitting testimony in this proceeding?**

8 A. I am submitting testimony on behalf of the Division of Rate Counsel.

9 **Q. Please describe your professional background at Synapse Energy Economics.**

10 A. My experience is summarized in my resume, which is attached as Attachment MC
11 1. I am an environmental engineer and energy economics analyst who has
12 analyzed energy industry issues for more than six years. In my current position at
13 Synapse Energy Economics, I focus on economic and technical analysis of many
14 aspects of the electric power industry, including: 1) utility reliability performance
15 and distribution investments, 2) nuclear power, 3) wholesale and retail electricity
16 markets, and 3) energy efficiency and demand response alternatives. I have been
17 an author and project coordinator for the last two biennial New England Avoided
18 Energy Supply Component reports used by energy efficiency program
19 administrators in the six New England states to evaluate energy efficiency
20 programs.

21 **Q. Please describe your experience in New Jersey energy matters.**

22 A. In the last six years, I have worked on the following specific New Jersey Board of
23 Public Utilities (“BPU” or the “Board”) dockets: EO09010049 and EO09010054
24 (Infrastructure Investment Plan), ER09080664 (2009 ACE Base Rate Case),

1 ER09060459 (Rockland Electric Smart Grid), EO11050306 (Stafford Properties
2 Apartments), ER11080469 (2011 ACE Base Rate Case), EO11110780 (PSEG
3 Base Rate Case), GO12050363 (South Jersey Gas Energy Efficiency),
4 ER12121071 (2012 ACE Base Rate Case), and EO13020155 (Public Service
5 Electric Energy Strong).

6 **Q. Please describe your educational background.**

7 A. I hold an M.S. degree from the Harvard School of Public Health in Environmental
8 Health and Engineering Studies, and a B.S. degree from Cornell University in
9 Biology and Classical Civilizations.

10 **Q. Have you previously testified before utility regulatory agencies?**

11 A. Yes. I have previously testified before the Massachusetts Department of Public
12 Utilities and the Maine Public Utilities Commission. I have also filed testimony
13 before the District of Columbia Public Service Commission, New Jersey Board of
14 Public Utilities, and the United States District Court District of Maine.

15 **Q. What is the purpose of your testimony in this proceeding?**

16 A. The purpose of my testimony is to review reliability commitments filed by Exelon
17 Corporation and Pepco Holdings Inc. (“the Joint Petitioners”) in their joint
18 petition (the “Joint Petition”) for the merger (the “Merger”) of the two entities.
19 My testimony will review: 1) Atlantic City Electric’s (“ACE”) historical
20 reliability performance and spending; 2) the Joint Petitioners’ reliability
21 commitments of 1.05 for SAIFI and 100 minutes for CAIDI by the end of 2020
22 relative to current reliability standards and commitments; and 3) ACE
23 employment level issues.

1 **II. FINDINGS AND RECOMMENDATIONS**

2
3 **Q. Please summarize your findings and recommendations.**

4 A. My findings and recommendations are summarized as:

5 1) ACE’s historical and current reliability improvements in the last few years
6 have been a direct result of the 2011 Reliability Improvement Plan
7 (“RIP”) approved by the BPU in ACE’s Phase II of the 2009 Base Rate
8 Case Docket No ER09080664. These reliability improvements are
9 independent of the Merger and should be the baseline for determining
10 incremental benefits of the Merger. For the Merger to be a benefit to
11 ratepayers in terms of reliability, the Joint Petitioners should markedly
12 improve upon ACE’s reliability and not just continue the positive trends
13 that ACE has already made absent the Merger.

14 2) The Board should accelerate the Joint Petitioners’ proposed merger
15 reliability commitments from 2018-2020 to 2016-2018 to be seamless
16 with the pre-merger RIP obligations.

17 3) The Board should require a firm commitment that the Joint Petitioners will
18 achieve the merger reliability commitments for SAIFI and CAIDI within
19 existing reliability budgets provided by ACE in response to discovery.

20 4) In addition to the merger reliability commitments made by the Joint
21 Petitioners, as a condition of the merger, the Board should require the
22 Joint Petitioners to commit to first quartile benchmarking performance

1 relative to their utility peers within a reasonable time frame to be
2 determined by the Board.

3 5) The 12.5 to 25 basis point for failure to meet the reliability commitments
4 are not stringent enough for the Joint Petitioners to ensure that its
5 proposed reliability commitments are met. A higher penalty should be
6 imposed and compliance should be determined at an earlier date.

7 6) It is my understanding the Board is currently contemplating the re-
8 adoption of Chapter 5 of the N.J.A.C. Title 14 which included the electric
9 utility reliability benchmarks. I reserve the right to supplement my
10 testimony once I have received more information about the proposed
11 amendments. At a minimum for the merger to be a positive benefit, the
12 Joint Petitioners should commit to a level of performance that is
13 substantially better than the new benchmark set by the Board.

14

15 **III. PROPOSED RELIABILITY COMMITMENTS**

16

17 **Q Do the Joint Petitioners claim to demonstrate that there will be no negative**
18 **impacts to reliability resulting from the Merger?**

19 A. The Joint Petitioners' have claimed that as a result of the merger ACE will meet
20 current reliability commitments and future reliability commitments that will not
21 be measured until 2021, years after the merger has already occurred. The Joint
22 Petitioners have not provided commitments to improve upon ACE's RIP
23 reliability levels reached before the program's end in 2016.

24

1 **Q. What are Atlantic City Electric’s current reliability requirements under New**
2 **Jersey Regulation?**

3 A. Under N.J.A.C. 14:5-8.9, Atlantic City Electric has two standards: 1) a
4 benchmark standard; and 2) a minimum reliability level for Customer Average
5 Interruption Duration Index (“CAIDI”), the average duration of sustained
6 interruptions per customer during the year; and System Average Interruption
7 Frequency Index (“SAIFI”), the average frequency of sustained interruptions per
8 customer during the year.^{1, 2} Under N.J.A.C. 14:5-8.9, the benchmark and
9 minimum requirement values for ACE are the five-year averages (2002-2006) for
10 CAIDI and SAIFI.³ The benchmark standard is aspirational whereas the minimum
11 reliability level is the standard that must be met by New Jersey’s electric utilities.
12 The benchmark standard is used to determine the minimum reliability level.⁴ The
13 Board may penalize ACE for not meeting its minimum requirements under
14 N.J.A.C.14:5-1.2 and 14:5-8.12(c).

15 ACE’s minimum requirements are summarized below:⁵

16
17 CAIDI: 144 minutes
18 SAIFI: 1.71
19

20 **Q. Has Atlantic City Electric always met the standards set by N.J.A.C.?**

21 A. Concerns regarding ACE’s reliability performance were one issue in the
22 Company’s 2009 base rate case (BPU Docket: ER09080664). From that Rate

¹ New Jersey Administrative Code. §14:5-8.9. Available at: <http://www.lexisnexis.com/hottopics/njcode/>.

² Dickerson, Charles, Page 3, lines 8-11.

³ New Jersey Administrative Code. §14:5-8.9. Available at: <http://www.lexisnexis.com/hottopics/njcode/>.

⁴ New Jersey Administrative Code. §14:5-8.9. Available at: <http://www.lexisnexis.com/hottopics/njcode/>.

⁵ Atlantic City Electric. Annual System Performance Report 2013. Dated May 30, 2014. Section B1 B2.

1 Case, the parties (Board Staff, Rate Counsel, and ACE) agreed to enter into a
2 Phase II proceeding (BPU Nos: EO09010049 and EO09010054) to address
3 reliability concerns among other matters as summarized below.⁶

4 The fourth issue identified in the April 28, 2010 Stipulation focused on
5 reliability concerns impacting the service quality provided to Petitioner's
6 customers. (Paragraph 5)

7
8 The RIP is designed to substantially increase the reliability of the
9 distribution system across ACE's operating area by reducing the
10 frequency and duration of customer outages. (Page 20)

11
12 Through discovery and discussions between 2010 and 2011, the three parties
13 agreed upon a 2011 stipulation to implement a reliability improvement plan ("RIP
14 Stipulation") to address reliability improvements that would ensure compliance
15 with BPU standards and improve ACE's reliability performance.⁷

16 **Q. What are the RIP commitments for ACE?**

17 A. Atlantic City Electric's RIP obligations for System Average Interruption Duration
18 Index (SAIDI) and SAIFI are more stringent than required under N.J.A.C. 14:5-
19 8.9 and relative to the Company's 2009 reliability performance.^{8, 9, 10} The 2016
20 RIP targets are SAIFI: 1.30 and SAIDI: 160 minutes (2.67 hours).

21
22 For an apples-to-apples comparison of 1) the N.J.A.C. 14:5-8-9 standards, 2) the
23 RIP commitments, and 3) the Joint Petitioners' reliability commitments; I will use

⁶ RCR ENG-1. Attachment 1.

⁷ RCR ENG-1. Attachment 1. Page 2.

⁸ RCR-ENG-1 Attachment 1. Page 19.

⁹ Dickerson. Page 4, lines 3-8.

¹⁰ The Reliability Improvement Plan (RIP) detailed the associated distribution spending to meet the more stringent reliability targets.

1 SAIFI and CAIDI values. Mathematically, CAIDI is equal to SAIDI divided by
2 SAIFI. Thus, I convert the RIP obligations for SAIFI and SAIDI to CAIDI.

3 ACE's RIP performance metric for CAIDI would be 123 minutes ($123=160\div 1.3$).

4 Restating the RIP obligations for 2016, they are:

5 SAIFI: 1.30

6 CAIDI: 123

7 As I stated earlier, the RIP commitments are commitments already made by ACE
8 and approved by Board Order in a previous proceeding and is unrelated to the
9 merger.

10

11 **Q. What are the Joint Petitioners' proposed reliability commitments for**
12 **Atlantic City Electric post merger?**

13 A. As stated in the direct testimony of Mr. Alden, Exelon has committed Atlantic
14 City Electric to meet the following SAIFI and CAIDI targets excluding major
15 events in 2020.^{11 12}

16 SAIFI: 1.05

17 CAIDI: 100

18

¹¹ RCR-ENG-6.

¹² RCR-ENG-5.

1 **Q. Will ACE's future reliability commitment be calculated in the same manner**
2 **as currently calculated?**

3 A. Yes, according to Mr. Alden ACE will use the Board's current methodology for
4 calculating SAIFI and CAIDI.¹³

5 **Q. How do these metrics compare with current reliability standards and ACE's**
6 **2011 RIP commitments for 2016?**

7 A. The Joint Petitioners' proposed merger reliability metrics are more stringent than
8 *current* N.J.A.C. 14:5-8.9 minimum reliability requirements and the Company's
9 RIP commitments.

10 **Q. Are these target values for each year starting in 2018?**

11 A. I do not believe so, because the Joint Petitioners have stated that the merger
12 reliability commitments are a three-year average (2018-2020) to smooth out
13 effects such as weather.¹⁴ However, the Joint Petitioners have also indicated that
14 the merger reliability commitments will exclude major events, which address the
15 impacts of severe storms.¹⁵ More importantly, the Joint Petitioners would report
16 to the Board its three-year average no later than April 1, 2021.¹⁶ Thus, the Board
17 will not be able to determine if the Joint Petitioners have achieved their reliability
18 commitment until several years after the Merger is completed, if approved.

19 **Q. If the Joint Petitioners' reliability commitments are more stringent than**
20 **current standards and commitments, why is there a concern?**

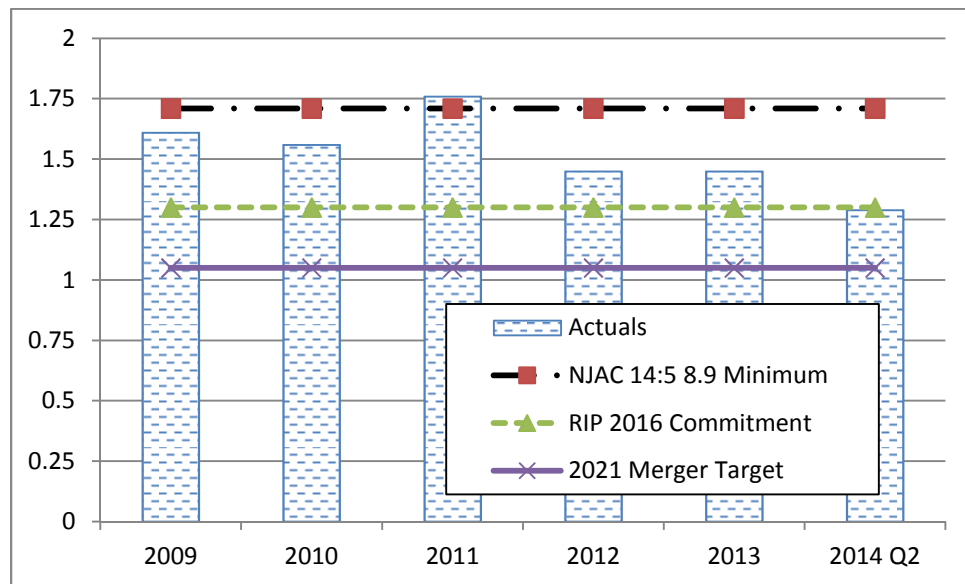
¹³ Alden. Page 8, lines 18-19.

¹⁴ Alden, Page 8, lines 13-15.

¹⁵ RCR-ENG-5.

¹⁶ Alden, Page 8, lines 20.

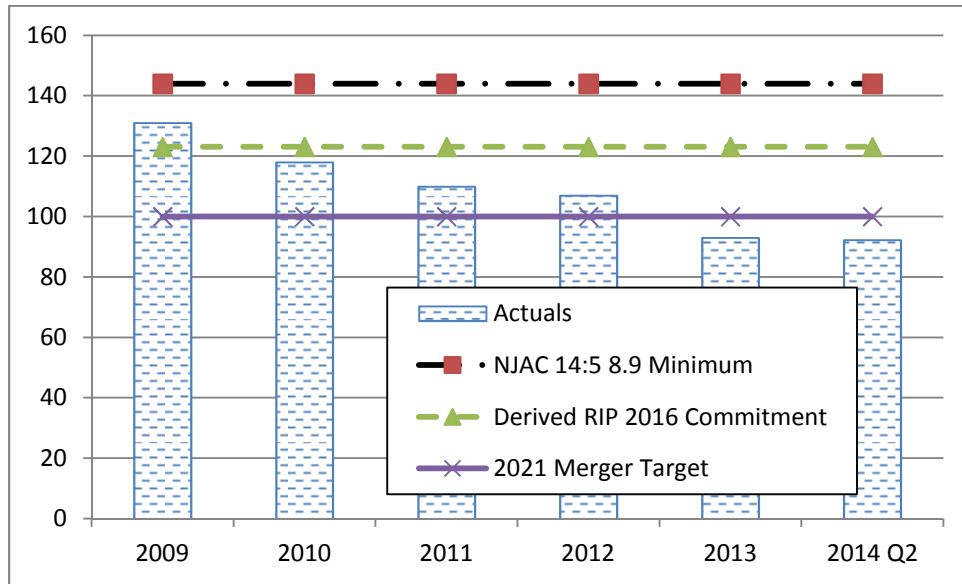
1 A. Figure MPC 1 and Figure MPC 2 summarize the Company's historical
2 performance relative to current and proposed reliability requirements. Lower
3 CAIDI and SAIFI numbers reflect shorter outage durations and fewer
4 interruptions.¹⁷ The two figures show that even before the announcement of the
5 Merger in April 2014, early indication of ACE's 2014 reliability performance
6 shows that it is meeting the 2011 RIP obligations and, in the case of CAIDI,
7 meeting the Joint Petitioners' 2018-2020 CAIDI commitment. On a SAIFI basis,
8 in the second quarter of 2014, the Company has met its 2016 RIP SAIFI target of
9 1.3 but still has some work to meet the merger commitment SAIFI target of 1.05.
10 For the Merger to be a benefit to ratepayers in terms of reliability, the Joint
11 Petitioners should markedly improve upon ACE's reliability and not just continue
12 the positive trends that ACE has already made absent the Merger.



13

¹⁷ Dickerson. 4, lines 1-2.

1 **Figure MPC 1. ACE SAIFI Performance Relative to NJAC 14:5 8.9, RIP**
2 **Commitment, and Joint Petitioners' 2021 Target**
3



4
5 **Figure MPC 2. ACE CAIDI Performance Relative to NJAC 14:5 8.9, RIP**
6 **Commitment, and Joint Petitioners' 2021 Target**
7

8 **Q. Have the Joint Petitioners analyzed how ACE will achieve the Joint**
9 **Petitioners' reliability commitments?**

10 A. Yes. The Joint Petitioners have analyzed ACE's reliability performance in order
11 to determine the Joint Petitioners' proposed reliability commitments for ACE.¹⁸
12 That same analysis also compared ACE's future performance goals to 2012 first
13 quartile rankings that I describe in detail below.

¹⁸ RCR-ENG-12 Confidential Attachment 1

1 **Q. Besides reliability commitments for ACE’s future reliability performance,**
2 **are there other measures of reliability performance that the Board may**
3 **consider?**

4 A. Yes, ACE and the other PHI distribution utilities already rank themselves against
5 peer utilities through benchmarking evaluations that are conducted regularly.^{19,20}
6 While I do not have an opinion on the methodology employed by PA Consulting
7 Group, I do note that ACE has participated and provided benchmarking studies
8 conducted by PA Consulting Group for 2009, 2010, 2012, 2013, and 2014.²¹

9 **Q. How does the Company compare to its peer utilities?**

10 A. Although ACE has made strides in reliability improvements relative to its
11 historical performance as shown in the two figures above, the Company still is
12 generally in the bottom 25 percent, or fourth quartile, compared to a peer group of
13 13 utilities reviewed in a 2014 benchmark analysis for SAIFI and SAIDI,
14 excluding major events and planned outages.²² While ACE’s 2013 CAIDI of 93
15 minutes places it in the second quartile; first quartile performance of CAIDI was
16 85 minutes. First quartile SAIFI performance was 0.68 events in the 2014
17 benchmark study and 61 minutes for SAIDI. The first quartile performance
18 metrics are more stringent than the merger reliability commitments currently
19 proposed and could provide continued reliability improvement.

¹⁹ RCR-ENG-26

²⁰ RCR-ENG-27

²¹ RCR-ENG-26

²² RCR-ENG-26 Attachment 5

1 **Q. Do you have any recommendations regarding benchmarking studies?**

2 A. Yes, as a condition for approval of the merger, I recommend that the Board also
3 require that ACE meet first quartile performance metrics relative to its peer
4 group—established through credible benchmarking studies—by 2018. The peer
5 group performance shows that ACE still has much room for reliability
6 improvement when compared to other peer utilities.

7 **Q. What is your recommendation regarding the goal of first quartile**
8 **performance for ACE?**

9 A. I recommend that the Joint Petitioners provide the Board with an analysis of what
10 reliability performance can ACE currently achieve through its existing reliability
11 related budgets and operation and maintenance expenses and then provide the
12 Board with an analysis of what incremental reliability related capital and
13 operation and maintenance expenses would be required to meet first quartile
14 performance. It is possible that first quartile performance will require additional
15 spending beyond current budgets, but the Board should have some indication if
16 the first quartile goal can be achievable with ACE's current resources.

17

1 **IV. RELIABILITY RELATED SPENDING AND BUDGETS**

2
3 **Q. Do the Joint Petitioners believe they can meet the merger reliability**
4 **commitments within existing ACE budgets?**

5 A. Yes, the Joint Petitioners state that the Company intends to achieve its heightened
6 reliability performance goals within existing reliability-related capital budgets.²³ I
7 note that because of the RIP program and the progress ACE has made under it, I
8 believe that meeting the merger commitment made by the Joint Petitioners should
9 not be difficult and in fact with respect to CAIDI, ACE has already met the
10 merger commitment.

11 **Q. Have the Joint Petitioners provided specifics as to how they will meet the**
12 **proposed merger reliability commitments under existing budgets?**

13 A. There is no complete explanation of how this will be achieved, other than to note
14 that the same programs originally developed by ACE will continue to be
15 implemented. Furthermore, the Joint Petitioners have not currently evaluated how
16 the merger will affect ACE planning and procedures.²⁴ Witness O'Brien describes
17 some "best practices" that were implemented as a result of the BGE/Constellation
18 merger, but he has not indicated which ones could be applied to PHI specifically
19 at this point.²⁵

20 **Q. What is Atlantic City Electric's actual and projected distribution capital**
21 **spending?**

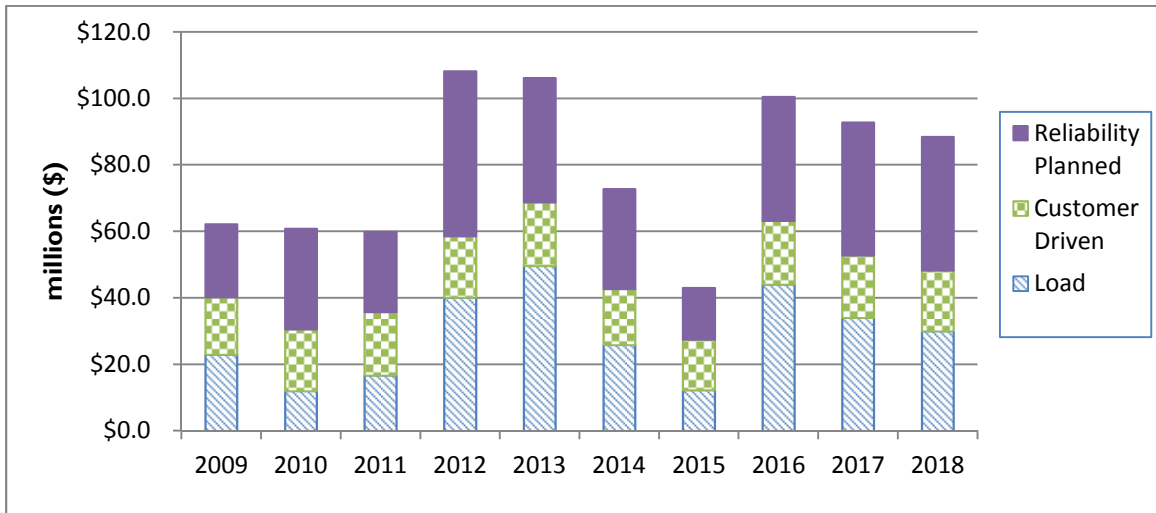
22 A. The Joint Petitioners do not include projected spending in the Joint Petition.
23 Figure MPC 3 shows the Company's historical capital spending based on RCR-

²³ Joint Petition dated June 14, 2014, Paragraph 31, Page 14.

²⁴ RCR-ENG-38.

²⁵ Denis O'Brien testimony, Pages 15-17.

1 ENG-3 and projected capital budgets for the years 2014-2018 based on the
2 response to RCR-ENG-4. The figure excludes emergency reliability spending.



3

4 **Figure MPC 3. ACE Historical (2009-2013) and Planned (2014-2018) Distribution**
5 **Capital Budgets Excluding Emergency Budgets**

6 The figure indicates that projected capital budgets will decrease in 2014 and 2015,
7 but then increase in 2016 through 2018. It should be noted that some of the
8 increase in reliability spending in 2012 and 2013 was the direct result of the RIP
9 program stipulation.

10 **Q. Are these budgets adequate to meet Atlantic City Electric's current and**
11 **future reliability commitments?**

12 **A.** As previously stated, the Company is committed to meet its RIP obligations in
13 2016, and merger commitments within existing reliability-related capital budgets.
14 The importance of the proposed budgets is that they represent ACE's
15 commitments **prior** to the merger. The merger reliability commitments should be

1 taken as incremental to existing commitments and should be made with no
2 increase to the existing budget as claimed by the Joint Petitioners.^{26, 27}

3 **Q. Do you have some concerns about ACE's historical reliability spending?**

4 A. As part of the RIP stipulation, ACE provided guidance on average spending from
5 the RIP program indicating that the planned five year cumulative capital spending
6 would be \$252 million (\$286 million less \$35 million for vegetation
7 management).²⁸ ACE's cumulative actual and currently planned reliability and
8 load growth spending (2012-2016) is \$341.8 million or \$89 million more than the
9 budget guidance that ACE gave in the 2011 stipulation.^{29 30}

10 The Board will have an opportunity to review ACE's distribution spending
11 for prudence in the next rate case.

12 **Q. What is your recommendation with regard to ACE's projected capital
13 budget?**

14 A. The Board should require guarantees from the Joint Petitioners that their proposed
15 reliability commitments for SAIFI and CAIDI will remain within the existing
16 reliability budgets provided by ACE through discovery.

17

²⁶ Joint Petition dated June 14, 2014, Paragraph 31.

²⁷ Crane, Christopher testimony, Page 12, lines 13-15.

²⁸ RCR-ENG-1. Attachment 1 (Exhibit C Attachment 2 Page 1 of 2).

²⁹ RCR_ENG-3.

³⁰ RCR-ENG-4.

1 **Q. Does vegetation management contribute to reliability performance?**

2 A. Vegetation management is a very important component of reliability performance,
3 since tree-related outages accounted for 19 percent of outage events and 23
4 percent of outage durations for ACE's 2013 performance.³¹ For 2013, ACE ranks
5 tree-related outages third for events and first for duration.³² Understandably, the
6 Company made commitments to improve vegetation management as detailed in
7 the enhanced vegetation management program that was part of RIP.³³

8 **Q. Do you have some recommendations with regard to vegetation management?**

9 A. ACE has currently budgeted \$14.4 million for vegetation management in 2014.³⁴
10 In light of the planned reliability-related budgets of approximately \$33 million per
11 year (2014-2018), it appears that appropriate vegetation management spending
12 and improvements should play a major role in reducing ACE's current outage
13 events and duration.

14 **Q. Are there other considerations besides capital and expense budgets that**
15 **could affect Atlantic City Electric's ability to meet its reliability**
16 **requirements?**

17 A. Yes. In addition to developing adequate budgets to fund ACE's ability to meet its
18 future reliability commitments, ACE will need to maintain adequate staffing in
19 New Jersey to maintain and improve ACE's distribution assets.

³¹ ACE 2013 Annual Performance. (2014) (page 23 of 140).

³² ACE 2013 Annual Performance. (2014) (page 23 of 140).

³³ RCR ENG-1. Attachment 1, (Exhibit C).

³⁴ RCR-ENG-4.

1 **V. CURRENT AND FUTURE STAFFING**

2
3 **Q. Has the Company provided details regarding future staffing requirements at**
4 **ACE?**

5 A. The Joint Petitioners have made a two-year commitment not to institute
6 involuntary workforce reductions at ACE.³⁵ In response to RCR-EMPLOY-14,
7 Exelon indicated that it does not have **current** plans to reduce employment levels
8 at ACE.³⁶ As described in more detail in Mr. Comings' testimony, the Joint
9 Petitioners have identified anticipated employment reductions, including
10 transmission and distribution operations in the future; they just have not identified
11 where these reductions will occur within the merged entity.

12 **Q. Related to staffing requirements, have the Joint Petitioners identified the**
13 **number of personnel that work on overhead lines by age?**

14 A. Yes, the Joint Petitioners have identified the breakout by age of ACE's personnel
15 who work on overhead lines, including supervisory positions.³⁷ This information
16 identifies the number of personnel over 51 years old as 45 out of the 160
17 identified by the PHI.

18 **Q. Why are voluntary reductions important to consider?**

19 A. I note above that the Joint Petitioners have committed to a two-year moratorium
20 on involuntary workforce reduction. However, voluntary reductions still may

³⁵ Joint Petition dated June 14, 2014, Paragraph 37.

³⁶ RCR-EMPLOY-14 and RCR-ECON-4.

³⁷ RCR-ENG-29 (part e).

1 occur at ACE as individual circumstances warrant. The pool of older employees
2 represents 28 percent of ACE overhead personnel. As I also note above, the Joint
3 Applicants have only indicated that they do not have current plans to reduce
4 employment levels for ACE. However, the Joint Applicants have not affirmed a
5 commitment to a specific level of employment at ACE after the two-year
6 commitment and net of any voluntary attrition. Nor have the Joint Petitioners
7 determined the exact number of reductions that may occur after the two-year
8 commitment.^{38, 39} If older employees retire and are not replaced, it may have a
9 negative impact on the Joint Petitioners reliability commitments.

10 **Q. Do you have any recommendations for the Board regarding employment**
11 **levels?**

12 A. Yes. While the Board should not deter the Joint Petitioners' ability to identify
13 opportunities to improve the reliability and performance of ACE as a result of the
14 merger, the Board should consider options to hold the Joint Petitioners
15 accountable for their proposed reliability commitments so that changes to staffing
16 do not detrimentally impact the Company's requirement to provide safe and
17 reliable service. As example, ACE's current staffing should be maintained for five
18 years as described in more detail in Rate Counsel Witness David Peterson's
19 testimony.

20

³⁸ S-ACE-EMP-1

³⁹ S-ACE-EMP-13

1 **VI. ACCOUNTABILITY FOR RELIABILITY COMMITMENTS**

2
3 **Q. Will the Company commit to a penalty if it fails to meet its 2020 reliability**
4 **commitments?**

5 A. Yes. The Joint Petitioners have proposed a financial penalty of a 25 basis point
6 reduction in its authorized return on equity (“ROE”) in the next base rate case
7 after January 1, 2021 if it fails to meet both requirements.⁴⁰ If it fails to meet one
8 of the two reliability requirements, the Board should impose a 12.5 basis point
9 reduction in ACE’s authorized ROE.⁴¹

10 **Q. Is this penalty sufficient?**

11 A. I do not think that a 12.5 to 25 basis point penalty that can only be assessed in the
12 middle of 2021 or almost seven years from today is stringent enough for the Joint
13 Petitioners to ensure that its proposed reliability commitments are met. A higher
14 penalty should be imposed and compliance should be determined at an earlier
15 date.

16 **Q. Can the Board impose additional penalties?**

17 A. Yes. The Joint Petitioners acknowledge that the Board may impose additional
18 financial penalties if ACE fails to meet its reliability commitments.⁴²

19 **Q. Why should the Board consider additional penalties?**

20 A. The Joint Petitioners have indicated that the merger will result in synergy
21 savings.⁴³ This means loss of jobs across PHI, although the Joint Petitioners have

⁴⁰ Kouzami testimony, page 31, lines 4-7.

⁴¹ Kouzami testimony, page 31, lines 16-21.

⁴² Kouzami testimony, page 31, lines 7-9.

⁴³ Kouzami testimony, page 28 lines 12-16.

1 not identified specific employment losses at the operational level beyond the two-
2 year commitments for ACE employees.⁴⁴ Future synergy savings should not come
3 at the expense of the Company's commitment to provide safe and reliable service.
4 The threat of imposing additional penalties provides the Board with leverage to
5 ensure that improved reliability commitments will be guaranteed, since ACE has
6 failed to meet the BPU's reliability requirements in the past and has improved its
7 performance after reaching a stipulated agreement with Rate Counsel and Board
8 Staff.

9 **Q. What requirement should the Board consider to ensure the Joint Applicants**
10 **proposed reliability commitments will be met?**

11 A. The Board should accelerate the Joint Petitioners' proposed reliability
12 commitments for 2018-2020 to 2016-2018. As I have noted previously, in the
13 second quarter of 2014, ACE has already achieved 1) the 2018-2020 reliability
14 commitment for CAIDI and 2) the 2016 RIP requirements. Waiting for the 2018-
15 2020 reliability commitments will create an unnecessary gap between the 2016
16 RIP commitments and the proposed merger reliability commitments. The Board
17 should close this commitment gap by accelerating the reliability commitment
18 period to 2016 to ensure that the merger will create positive reliability benefits for
19 ACE's customers.

20

⁴⁴ Kouzami testimony, page 28, lines 12-13.

1 **VII. FUTURE RELIABILITY REQUIREMENTS**

2
3 **Q. Should the Board consider how its changes in reliability standards impact**
4 **the Joint Petitioners?**

5 A. Yes. If the Board approves the merger, then ACE will have made two
6 commitments to reliability standards more stringent than N.J.A.C. 14:5-8.9 in the
7 last four years. However, I understand that the BPU is currently considering
8 revisions to N.J.A.C. 14:5-8.9 in a separate proceeding. While it is not known
9 what the future standards for ACE will be, it is known that the revisions to
10 N.J.A.C. 14:5-8.9 may result in more stringent requirements. I reserve the right to
11 supplement my testimony if new regulations are adopted, but in any event the
12 Joint Petitioners should commit to meet even more stringent CAIDI and SAIDI
13 levels than any regulations adopted. The Joint Petitioners' reliability
14 commitments should be compared to the more stringent standards to ensure that
15 the merger will result in a positive benefit for ACE ratepayers.

16 **Q. Does this conclude your testimony?**

17 A. Yes. However, I reserve the right to supplement my testimony subject to further
18 updates to discovery and information provided by the Joint Petitioners.

ATTACHMENT MC 1

**QUALIFICATIONS OF
MAXIMILIAN CHANG**



Maximilian Chang, Principal Associate

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PROFESSIONAL EXPERIENCE

Synapse Energy Economics Inc., Cambridge, MA. *Principal Associate*, 2013 – present, *Associate*, 2008 – 2013.

Consults and provides analysis of technologies and policies, electric policy modeling, evaluation of air emissions of electricity generation, and other topics including energy efficiency, consumer advocacy, environmental compliance, and technology strategy within the energy industry. Conducts analysis in utility rate-cases focusing on reliability metrics and infrastructure issues and analyzes the benefits and costs of electric and natural gas energy efficiency measures and programs.

Environmental Health and Engineering, Newton, MA. *Senior Scientist*, 2001 – 2008.

Managed complex EPA-mandated abatement projects involving polychlorinated biphenyls (PCBs) in building-related materials. Provided green building assessment services for new and existing construction projects. Communicated and interpreted environmental data for clients and building occupants. Initiated and implemented web-based health and safety awareness training system used by laboratories and property management companies.

The Penobscot Group, Inc., Boston, MA. *Analyst*, 1994 – 2000.

Authored investment reports on Real Estate Investment Trusts (REITs) for buy-side research boutique. Advised institutional clients on REIT investment strategies and real estate asset exchanges for public equity transactions. Wrote and edited monthly publications of statistical and graphical comparison of coverage universe.

Harvard University Extension School, Cambridge, MA. *Teaching Assistant*, 1995 – 2002.

Teaching Assistant for Environmental Management I and Ocean Environments.

Brigham and Women's Hospital, Boston, MA. *Cancer Laboratory Technician*, 1992 – 1994.

Studied the biological mechanism of tumor eradication in mouse and human models. Organized and performed immunotherapy experiments for experimental cancer therapy. Analyzed and authored results in peer-reviewed scientific journals.

EDUCATION

Harvard University, Cambridge, MA

Master of Science in Environmental Science and Engineering, 2000

Cornell University, Ithaca, NY
Bachelor of Arts in Biology and Classics, 1992

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