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1 PLACE: Dobbs Building  
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4 DATE: November 6, 2017  
5 DOCKET NO.: E-22, Sub 545  
6 TIME IN SESSION: 1:37 P.M. TO 1:47 P.M.  
7 BEFORE: Commissioner ToNola D. Brown-Bland, Presiding  
8 Chairman Edward S. Finley, Jr.  
9 Commissioner Bryan E. Beatty  
10 Commissioner Jerry C. Dockham  
11 Commissioner James G. Patterson  
12 Commissioner Lyons Gray  
13 Commissioner Daniel G. Clodfelter

## IN THE MATTER OF:

16 Application by Virginia Electric and Power  
17 Company, d/b/a Dominion Energy North Carolina  
18 for Approval of Demand-Side Management and Energy  
19 Efficiency Cost Recovery Rider Pursuant to  
20 G.S. 62-133.9 and Commission Rule

21 R8-69  
22  
23  
24

NORTH CAROLINA UTILITIES COMMISSION

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NORTH CAROLINA UTILITIES COMMISSION

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## E X H I B I T S

Identified / Admitted

Dominion Energy North Carolina

Exhibit 1..... --/9

Company Exhibit DRK-1, Schedules 1 - 7

(Schedule 5, page 1 filed under seal)..... 30/30

Company Exhibit JEB-1, Schedules 1 - 7

(Filed under seal)..... 47/47

Company Exhibit No. AJM-1m, Schedules 1 - 3

(Schedule 1, pages 2, 3 and 6;

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(Pages 2 and 3 filed under seal)..... 60/60

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pages 1 and 3 filed under seal..... 83/83

Company Exhibit DAS-1, Schedules 1 - 18..... 95/95

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## P R O C E E D I N G S

COMMISSIONER BROWN-BLAND: Good afternoon.

I am Commissioner ToNola D. Brown-Bland with the North Carolina Utilities Commission, the presiding Commissioner for this hearing. With me this afternoon are Chairman Edward S. Finley, Jr.; Commissioners Bryan E. Beatty, Jerry C. Dockham, James G. Patterson, Lyons Gray, and Daniel G. Clodfelter.

I now call for hearing Docket Number E-22, Sub 545, In The Matter of Application of Virginia Electric and Power Company, d/b/a Dominion Energy North Carolina for Approval of Demand-Side Management and Energy Efficiency Cost Recovery Rider Pursuant to G.S. 62-133.9 and Commission Rule R8-69.

G.S. 62-133.9 establishes the procedure for cost recovery of Demand-Side Management and Energy Efficiency expenditures. G.S. 62-133.9(d) provides for an annual Demand-Side Management and Energy Efficiency Rider for each electric public utility to recover all reasonable and prudent costs incurred and appropriate incentives for adoption and implementation of new Demand-Side Management and new Energy Efficiency measures.

Commission Rule R8-69(b) provides for the

NORTH CAROLINA UTILITIES COMMISSION

1 establishment of a Demand-Side Management and Energy  
2 Efficiency Experience Modification Factor Rider to  
3 allow the electric public utility to collect the  
4 difference between reasonable and prudently incurred  
5 costs, and the revenues that were actually realized  
6 during the test period under the rider then in effect.  
7 Commission Rule R8-69(f) provides that each electric  
8 public utility shall publish notice of the annual  
9 hearing at least 30 days prior to the hearing.

10 On August 15, 2017, Dominion Energy North  
11 Carolina filed its annual Application for approval of  
12 its Demand-Side Management and Energy Efficiency Cost  
13 Recovery Rider pursuant to G.S. 62-133.9 and Rule  
14 R8-69. Filed with the Application were direct  
15 testimony, exhibits and workpapers of Witnesses  
16 Michael T. Hubbard, Deanna R. Kesler, Jarvis E. Bates,  
17 Alan J. Moore, Melba L. Lyons, and Debra A. Stevens.

18 On August 24, 2017, Dominion filed the  
19 corrected direct testimony of Debra A. Stevens.

20 The participation in this docket by the  
21 Utilities -- by the Public Staff in the Utilities  
22 Commission is recognized pursuant to G.S. 62-15. And  
23 there are no Intervenorors in this docket.

24 On August 30, 2017, the Commission had

1 issued an Order Scheduling Hearing, Establishing  
2 Discovery Guidelines and Requiring Public Notice.  
3 That Order set this hearing in this docket for today,  
4 Monday, November 6, 2017, at this time.

5 On October 23, 2017, the Public Staff filed  
6 the affidavit of Michael C. Maness, and the direct  
7 testimony of Jack L. Floyd.

8 Dominion filed the required Affidavits of  
9 Publication on October 25, 2017.

10 On October 31, 2017, Dominion filed rebuttal  
11 testimony of Deanna R. Kesler and Alan J. Moore.

12 On November 1, 2017, Dominion and the Public  
13 Staff filed a Joint Motion for Witnesses to be Excused  
14 from Appearance at the evidentiary hearing. That  
15 Motion was allowed by Order dated November 3, 2017,  
16 and the Order stated that witness testimony,  
17 affidavits and exhibits would be received into  
18 evidence at the hearing.

19 In compliance with the requirement of  
20 Chapter 138A of the State Government Ethics Act, I  
21 remind the members of the Commission of our  
22 responsibility to avoid known conflicts of interest,  
23 and I inquire whether any member has such a conflict  
24 with respect to the matter before us this afternoon?

1 (No response.)

2 The record will reflect that no conflicts  
3 were identified. And I'll now call for appearances by  
4 counsel, starting with the Applicant.

5 MR. BREITSCHWERDT: Presiding Commissioner  
6 Brown-Bland and Commissioners, Brett Breitschwerdt  
7 with McGuireWoods on behalf of Dominion Energy North  
8 Carolina. With me today is in-house counsel,  
9 Mr. Horace Payne.

10 COMMISSIONER BROWN-BLAND: Welcome to both  
11 of you.

12 MS. FENNEL: I'm Heather Fennell with the  
13 Public Staff representing the Using and Consuming  
14 Public.

15 COMMISSIONER BROWN-BLAND: Ms. Fennell, have  
16 you identified any public witnesses that wish to  
17 testify?

18 MS. FENNEL: We have not.

19 COMMISSIONER BROWN-BLAND: Out of an  
20 abundance of caution, I'll just ask is there anyone  
21 present today in the hearing room that wishes to  
22 provide public witness testimony? If so, please come  
23 forward. I saw a movement out there but nobody came  
24 forward. Let the record reflect that no public



1 witnesses identified themselves.

2 Is there any other preliminary matter before  
3 we hear motions on the evidence? Anything else?

4 MR. BREITSCHWERDT: No, ma'am.

5 COMMISSIONER BROWN-BLAND: Then,  
6 Mr. Breitschwerdt, it's with you.

7 MR. BREITSCHWERDT: Thank you, Presiding  
8 Commissioner Brown-Bland. Consistent with the  
9 Commission's November 3rd Order excusing the witnesses  
10 for the Company and the Public Staff from appearing  
11 today, I'd first like to identify the Company's  
12 Application filed August 15, 2017, as Dominion Energy  
13 North Carolina Exhibit 1 for inclusion into the record  
14 as evidence in this case.

15 COMMISSIONER BROWN-BLAND: And that will be  
16 allowed and received into evidence.

17 Dominion Energy North Carolina Exhibit 1  
18 (Admitted)

19 MR. BREITSCHWERDT: Thank you. And at this  
20 time I'd like to walk through the Company's direct  
21 case and rebuttal case. Both the prefiled testimony  
22 which I'd ask to be copied into the record as if given  
23 orally from the stand, as well as the Company's  
24 exhibits that were filed in support of that testimony,

1 and I will also identify at a high level where  
2 information was designated as confidential. And, if  
3 the Commission has any questions, I'll be glad to  
4 identify with more specificity. So as part of the  
5 Company's Application of August 15, 2017, the Company  
6 prefiled the testimony of Michael T. Hubbard  
7 consisting of 19 typed pages and an Appendix A. No  
8 schedules were filed in support of Mr. Hubbard's  
9 testimony.

10 The Company prefiled the testimony of Deanna  
11 R. Kesler consisting of nine typed pages of questions  
12 and answers and an Appendix A, and seven schedules.  
13 Schedule 5 was identified as confidential and filed  
14 under seal.

15 The Company prefiled the direct testimony of  
16 Witness Jarvis E. Bates consisting of 11 typed pages  
17 of questions and answers and Appendix A, and seven  
18 schedules. Mr. Bates schedules -- all seven of  
19 Mr. Bates schedules were filed under seal as  
20 confidential.

21 The Company prefiled the direct testimony of  
22 Alan J. Moore consisting of 17 typed pages of  
23 questions and answers and an Appendix A, and three  
24 schedules. Schedules 1 and 2 were identified as

1 confidential and filed under seal.

2 The Company prefiled the direct testimony of  
3 Melba L. Lyons consisting of 10 pages of questions and  
4 answers and an Appendix A, and Schedules 1 through 4.  
5 Schedules 1 and 3 were identified as confidential and  
6 filed under seal.

7 Finally, as the concluding testimony in the  
8 direct case, the Company prefiled the testimony of  
9 Debra A. Stephens consisting of seven typed pages of  
10 questions and answers and an Appendix A, and 18  
11 schedules, all of which were public. So that was the  
12 Company's direct case.

13 And then on October 31, 2017, the Company  
14 filed the rebuttal testimony of Deanna Kesler  
15 consisting of three typed pages of questions and  
16 answers. No supporting schedules. All of which were  
17 public. The Company also filed rebuttal testimony of  
18 Alan J. Moore consisting of four typed pages of  
19 questions and answers, and Rebuttal Exhibit AJM  
20 Schedule 2, and that Schedule 2 was confidential and  
21 filed under seal.

22 So that represents the Company's direct case  
23 and rebuttal case prefiled in the docket, and I would  
24 ask that the testimony be copied into the record and

1 all of the Company's exhibits be accepted into  
2 evidence at this time.

3 COMMISSIONER BROWN-BLAND: And that includes  
4 the corrected testimony for Witness Stephens.

5 MR. BREITSCHWERDT: You are correct. I  
6 apologize. I missed the corrected prefiled testimony  
7 so that was filed publicly. I can get the date but --

8 COMMISSIONER BROWN-BLAND: August 24th?

9 MR. BREITSCHWERDT: Yes. Thank you.

10 COMMISSIONER BROWN-BLAND: All right.  
11 Mr. Breitschwerdt, your motion will be allowed and all  
12 of the testimony of the Company's witnesses as you've  
13 outlined them here for us will be received into  
14 evidence as if given orally from the witness stand,  
15 and the exhibits filed with them will be received into  
16 evidence. And those matters that you identified as  
17 confidential portions of the exhibits will be --  
18 remain confidential and be treated as such in the  
19 record.

20 (WHEREUPON, the prefiled direct  
21 testimony and Appendix A of  
22 MICHAEL T. HUBBARD is copied into  
23 the record as if given orally from  
24 the stand.)

**DIRECT TESTIMONY  
OF  
MICHAEL T. HUBBARD  
ON BEHALF OF  
DOMINION ENERGY NORTH CAROLINA  
BEFORE THE  
NORTH CAROLINA UTILITIES COMMISSION  
DOCKET NO. E-22, SUB 545**

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**AUG 15 2017**

- 1    **Q.**    Please state your name, business address, and position with Virginia
- 2           Electric and Power Company ("Dominion Energy North Carolina" or the
- 3           "Company").
- 4    **A.**    My name is Michael T. Hubbard, and I am Manager-Energy Conservation for
- 5           the Company. My business address is 701 East Cary Street, Richmond,
- 6           Virginia 23219. A statement of my background and qualifications is attached
- 7           as Appendix A.
- 8    **Q.**    Please describe your area of responsibility with the Company.
- 9    **A.**    I am responsible for overseeing the Company's Energy Conservation ("EC")
- 10          department, which manages the Company's demand-side management
- 11          ("DSM") and energy efficiency ("EE") programs ("DSM/EE Programs" or
- 12          "Programs").
- 13   **Q.**    What is the purpose of your testimony in this proceeding?
- 14   **A.**    My testimony supports the Company's request to recover all reasonable and
- 15          prudent costs incurred in adopting and implementing its authorized Phase I, II,
- 16          III, IV, and V Programs, and proposed Phase VI Non-residential Prescriptive
- 17          Program as well as utility incentives, through updated Rider C and the test
- 18          period experience modification factor ("EMF") rider, Rider CE

1 ("Application"). The purpose of my testimony is to: (1) provide an update on  
2 the status of the Company's current and proposed DSM/EE Programs in North  
3 Carolina; (2) provide an overview of the Application and introduce the other  
4 witnesses supporting the Company's cost recovery request in this case; and  
5 (3) present the Company's cost recovery request in this proceeding to the  
6 North Carolina Utilities Commission ("NCUC" or "Commission").

7 **I. UPDATE ON DSM/EE PROGRAMS**

8 **Q. Please provide a brief overview of the Company's approved DSM/EE**  
9 **Programs in North Carolina.**

10 **A.** In February 2011, the Commission approved five DSM/EE Programs, which  
11 the Company began offering to customers in the spring of 2011.<sup>1</sup> These  
12 "Phase I" DSM/EE Programs included the Company's:

- 13 • Residential Low Income Program;
- 14 • Residential Air Conditioner Cycling Program;
- 15 • Residential Lighting Program;
- 16 • Commercial HVAC Upgrade Program; and
- 17 • Commercial Lighting Program.

18 On December 31, 2011, the Company concluded the implementation phase of  
19 its Residential Lighting Program. Further, the Company concluded its North

---

<sup>1</sup> Orders approving these Programs were issued on February 22, 2011, in Docket Nos. E-22, Sub 463 (Low Income Program), Sub 465 (Air Conditioner Cycling Program), Sub 467 (Commercial HVAC Upgrade Program), Sub 468 (Residential Lighting Program), and Sub 469 (Commercial Lighting Program).

1 Carolina-only Commercial Lighting Program and Commercial HVAC  
2 Upgrade Program on December 31, 2014.<sup>2</sup>

3 In August 2013, the Company requested Commission approval to implement  
4 the following "Phase II" DSM/EE Programs:

- 5 • Non-residential Energy Audit Program;
- 6 • Non-residential Duct Testing and Sealing Program;
- 7 • Residential Home Energy Check-Up Program;
- 8 • Residential Duct Sealing Program;
- 9 • Residential Heat Pump Tune-Up Program; and
- 10 • Residential Heat Pump Upgrade Program.

11 The Commission approved the six Phase II Programs in December 2013, and  
12 the Company began accepting new customers in these Programs beginning on  
13 January 1, 2014.<sup>3</sup> On August 16, 2016, as amended on October 19, 2016, the  
14 Company filed a Motion for Commission approval to close the Phase II  
15 programs to new applications as of February 7, 2017, contemporaneous with  
16 their closure to new participants in Virginia, with the exception of the  
17 Residential Heat Pump Upgrade, which the Company asked to suspend as of

---

<sup>2</sup> On December 16, 2013, the Commission also approved the Company's request to transition the Phase I Commercial HVAC Upgrade Program (Sub 467) and the Commercial Lighting Program (Sub 469) from system-wide Programs to North Carolina-only Programs. By Order issued August 8, 2014, the Commission subsequently approved the Company's request to close these North Carolina-only Programs as of December 31, 2014.

<sup>3</sup> Orders approving these Programs were issued on December 16, 2013, in Docket Nos. E-22, Sub 495 (Non-Residential Energy Audit Program), Sub 496 (Non-Residential Duct Testing and Sealing Program), Sub 497 (Residential Duct Testing and Sealing Program), Sub 498 (Residential Home Energy Check Up Program), Sub 499 (Residential Heat Pump Tune Up Program), and Sub 500 (Residential Heat Pump Upgrade Program).

1 February 7, 2017. The Commission granted those requests by order issued on  
2 November 29, 2016.<sup>4</sup>

3 In June 2014, the Company requested Commission approval to implement the  
4 following “Phase III” DSM/EE Programs:

- 5 • Non-residential Heating and Cooling Efficiency Program;
- 6 • Non-residential Lighting Systems and Controls Program; and
- 7 • Non-residential Window Film Program.

8 The Commission approved the three Phase III Programs in October 2014, and  
9 the Company began accepting new customers in these Programs beginning on  
10 January 1, 2015.<sup>5</sup>

11 In July 2015, the Company requested Commission approval to implement the  
12 “Phase IV” Residential Income and Age Qualifying Home Improvement  
13 Program. After Commission approval in October 2015, this new Program  
14 opened to North Carolina customers on January 1, 2016.<sup>6</sup> The “Phase IV”  
15 Residential Income and Age Qualifying Home Improvement Program  
16 replaced the Phase I North Carolina-only Low Income Program, which  
17 concluded on December 31, 2015.<sup>7</sup>

18 In July 2016, the Company requested Commission approval to implement the  
19 “Phase V” Non-residential Small Business Improvement Program. After

---

<sup>4</sup> *Order on Motion to Close or Suspend Programs*, Docket Nos. E-22, Subs 495, 496, 497, 498, 499, and 500 (Nov. 29, 2016).

<sup>5</sup> Orders approving these Programs were issued on October 27, 2014, in Docket Nos. E-22, Sub 507 (Non-Residential Heating and Cooling Efficiency Program), Sub 508 (Non-Residential Lighting Systems and Controls Program), and Sub 509 (Non-Residential Window Film Program).

<sup>6</sup> *Order Approving Program*, Docket No. E-22, Sub 523 (Oct. 6, 2015).

<sup>7</sup> *Order Granting Motion to Offer North Carolina-Only Low Income Program*, Docket No. E-22, Sub 463 (Sept. 9, 2014).



1 Commission approval in October 2016,<sup>8</sup> the Company began accepting new  
2 customers in this Program beginning on January 1, 2017.

3 In October 2016, the Company requested Commission approval to implement  
4 an instant discount type of North Carolina-only Residential Retail LED  
5 Lighting Program for a two-year period. The Commission approved the  
6 North Carolina-only Residential Retail LED Lighting Program in December  
7 2016.<sup>9</sup>

8 **Q. Please provide a brief update on the implementation of the Company's**  
9 **approved DSM/EE Programs in North Carolina.**

10 **A.** The approved DSM/EE Programs have been successful in North Carolina.  
11 The Company launched the Residential Lighting Program in May 2011, and  
12 over 37,000 bulbs were sold through December 31, 2011, when the program  
13 was completed. Through the Low Income Program, the Company has  
14 performed approximately 930 low income audits and repairs in North Carolina  
15 during the period June 2011 through June 30, 2015. Through the Air  
16 Conditioner Cycling Program, the Company began installing air conditioner  
17 cycling devices in August 2011, and approximately 3,865 customers are  
18 participating in the Program as of June 30, 2017.

19 The Phase II Programs launched in North Carolina in January 2014. Since  
20 Program launch through closure/suspension of the Phase II Programs in  
21 February 2017, approximately 5,294 units have been serviced as part of the

---

<sup>8</sup> *Order Approving Program*, Docket No. E-22, Sub 538 (Oct. 26, 2016).

<sup>9</sup> *Order Approving Program*, Docket No. E-22, Sub 539 (Dec. 20, 2016).

1 Residential Heat Pump Tune-Up Program and 1,349 units have been upgraded  
2 in North Carolina to more efficient models as part of the Residential Heat  
3 Pump Upgrade Program. The Residential Duct Sealing Program has resulted  
4 in testing and repair of duct work associated with approximately 554 heat  
5 pump units. Approximately 1,049 residential customers have received  
6 customized energy audit reports and direct install measures as part of the  
7 Residential Home Energy Check-Up Program.

8 Examples of direct install measures include installing compact fluorescent  
9 light bulbs, faucet aerators, and door weather-stripping. The Non-residential  
10 Energy Audit Program has provided approximately 115 audits to North  
11 Carolina customers since Program launch through Program closure in  
12 February 2017. Of these 115 audits, 108 customers have installed approved  
13 measures and obtained a rebate as part of the Program. The Non-residential  
14 Duct Testing & Sealing Program has had approximately 250 participants in  
15 North Carolina since Program launch.

16 The Phase III Programs launched in North Carolina in January 2015. As of  
17 June 30, 2017, 84 customers have participated in the Company's Phase III  
18 Programs.

19 The Phase IV Residential Income and Age Qualifying Home Improvement  
20 Program launched in North Carolina in January 2016. As of June 30, 2017,  
21 251 customers have participated in the Company's Phase IV Program.

1 The Phase V Non-residential Small Business Improvement Program became  
2 available to qualifying customers in January 2017. As of June 30, 2017, 2  
3 customers have participated in the Company's Phase V Program, with  
4 approximately 10-15 additional projects in the queue, that may start in the  
5 near future, pending eligibility requirements.

6 As of June 30, 2017, the Company has 68 participating contractors for its  
7 North Carolina customers.

8 **Q. Please provide a status update on the recently closed DSM Phase II**  
9 **programs.**

10 A. The Company, along with its program contractors, have proceeded with  
11 closure of the DSM Phase II non-residential and residential Programs in an  
12 orderly manner, with the exception of the residential Heat Pump Upgrade  
13 Program, which I address further below. Notices of anticipated Program  
14 closure were posted on the Company's website in June 2016. Rebate  
15 payments were scheduled for completion by March 31, 2017. Program  
16 evaluation, measurement and verification will continue throughout 2017 for  
17 all DSM Phase II programs.

18 **Q. Please provide a status update on the recently-approved North Carolina-**  
19 **only Residential Retail LED Lighting Program.**

20 A. The Company and its implementation vendor, Ecova, have been working to  
21 launch the new LED Lighting Program in the Company's North Carolina  
22 service territory. As of mid-July 2017, the qualifying LED products are

1 available for purchase in numerous retail locations throughout the Company's  
2 North Carolina service territory. The implementation vendor has also  
3 performed face-to-face visits to all participating retail locations and provided  
4 training kits on how to install the bulbs for any interested customers. The  
5 Company has also updated its website content to assist interested customers in  
6 locating a participating retailer in the Residential Retail LED Lighting  
7 Program.

8 **Q. Has the Company proposed additional Programs for Commission**  
9 **approval and deployment in North Carolina?**

10 A. Yes. On July 28, 2017, the Company requested Commission approval of the  
11 Phase VI Non-Residential Prescriptive Program. This Program was recently  
12 approved for deployment in the Company's Virginia jurisdiction,<sup>10</sup> and will be  
13 offered on a system-wide basis after January 1, 2018, if approved by the  
14 Commission for deployment in North Carolina. The Program would offer  
15 incentives to non-residential customers in the Company's North Carolina  
16 service territory, for the installation of a variety of energy saving measures,  
17 including refrigeration evaporator fans (reach-in and walk-in coolers and  
18 freezers), commercial ENERGY STAR appliances, commercial refrigeration,  
19 commercial ice maker (ENERGY STAR), advanced power strip,  
20 cooler/freezer strip curtain, HVAC tune up, vending machine controls, kitchen  
21 fan variable speed drives, and commercial duct testing and sealing measures.

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<sup>10</sup> *Petition of Virginia Electric and Power Company for approval to implement new demand-side management programs and for approval of two updated rate adjustment clauses pursuant to § 56-585.1 A 5 of the Code of Virginia*, Final Order, Case No. PUE-2016-00111 (June 1, 2017).

1 The exact incentive levels will be determined in consultation with the  
2 Company's implementation contractor, taking current market conditions into  
3 account, with dollar amounts that reflect the energy saved per measure and are  
4 tied to the average incentive amount requested for Commission approval.

5 **Q. Has the Company recently evaluated deploying other DSM/EE Programs**  
6 **on either a system-wide or North Carolina-only basis?**

7 A. Yes. The Company's Energy Conservation group works continuously to  
8 identify and develop additional cost-effective DSM and EE Programs for  
9 deployment in the Company's Virginia and North Carolina service territories.  
10 As the Commission is aware, the Company has designed its DSM/EE  
11 programs to be managed and operated on a consolidated, system basis in order  
12 to minimize program expenses while optimizing program deployment.  
13 Specifically, the Company develops its DSM/EE program portfolio to be  
14 deployed in "phases," with program approval first being sought in Virginia  
15 and, if approved in Virginia, then sought in North Carolina. The Company  
16 uses outside implementation vendors to operate its DSM/EE programs on a  
17 system/jurisdictional basis. This approach has allowed North Carolina and  
18 Virginia to benefit from the efficiencies gained through consolidated operation  
19 of the programs, as program expenses have been allocated between the  
20 jurisdictions.

21 Notably, in 2016, the Company designed and requested State Corporation  
22 Commission of Virginia ("VSCC") approval to implement a proposed Phase  
23 VI Residential Home Energy Assessment Program along with the Non-

1 residential Prescriptive Program, as well as requested a two-year extension of  
2 the DSM Phase II Residential Heat Pump Upgrade Program and a five-year  
3 extension of the Virginia-only Non-residential Distributed Generation  
4 Program. Ultimately, the VSCC denied approval of the Residential Home  
5 Energy Assessment Program as well as the continuation of the Residential  
6 Heat Pump Upgrade Program,<sup>11</sup> resulting in these system-wide Program  
7 designs no longer being considered for deployment in North Carolina.

8 Consistent with prior direction by this Commission, the Company recently  
9 evaluated the possibility of implementing the Residential Home Energy  
10 Assessment Program and the currently-suspended Residential Heat Pump  
11 Upgrade Program on a North Carolina-only basis, including analyzing the cost  
12 effectiveness of a potential North Carolina-only program design. After  
13 receiving input from the Company's program design consultant regarding the  
14 feasibility of North Carolina-only versions of these Program designs and  
15 evaluating their cost-effectiveness, as well as engaging in discussions with the  
16 Public Staff regarding their cost effectiveness, the Company has determined  
17 that bringing forward North Carolina-only Residential Home Energy  
18 Assessment and Residential Heat Pump Upgrade Programs would not be cost-  
19 effective for the Company's customers at this time.

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<sup>11</sup> *Id.*

1   **Q.   Does the Company have any additional plans to evaluate the Residential**  
2       **Home Energy Assessment and Residential Heat Pump Upgrade**  
3       **Programs?**

4   **A.**   Yes. The EC group is currently evaluating a new, modified Residential Home  
5       Energy Assessment Program for potential inclusion in its 2017 Virginia DSM  
6       filing as a future system-wide Program. The Company will continue to work  
7       with its program design consultant to focus on redesign of the Residential  
8       Home Energy Assessment Program in order to determine whether a cost-  
9       effective design can be developed and brought forward on a system level in  
10      the upcoming Virginia regulatory filing in the fall of 2017.

11      Specific to the Residential Heat Pump Upgrade Program, the Company filed a  
12      Motion with the Commission on July 28, 2017, to formally close the  
13      suspended Program. The Company plans to issue a request for proposal in the  
14      fall of 2017, to request a re-design of the Residential Heat Pump Upgrade  
15      Program and then will evaluate whether to bring the redesigned Program  
16      forward in a future DSM/EE deployment phase.

- 1   **Q.    Approval to deploy the current system-wide DSM Phase IV Residential**  
2       **Income and Age Qualifying Home Improvement Program in the**  
3       **Company's Virginia Jurisdiction is limited to a three-year period ending**  
4       **April 2018. Please describe the Company's plans to evaluate**  
5       **continuation of this Program on either a system-wide or North Carolina-**  
6       **only basis.**
- 7   **A.    While the Phase IV Residential Income and Age Qualifying Home**  
8       **Improvement Program was designed and has been deployed on a system-wide**  
9       **basis, its approval in Virginia was limited to a period of three years, which**  
10      **will conclude in April 2018.<sup>12</sup> Recognizing the potential that the system-wide**  
11      **Program deployment will conclude (unless approved to be extended in**  
12      **Virginia), the Company is in the process of evaluating the cost effectiveness**  
13      **of a North Carolina-only Income and Age Qualifying Home Improvement**  
14      **Program extension for one year. If the North Carolina-only Program is**  
15      **reasonably cost effective, the Company plans to file a program application**  
16      **with the Commission to deploy the Income and Age Qualifying Home**  
17      **Improvement Program on a North Carolina-only basis in 2018. This one-year**  
18      **program offering would fill a gap between closure of the DSM Phase IV**  
19      **Income and Age Qualifying Home Improvement Program in late 2017/early**  
20      **2018 and the potential availability of a system-wide Income and Age**  
21      **Qualifying Home Improvement Program, which could then be reopened if**  
22      **ultimately approved to be extended in Virginia.**

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<sup>12</sup> In the Matter of Petition of Virginia Electric and Power Company for approval to implement new demand-side management programs and for approval of two updated rate adjustment clauses pursuant to § 56-585.1 A 5 of the Code of Virginia, VSCC Case No. PUE-2014-00071 (April 24, 2015).



1                                    **II.      OVERVIEW OF APPLICATION**

2    **Q.      What is the purpose of the Company's Application in this proceeding?**

3    **A.      In this Application, the Company is filing its annual update and requesting**  
4           approval of an updated Rider C revenue requirement for January 1, 2018,  
5           through December 31, 2018, the proposed rate period ("Rate Period"), as well  
6           as seeking true up of January 1, 2016, through January 31, 2016 ("Test  
7           Period"), costs through the Company's EMF rider, Rider CE.

8    **Q.      Please provide a brief overview of the Company's approach to cost**  
9           recovery for its North Carolina DSM/EE Programs as set forth in this  
10          **Application.**

11   **A.      The costs of the Company's approved DSM/EE Programs have been**  
12          recovered during each annual R8-69 cost recovery proceeding in accordance  
13          with the Agreement and Stipulation of Settlement agreed to between the  
14          Public Staff and the Company in the Company's initial 2010 cost recovery  
15          proceeding ("Stipulation"), as well as the Cost Recovery and Incentive  
16          Mechanism attached as Stipulation Exhibit 1 to the Stipulation.<sup>13</sup> In the fall  
17          of 2014, in accordance with provisions of the original Stipulation, the  
18          Commission undertook a review of the Stipulation and Cost Recovery and  
19          Incentive Mechanism. On May 7, 2015, after receiving comments from the  
20          Company and the Public Staff, the Commission approved a revised Cost  
21          Recovery and Incentive Mechanism that governed cost recovery in the 2015

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<sup>13</sup> *Order Approving Agreement and Stipulation of Settlement, Approving DSM/EE Rider, and Requiring Compliance Filing*, Docket No. E-22, Sub 464 (Oct. 14, 2011).

1 and 2016 annual proceedings.<sup>14</sup> The 2015 Mechanism Order also required the  
2 Company and the Public Staff to file by March 1, 2017, as extended, an  
3 updated performance incentive proposal for Commission review and  
4 approval. On April 20, 2017, the Company and the Public Staff filed a Joint  
5 Proposal for New PPI, with a revised Mechanism attached as Appendix A  
6 (the “Mechanism”). The Commission issued an Order approving the revised  
7 Mechanism on May 22, 2017, which governs cost recovery for the instant  
8 Application.<sup>15</sup> The revised Mechanism amends the PPI to a “portfolio  
9 performance incentive” applicable to measures installed beginning with  
10 Vintage Year 2017, including the Rate Period in this proceeding. The  
11 Company has developed its Application and pre-filed testimony in accordance  
12 with the procedures set forth in the Mechanism, as recently approved by the  
13 Commission.

14 **Q. Will the Company present other witnesses in this proceeding?**

15 A. Yes. Deanna R. Kesler, Regulatory Consultant, Demand-Side Planning, will  
16 provide certain information required by NCUC Rule R8-69(f)(1)(ii)(a), (b),  
17 (d), and (e), as well as the Utility Cost Test (“UCT”), and supporting  
18 documentation for the PPI Test Period and Rate Period calculations made  
19 pursuant to the Mechanism. Company Witness Kesler will also present the  
20 Company’s evaluation, measurement and verification (“EM&V”) cost  
21 projections, and lost energy sales from EE Programs during the EMF Test

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<sup>14</sup> *Order Approving Revised Cost Recovery and Incentive Mechanism and Granting Waiver*, Docket No. E-22, Sub 464 (May 7, 2015) (“2015 Mechanism Order”).

<sup>15</sup> *Order Approving Revised Cost Recovery and Incentive Mechanism*, Docket No. E-22, Sub 464 (May 22, 2017).

1 Period. Jarvis E. Bates, Energy Conservation Compliance Manager, will  
 2 support the projected costs associated with the Company's DSM/EE Programs  
 3 for the Rate Period, actual costs associated with the Company's DSM/EE  
 4 Programs during the Test Period, as well as provide information on the  
 5 Company's event sponsorship and consumer education initiatives during the  
 6 Test Period and customer opt-outs pursuant to Commission Rule R8-69(d)(2).  
 7 Alan J. Moore, Regulatory Analyst III, will present the revenue requirements  
 8 associated with the DSM/EE Programs for the Rate Period and EMF revenue  
 9 requirements associated with the DSM/EE Programs for the Test Period.  
 10 Melba L. Lyons, Regulatory Analyst III, will explain the proposed assignment  
 11 and allocation of costs to the North Carolina jurisdiction for the DSM/EE  
 12 Programs. Debra A. Stephens, Regulatory Advisor, will present the  
 13 calculation of the proposed updated Rider C and EMF Rider CE.

14 **Q. Are the Company's North Carolina DSM/EE Programs consistent with**  
 15 **the Company's system-wide integrated resource plan ("Plan")?**

16 **A.** Yes. The Company has developed its Plan using a least cost modeling  
 17 methodology of reliable supply-side and demand-side options, pursuant to  
 18 North Carolina statutory and Commission policies. The Company's  
 19 operational DSM/EE Programs and proposed system-wide Non-Residential  
 20 Prescriptive Program were included in Company's 2017 Plan Update, as filed  
 21 on May 1, 2017, in Docket No. E-100, Sub 147.

1   **Q.    Please discuss the utility incentive the Company proposes for inclusion in**  
2       **the DSM/EE Rider.**

3    A.    The Company requests to recover a Rate Period PPI representing, as  
4           introduced above, a projected portfolio performance incentive as approved in  
5           the revised Mechanism. The Company also requests recovery of the Test  
6           Period PPI for vintage year 2016 and prior years, which has been derived  
7           based upon the traditional individualized program-based approach, and is  
8           being calculated consistent with the 2015 Mechanism Order and the  
9           methodology approved by the Commission in the Company's previous annual  
10          cost recovery proceedings. Company Witness Bates supports calculation of a  
11          streamlined projected PPI, as allowed in Paragraph 56 of the Mechanism, as  
12          well as the true up of the PPI based upon actual installed measurement units  
13          during the vintage year 2016, as required by Paragraph 60 of the Mechanism.

14   **Q.    Has the Company projected Rate Period net lost revenues in the utility**  
15       **incentives to be recovered during the Rate Period?**

16    A.    Not at this time in this proceeding. Consistent with the approach taken in the  
17           Company's 2014, 2015, and 2016 cost recovery applications, the Company  
18           has not projected lost revenues and proposes to include \$0 as the projected  
19           Rate Period net lost revenue utility incentive for this proceeding.

20           The current Rider CE will true up the Company's recovery of net lost  
21           revenues during the Test Period, as supported by Company Witness Moore's

1 testimony.<sup>16</sup> The Company will then true up net lost revenues for the current  
2 Rate Period based upon its actual test period experience in the 2018 cost  
3 recovery proceeding through EMF Rider CE.

4 **Q. Has the Company identified any found revenues to offset its request to**  
5 **recover net lost revenues?**

6 A. No. Consistent with Paragraph 47 of the Mechanism, the Company has  
7 evaluated its North Carolina activities for potential found revenues using the  
8 decision tree set forth in Attachment A of the Mechanism.<sup>17</sup> Specifically, the  
9 Company's EC, Rates, and Customer Solutions departments (which  
10 collectively oversee Dominion Energy North Carolina's tariffs, Programs, and  
11 utility-funded activities) evaluated the Company's North Carolina activities  
12 during the Test Period to determine whether its activities may be causing  
13 customers to increase demand or energy consumption, resulting in found  
14 revenues. The Company's review of its North Carolina activities under the  
15 decision tree has not identified any activities that resulted in found revenues  
16 during the Test Period and has not identified any activities that would result in  
17 projected found revenues during the Rate Period.

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<sup>16</sup> Should the Company's projection of net lost revenues again become significant, it could choose to request projected cost recovery in a future proceeding, as provided for in the Mechanism.

<sup>17</sup> The Company has informally used a decision tree methodology to review its North Carolina activities for found revenues since 2011.

1                   **III.    OVERVIEW OF COST RECOVERY REQUEST**

2   **Q.    Please summarize the components of updated Rider C and Rider CE and**  
3       **resulting revenue requirements proposed to be recovered in this**  
4       **proceeding.**

5   **A.    In accordance with Rule R8-69 and the Mechanism, updated Rider C will**  
6       **recover the Company's North Carolina allocated share (including 100%**  
7       **assigned cost of the North Carolina-only Programs) of the following**  
8       **components during the Rate Period: (i) the Company's projected costs of**  
9       **implementing the approved DSM/EE Programs during the Rate Period; (ii) the**  
10      **Company's projected Common Costs to be incurred during the Rate Period;**  
11      **and (iii) the Company's streamlined projected PPI. The Company's updated**  
12      **Rider C revenue requirement for the Rate Period is \$3,542,469, as further**  
13      **detailed in Schedule 1 of Company Witness Moore's testimony.**

14      In accordance with Rule R8-69 and the Mechanism, the Company's EMF  
15      Rider CE will true up and recover any under-recovery or refund any over-  
16      recovery of the Company's North Carolina allocated share (including 100%  
17      assigned cost of the North Carolina-only Programs) of the following  
18      components: (i) the Company's Test Period costs of implementing the  
19      approved DSM/EE Programs; (ii) the Company's Test Period Common Costs;  
20      (iii) the Company's Test Period Net Lost Revenues; and (iv) the Company's  
21      Test Period PPI. The Company's Rider CE revenue requirement during the  
22      Rate Period is \$202,430 as further detailed in Schedule 2 of Company  
23      Witness Moore's testimony.

1 Q. Does that conclude your prefiled direct testimony?

2 A. Yes, it does.

**BACKGROUND AND QUALIFICATIONS  
OF  
MICHAEL T. HUBBARD**

Michael T. Hubbard is Manager – Energy Conservation for Dominion Energy North Carolina. Since 2008, his responsibilities have included oversight of the design and implementation of new Demand Side Management programs, including vendor retention and oversight. In 2010, he served on the Virginia Governor’s Operational Review Taskforce to reduce costs and improve efficiencies for state government and also served on the board of the Richmond Region Energy Alliance, working with stakeholders on key energy efficiency issues. He is a certified Six Sigma Green Belt.

Mr. Hubbard joined Dominion Virginia Power in 1996 and has served in a number of regulatory and customer service-related leadership roles in the Delivery and Service Company organizations.

While in the position of Underground Damage Prevention Manager, he was appointed to serve on the State Corporation Commission of Virginia’s Advisory Committee for matters concerning the enforcement of the Virginia Underground Utility Line Damage Prevention Act, and also served on the board of directors that formed a new statewide Miss Utility call center.

Mr. Hubbard has a B.S. in History from Hampden-Sydney College and M.S.L.S. (Masters in Library Sciences) from the University of Kentucky, and is a member of the Phi Beta Kappa National Honor Society.

Mr. Hubbard has previously presented testimony before the North Carolina Utilities Commission and the State Corporation Commission of Virginia.



1 Company Exhibit No. DRK-1, Schedules 1 - 7

2 (Schedule 5, page 1 is confidential and

3 filed under seal)

4 (Identified and Admitted)

5 (WHEREUPON, the prefiled direct

6 testimony, Appendix A, and

7 rebuttal testimony of DEANNA R.

8 KESLER is copied into the record

9 as if given orally from the

10 stand.)

**DIRECT TESTIMONY  
OF  
DEANNA R. KESLER  
ON BEHALF OF  
DOMINION ENERGY NORTH CAROLINA  
BEFORE THE  
NORTH CAROLINA UTILITIES COMMISSION  
DOCKET NO. E-22, SUB 545**

- 1    **Q.**    Please state your name, business address, and position with Virginia  
2           Electric and Power Company ("Dominion Energy North Carolina" or the  
3           "Company").
- 4    **A.**    My name is Deanna Kesler and I am a Regulatory Consultant in Demand-Side  
5           Planning, which is part of the Company's Integrated Resource Planning  
6           organization. My business address is 120 Tredegar Street, Richmond,  
7           Virginia 23219. A statement of my background and qualifications is attached  
8           as Appendix A.
- 9    **Q.**    Please describe your area of responsibility with the Company.
- 10   **A.**    I am responsible for the evaluation of Dominion Energy North Carolina's  
11          demand-side management ("DSM") and energy efficiency ("EE") programs  
12          ("DSM/EE Programs" or "Programs"). This includes detailed analyses of  
13          approved and proposed DSM/EE Programs and the incorporation of DSM and  
14          EE measures into the Company's integrated resource planning ("IRP")  
15          process and long-term integrated resource plan (the "Plan"). My  
16          responsibilities also include planning, organizing, and coordinating  
17          evaluation, measurement and verification ("EM&V") work for all DSM/EE  
18          Programs through an independent third-party EM&V contractor, DNV GL

1 (formerly DNV KEMA Energy & Sustainability). This includes ensuring  
2 EM&V data is collected and made available to DNV GL for review and  
3 analysis, reviewing EM&V processes and reports, and coordinating all  
4 pertinent EM&V activities.

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

6 A. My testimony supports Dominion Energy North Carolina's request to recover  
7 all reasonable and prudent costs incurred in adopting and implementing the  
8 Company's portfolio of DSM/EE Programs as well as utility incentives,  
9 through its updated Rider C, as well as the Company's experience  
10 modification factor ("EMF") rider, Rider CE ("Application"). The purpose of  
11 my testimony is to support the true up of lost revenues and the Company's  
12 EM&V cost projections, as well as to provide certain information required by  
13 North Carolina Utilities Commission ("NCUC" or "Commission") Rule R8-  
14 69(f)(1)(ii)(a), (b), (d), and (e), with respect to the Company's DSM/EE  
15 Programs. Regarding EM&V, my testimony will: (i) show the energy  
16 savings for the previously-approved EE Programs over the EMF period  
17 January 1, 2016, through December 31, 2016 ("Test Period"), for purposes of  
18 calculating the Company's EMF; (ii) support the Company's EM&V costs  
19 over the January 1, 2018 through December 31, 2018 rate period (the "Rate  
20 Period") for the North Carolina jurisdiction, as well as the Test Period; and  
21 (iii) provide information on Air Conditioner Cycling Program activation  
22 events that occurred during the Test Period as required by Rule R8-  
23 69(f)(1)(iii)(g). My testimony will also provide the Utility Cost Test ("UCT")

1 and supporting documentation for the Program Performance Incentive (“PPI”)  
2 calculations for the Test Period and the Portfolio Performance Incentive for  
3 the Rate Period.

4 My testimony has been developed in accordance with the revised Cost  
5 Recovery and Incentive Mechanism (“Mechanism”) approved by the  
6 Commission on May 22, 2017, in Docket No. E-22, Sub 464.

7 **Q. Ms. Kesler, are you sponsoring any exhibits or schedules in connection**  
8 **with your testimony?**

9 A. Yes. Company Exhibit DRK-1, consisting of Schedules 1-7 (Schedule 5  
10 provided in public and confidential versions filed under seal), was prepared  
11 under my supervision and is accurate and complete to the best of my  
12 knowledge and belief. The Schedules I am sponsoring provide the following  
13 information in support of the Company’s Application:

- 14 1. Schedule 1 of my pre-filed direct testimony provides the Company’s  
15 total revenue requirement, avoided costs, and 2018 summer and winter  
16 peak and energy savings per unit measure for the Company’s DSM/EE  
17 Programs, as required by Rule R8-69(f)(1)(ii)(a), (b), (d), and (e) and  
18 calculated consistent with the Mechanism.
- 19 2. Schedule 2 provides a UCT calculation for each Program and the  
20 portfolio of Programs for the projected vintage year 2018, as defined  
21 in Paragraph 14 of the Mechanism.

- 1           3. Schedule 3 provides a comparison of the forecasted energy and  
2           summer and winter capacity reductions for the Company's ongoing  
3           Phase I Air Conditioner Cycling Program and Phase III, IV, & V  
4           DSM/EE Programs, as required by Rule R8-69(f)(1)(iii)(h).
- 5           4. Schedule 4 provides the cost-effectiveness test evaluations required by  
6           Paragraph 41 of the Mechanism.
- 7           5. Schedule 5 provides the Company's actually-incurred EM&V costs  
8           during the Test Period, as well as projected EM&V costs during the  
9           2018 Rate Period.
- 10          6. Schedule 6 supports the calculation of estimated energy savings for all  
11          DSM/EE Phase I, II, III, and IV programs over the Test Period for the  
12          EMF Rider, which is based on actual EM&V data collected and  
13          analyzed by DNV GL.
- 14          7. Schedule 7 presents the date, weather conditions, event trigger, and  
15          customer enrollment and activation data for the Air Conditioner  
16          Cycling Program during the Test Period.
- 17   **Q.    Please explain the information you have provided in your Schedule 1.**
- 18    A.    My Schedule 1 first presents the system-level revenue requirement per  
19          appropriate capacity, energy, and measure unit metric, for each on-going  
20          Phase I,<sup>1</sup> Phase III,<sup>2</sup> Phase IV,<sup>3</sup> and Phase V<sup>4</sup> DSM/EE Programs, as well as

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<sup>1</sup> The Company's ongoing Phase I DSM/EE Program is the Residential Air Conditioner Cycling Program (Docket No. E-22, Sub 465).

1 the proposed Phase VI<sup>5</sup> Non-residential Prescriptive Program during the Rate  
2 Period. This table was developed using the revenue requirement amounts  
3 requested for recovery during the Rate Period, as provided in Company  
4 Witness Alan Moore's Schedule 1. Next, my Schedule 1 provides the system-  
5 level avoided costs per appropriate capacity, energy, and measure unit metric,  
6 for each of the approved going-forward Phase I, Phase III, Phase IV, and  
7 Phase V, and the proposed Phase VI Program. The proposed jurisdictional  
8 allocation factors, as required by Rule R8-69(f)(1)(ii)(b), are provided in  
9 Company Witness Melba L. Lyons' Schedule 4. Finally, my Schedule 1  
10 shows the total expected system-level energy and summer and winter capacity  
11 reductions for each Program in the aggregate and per appropriate capacity,  
12 energy, and measure unit metric for the Rate Period. The per unit cost for the  
13 Air-Conditioning Cycling Program is based on summer demand reductions  
14 because the Company is a summer peaking utility.

15 **Q. By the terms of the Mechanism, how was the UCT developed in support**  
16 **of the Rate Period PPI calculation?**

17 **A.** The UCT used to support the calculation of the Rate Period PPI for each  
18 vintage year was developed in accordance with Paragraphs 13-14 of the

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<sup>2</sup> The Company's Phase III programs are the Non-residential Heating and Cooling Efficiency Program (Docket No. E-22, Sub 507), Non-Residential Lighting Systems and Controls Program (Docket No. E-22, Sub 508), and Non-Residential Window Film Program (Docket No. E-22, Sub 509).

<sup>3</sup> The Company's Phase IV program is the Income & Age Qualifying Home Improvement Program (Docket No. E-22, Sub 523).

<sup>4</sup> The Company's Phase V programs are the Small Business Improvement Program (Docket No. E-22, Sub 538) and the Residential Retail LED Lighting Program (Docket No. E-22, Sub 539).

<sup>5</sup> As discussed by Company Witness Michael T. Hubbard, the Company filed for Commission approval of the Phase VI Non-residential Prescriptive Program on July 28, 2017 (Docket No. E-22, Sub 543).

1 Mechanism. The Strategist model, a computer modeling and resource  
2 optimization tool, was used to calculate a projected UCT based on the 2018  
3 vintage year, using the base case assumptions consistent with the Company's  
4 most recent 2017 Integrated Resource Plan Update, as filed with the  
5 Commission on May 1, 2017, in Docket No. E-22, Sub 147 ("2017 Plan  
6 Update").

7 **Q. Please explain the role of the Total Resource Cost ("TRC") Test in**  
8 **calculating PPI under the Mechanism for vintage years 2016 and earlier.**

9 A. As described by Company Witness Michael T. Hubbard, the Commission  
10 approved amendments to the Mechanism on May 22, 2017,<sup>6</sup> which transitions  
11 the PPI to a portfolio-based incentive calculation beginning with vintage year  
12 2017. The TRC is one of the four cost/benefit tests required by the  
13 Mechanism to be applied in evaluating DSM/EE Programs, and is used in  
14 calculating the PPI under the traditional individualized program-based  
15 approach (which is applicable for the vintage years 2016 and prior) that are  
16 eligible for Test Period recovery as well as the portfolio-based approach  
17 applicable to the Rate Period. Pursuant to Paragraph 51 of the pre-existing  
18 Mechanism, each individual DSM/EE program is required to have a vintage  
19 year TRC above 1.00 or that program is presumed ineligible for a PPI. Each  
20 of the Company's Program's vintage year TRC test results recoverable during  
21 the Test Period had a TRC value above 1.00 except for the Residential Income

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<sup>6</sup> *Order Approving Revised Cost Recovery and Incentive Mechanism*, Docket No. E-22, Sub 464 (May 22, 2017).

1 and Age Qualifying Home Improvement Program, which is a program that is  
2 in the public interest. The Company is not seeking a PPI for this Program.

3 **Q. Please explain the role of the UCT Test in calculating PPI under the**  
4 **Mechanism for vintage year 2018 for recovery during the Rate Period.**

5 A. In accordance with Paragraph 53 of the Mechanism, the PPI shall be based on  
6 the net dollar savings of the Company's DSM/EE portfolio, as calculated  
7 using the UCT. Pursuant to Paragraph 52 of the Mechanism, Low-Income  
8 Programs or other programs explicitly approved with expected UCT results  
9 less than 1.00 shall not be included in the portfolio for purposes of the PPI  
10 calculation. However, for purposes of PPI determination, Low Income  
11 Programs shall be included, as appropriate, in dispatch calculations to  
12 determine avoided kW and kWh associated with Programs eligible for a PPI.

13 My Schedule 2 presents the 2018 vintage year UCT and TRC cost/benefit  
14 portfolio scores, as well as the individual program scores pursuant to  
15 Paragraphs 52-53 of the Mechanism.

16 **Q. Please explain the information you have provided in your Schedule 3.**

17 A. My Schedule 3 presents forecasted energy and summer and winter capacity  
18 reductions at the generator for the Company's ongoing Phase I, Phase III,  
19 Phase IV, and Phase V DSM/EE Programs during the Rate Period.  
20 Specifically, Schedule 3 provides a comparison of the Phase I, Phase III,  
21 Phase IV, and Phase V Programs forecasted in the Company's 2016 Plan and  
22 2017 Plan Update. Generally, differences in the forecasted energy and



1 capacity reductions can be explained by differences in program modeling  
2 assumptions, such as penetrations and load shapes. These differences arise in  
3 part from data collected through the EM&V process, changes to  
4 implementation schedules and jurisdictional requirements.

5 **Q. Did the Company perform going forward cost/benefit results for existing**  
6 **Programs as required by Paragraph 41 of the Mechanism?**

7 A. Yes. Going-forward cost/benefit results were performed for the Phase I AC  
8 Cycling Program, Phase III, and Phase IV Programs, and are included in my  
9 Schedule 4.

10 In accordance with Paragraph 41, the Company has not developed going-  
11 forward cost/benefit analyses for the Company's Phase V Small Business  
12 Improvement Program or for the North Carolina-only Residential Retail LED  
13 Lighting Program, which have not been implemented for at least 12 months.

14 **Q. What are the Company's objectives for EM&V?**

15 A. The objectives of the Company's EM&V are to provide an assessment of each  
16 Program's progress toward its goals, including tracking actual cumulative  
17 indicators over time versus the planning assumptions, such as the number of  
18 participants, estimated energy (kWh) and demand (kW) savings, and Program  
19 costs. EM&V tracking also provides average peak kW reduction per  
20 participant, average kWh savings per participant, if appropriate, and average  
21 incentive per participant for each Program.

1   **Q.    Have you provided the Company's estimated EM&V cost for the Rate**  
2       **Period and actual EM&V costs during the Test Period?**

3   **A.    Yes. My Schedule 5 provides the Company's projected EM&V costs during**  
4       the Rate Period, as well as the Company's actual EM&V costs during the Test  
5       Period for the North Carolina jurisdiction. The Company intends to continue  
6       to file its annual EM&V Report with the Commission on May 1 each year.

7   **Q.    Can you please describe the information provided in your Schedule 6?**

8   **A.    Yes. My Schedule 6 supports the calculation of estimated energy savings for**  
9       all DSM/EE Phases I, II, III, and IV Programs over the Test Period for the  
10       EMF Rider, which is based on actual EM&V data collected and analyzed by  
11       DNV GL. The lost sales (kWh) reflected in this schedule will be used by  
12       Company Witness Moore in the calculation of lost revenues in this  
13       proceeding.

14   **Q.    Have you provided information on the Air Conditioner Cycling Program**  
15       **activation events that occurred during the Test Period, as required by**  
16       **Rule R8-69(f)(1)(iii)(g)?**

17   **A.    Yes. My Schedule 7 reflects event-based data for the Air Conditioner Cycling**  
18       Program during the Test Period, including the date, weather conditions, event  
19       trigger, and customer enrollment and switch activation data.

20   **Q.    Does this conclude your pre-filed direct testimony?**

21   **A.    Yes, it does.**

**BACKGROUND AND QUALIFICATIONS  
OF  
DEANNA R. KESLER**

Ms. Kesler has held various positions with Dominion Energy North Carolina in the Power Operations Management Services, Generation and System Planning, Production Costing, Energy Efficiency, and Integrated Resource Planning areas. She originally joined Dominion Virginia Power in 1984 and returned in 2008. She has also had a variety of leadership roles prior to rejoining the Company both as a consultant and as an internal employee for several major corporations.

Ms. Kesler has a Master's in Business Administration from Virginia Commonwealth University. She also studied Business Administration at Virginia Commonwealth University and Chemical Engineering and Finance at Virginia Polytechnic Institute and State University.

**REBUTTAL TESTIMONY  
OF  
DEANNA R. KESLER  
ON BEHALF OF  
DOMINION ENERGY NORTH CAROLINA  
BEFORE THE  
NORTH CAROLINA UTILITIES COMMISSION  
DOCKET NO. E-22, SUB 545**

1   **Q.**    Please state your name, business address, and position with Virginia  
2           Electric and Power Company ("Dominion Energy North Carolina" or the  
3           "Company").

4   **A.**    My name is Deanna Kesler and I am a Regulatory Consultant in Demand-Side  
5           Planning, which is part of the Company's Integrated Resource Planning  
6           organization. My business address is 120 Tredegar Street, Richmond,  
7           Virginia 23219.

8   **Q.**    Are you the same Deanna Kesler who previously prefled direct testimony  
9           in this proceeding?

10   **A.**    Yes, I submitted prefled direct testimony on behalf of Dominion Energy  
11           North Carolina in this proceeding on August 15, 2017.

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

13   **A.**    The purpose of my rebuttal testimony is to address the recommendations by  
14           Public Staff-North Carolina Utilities Commission ("Public Staff") Witness  
15           Jack L. Floyd pertaining to the Company's Evaluation, Measurement &  
16           Verification Report ("EM&V Report") filed May 1, 2017, in Docket No. E-22,  
17           Sub 536 ("2017 EM&V Report").

1 **Q. Please describe Public Staff Witness Floyd's recommendations on pages 9**  
2 **through 12 of his testimony related to the Company's 2017 EM&V**  
3 **Report.**

4 **A.** In his testimony, Mr. Floyd states that several miscalculations related to input  
5 data were discovered during his review of the Company's 2017 EM&V  
6 Report, which he recommends the Company recalculate. The miscalculation  
7 impacts several programs, those being the Residential Home Energy Check  
8 Up, Non-Residential Energy Audit Program, Non-Residential Duct Testing  
9 and Sealing Program, Non-Residential Heating and Cooling Efficiency  
10 Program, and the Non-Residential Lighting Systems and Controls Program.  
11 However, Mr. Floyd notes that the Company and its third-party EM&V  
12 contractor, DNV GL, acknowledge that corrections need to be made and  
13 proposes to make them in the Company's next annual EM&V report filing.  
  
14 Further, Mr. Floyd recommends that future EM&V reports clearly identify  
15 any corrections to previous vintage year savings separate from the savings  
16 associated with the test year that is the subject of the EM&V report. He  
17 specifically recommends that the EM&V separately identify any changes or  
18 corrections, supplement to the total savings for the test year reported in the  
19 next EM&V report.

20 **Q. How does the Company respond to Mr. Floyd's recommendations?**

21 **A.** Dominion Energy North Carolina generally agrees with Mr. Floyd's  
22 recommendations and will file corrections to the 2017 EM&V Report for  
23 Non-Residential Lighting Systems and Controls, Non-Residential Duct

1 Testing and Sealing, and Non-Residential Heating and Cooling Efficiency  
2 Programs as soon as possible but no later than December 31, 2017. The  
3 corrected values and associated updates to the EM&V process will also be  
4 reflected in the Company's next annual EM&V report to be filed on or before  
5 May 1, 2018 ("2018 EM&V Report"), and also incorporated into future  
6 Dominion Energy North Carolina DSM cost recovery and program  
7 application filings.

8 The Company and DNV GL will also work with the Public Staff to develop a  
9 process going forward for implementing corrections and changes to the  
10 EM&V process and a reporting function to be implemented starting with the  
11 Company's 2018 EM&V Report, as recommended by Public Staff Witness  
12 Floyd.

13 **Q. Does this conclude your rebuttal testimony?**

14 **A.** Yes, it does.

1 Company Exhibit No. JEB-1, Schedules 1 - 7

2 (Schedules 1 - 7 are confidential and

3 filed under seal)

4 (Identified and Admitted)

5 (WHEREUPON, the prefiled direct

6 testimony and Appendix A of JARVIS

7 E. BATES is copied into the record

8 as if given orally from the

9 stand.)

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**DIRECT TESTIMONY  
OF  
JARVIS E. BATES  
ON BEHALF OF  
DOMINION ENERGY NORTH CAROLINA  
BEFORE THE  
NORTH CAROLINA UTILITIES COMMISSION  
DOCKET NO. E-22, SUB 545**

- 1    **Q.**    Please state your name, business address, and position with Virginia
- 2            Electric and Power Company ("Dominion Energy North Carolina" or the
- 3            "Company").
- 4    **A.**    My name is Jarvis E. Bates, and my title is Energy Conservation Compliance
- 5            Consultant for Dominion Energy North Carolina. My business address is 701
- 6            East Cary Street, Richmond, Virginia 23219. My educational background and
- 7            experience are detailed in Appendix A.
- 8    **Q.**    Please describe your area of responsibility with the Company.
- 9    **A.**    I am responsible for cost and reporting compliance matters in the Company's
- 10           Energy Conservation ("EC") department including: (1) cost preparation and
- 11           cost oversight associated with the demand-side management ("DSM") and
- 12           energy efficiency ("EE") programs ("DSM/EE Programs" or "Programs");
- 13           (2) cost compliance with DSM/EE Program related rider requirements; and
- 14           (3) EC department internal and external regulatory and managerial cost
- 15           reporting.
- 16    **Q.**    What is the purpose of your testimony in this proceeding?
- 17    **A.**    My testimony supports the Company's request to recover all reasonable and
- 18           prudent costs incurred in adopting and implementing the Company's portfolio



1 of DSM/EE Programs and utility incentives, through its updated Rider C, as  
 2 well as the Company's experience modification factor ("EMF") rider, Rider  
 3 CE ("Application"). In my testimony, I provide cost projections, including  
 4 Common Costs, for the Company's DSM/EE Programs for the period January  
 5 1, 2018, through December 31, 2018 (the "Rate Period"), as well as actual  
 6 costs incurred during the EMF period January 1, 2016, through December 31,  
 7 2016 ("Test Period"). My testimony also presents the Portfolio Performance  
 8 Incentive ("PPI") for each Program in accordance with the revised Cost  
 9 Recovery and Incentive Mechanism ("Mechanism") approved by the  
 10 Commission on May 22, 2017, in Docket No. E-22, Sub 464. I also calculate  
 11 the PPI EMF true-up for vintage year 2016 in accordance with the terms of the  
 12 Mechanism. Additionally, my testimony lists the commercial and industrial  
 13 customers that have elected to "opt out" of the Company's DSM/EE Programs  
 14 as required by NCUC Rule R8-69(d)(2).

15 **Q. Mr. Bates, are you sponsoring any exhibits or schedules in connection**  
 16 **with your testimony?**

17 **A.** Yes. Company Exhibit JEB-1, consisting of Schedules 1-7 (with all schedules  
 18 provided in public and confidential versions filed under seal), was prepared  
 19 under my direction and supervision and is accurate and complete to the best of  
 20 my knowledge and belief. My Schedules 1-5 support the development of the  
 21 projected Rate Period revenue requirement: Schedule 1 provides summary  
 22 system-level Program and system-level Common Costs; Schedule 2 provides  
 23 details for system-level Program Costs; Schedule 3 provides details for

1 system-level Common Costs; Schedule 4 provides DSM Projected Program  
2 Costs which are used by Company Witness Melba L. Lyons for purposes of  
3 allocating Common Costs; and Schedule 5 provides the streamlined  
4 calculation of the Projected PPI for qualifying Programs. Schedule 6 provides  
5 actual cost information in support of the PPI true-up. Schedule 7 provides  
6 actual cost information in support of the Test Period EMF revenue  
7 requirement developed by Company Witness Alan J. Moore and includes  
8 actual system-level Program and system-level Common Costs incurred during  
9 the Test Period.

10 **Q. Please identify the Company's DSM/EE Programs for which cost**  
11 **recovery is sought in this proceeding.**

12 **A.** The Company is seeking cost recovery for adopting and implementing:

13 (a) the previously-approved Phase I DSM/EE program: Residential Air  
14 Conditioner Cycling Program;<sup>1</sup> (b) the previously-approved Phase II DSM/EE  
15 programs: Non-residential Energy Audit Program, Non-residential Duct  
16 Testing & Sealing Program, Residential Home Energy Check-Up Program,  
17 Residential Duct Sealing Program, Residential Heat Pump Tune-Up Program,  
18 Residential Heat Pump Upgrade Program;<sup>2</sup> (c) the previously-approved Phase  
19 III DSM/EE programs: Non-residential Lighting Systems and Controls, Non-  
20 residential Heating and Cooling Efficiency, and Non-residential Window

<sup>1</sup> Docket No. E-22, Sub 465. All other Phase I programs except the Residential Air Conditioner Cycling Program have previously been concluded.

<sup>2</sup> Docket Nos. E-22, Subs 495, 496, 497, 498, 499, and 500. By Order issued on November 29, 2016, the Commission approved closure of the Phase II Programs as of February 7, 2017, with the exception of the Residential Heat Pump Upgrade Program, regarding which the Commission approved the Company's request to close as of February 7, 2017. On July 28, 2017, the Company motioned the Commission to close the currently-suspended Residential Heat Pump Upgrade Program.

1 Film;<sup>3</sup> (d) the previously-approved Phase IV Income and Age Qualifying  
2 Home Improvement Program;<sup>4</sup> (e) the previously-approved Phase V Non-  
3 Residential Small Business Improvement Program<sup>5</sup> and Residential Retail  
4 LED Lighting program;<sup>6</sup> (f) and the proposed Phase VI Non-Residential  
5 Prescriptive Program.<sup>7</sup> Due to the Company's Phase II Program closures, as  
6 explained by Company Witness Michael T. Hubbard, only limited wind down  
7 and evaluation, measurement and verification ("EM&V") costs are projected  
8 to be incurred during the Rate Period.

9 **Q. What costs are being projected for the Phase IV Income and Age**  
10 **Qualifying Home Improvement Program?**

11 A. As discussed by Witness Hubbard, the Company is reviewing the option of  
12 offering a North Carolina-only program in 2018 while the Company seeks  
13 approval in Virginia of an extension of the current system program, which  
14 ends in 2017. The approval in Virginia is anticipated in mid-2018. At this  
15 point, no costs are being projected for 2018; however, the Company will  
16 seek cost recovery through a future EMF true-up if the North-Carolina only  
17 program is offered in 2018.

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<sup>3</sup> Docket No. E-22, Subs 507, 508, and 509.

<sup>4</sup> Docket No. E-22, Sub 523.

<sup>5</sup> Docket No. E-22, Sub 538.

<sup>6</sup> Docket No. E-22, Sub 539.

<sup>7</sup> Docket No. E-22, Sub 543.

- 1   **Q.    What is the nature of the costs for the DSM/EE Programs?**
- 2    A.    The costs are primarily categorized as direct “Program Costs” and indirect
- 3       “Common Costs.” These Program Costs and Common Costs are those solely
- 4       associated with the EC department, which was assigned the responsibility to
- 5       separately identify and track DSM/EE costs related to the proposed Programs.
- 6       The projected Program Costs are those costs that are directly attributable to
- 7       individual Programs and primarily include costs based on signed vendor
- 8       contracts. Program Costs include design, implementation, marketing,
- 9       information technology hardware and software, call center, customer
- 10      incentives, equipment, startup costs, vendor margins, data collection and
- 11      reporting, promotional events, management and field operations, EM&V
- 12      costs, and similar vendor and/or internal costs. The majority of these Program
- 13      Costs are based on contracts with the Company’s five main Program vendors,
- 14      Enertouch, Inc., d/b/a GoodCents Solutions (“GoodCents”), Converge, Inc.,
- 15      Ecova, Honeywell, and Nexant. The Company will also incur certain indirect
- 16      Common Costs that are part of implementation of the DSM/EE Programs,
- 17      which are not specifically associated with any individual DSM Program.
- 18      These costs include certain customer communication costs, department labor
- 19      costs, dues and association costs, and external vendor costs. Company
- 20      Witness Alan Moore further addresses deferral of DSM/EE Program costs in
- 21      his prefiled direct testimony.

1   **Q.   How is the information on Program and Common Costs provided by you**  
2       **used by the other witnesses in this proceeding?**

3   A.   The Company is seeking to recover reasonable and prudent costs that are  
4       projected for implementation of the DSM/EE Programs during the Rate  
5       Period. As discussed above, such costs include the Program Costs and  
6       Common Costs. Schedule 1 of my prefiled direct testimony shows both  
7       Program Costs and Common Costs, at the system level, associated with  
8       implementation of the Phase I, Phase II, Phase III, Phase IV, Phase V, and  
9       proposed Phase VI DSM/EE Programs for the Rate Period. Company Witness  
10      Moore uses these costs to develop the revenue requirement in support of this  
11      Application. Company Witness Lyons then explains the assignment and  
12      allocation of these costs to the North Carolina jurisdictional customers, using  
13      penetration and participant percentages from my Schedule 4, which are  
14      provided pursuant to NCUC Rule R8-9(f)(1)(ii)(a). Finally, Company  
15      Witness Debra A. Stephens developed the DSM/EE Rider, Rider C, for  
16      recovery of the projected costs.

17   **Q.   How is the information you provide in Schedules 6 and 7 related to actual**  
18       **Test Period Program and Common Costs used by the other witnesses in**  
19       **this proceeding?**

20   A.   Through Rider CE, the Company is seeking to true up all DSM/EE Program  
21       and Common Costs incurred during the Test Period with the revenues  
22       received through Rider C. Company Witness Moore uses the actually-  
23       incurred Test Period DSM/EE Program and Common Costs set forth in my

1 Schedules 6 and 7 to develop the EMF revenue requirement to be recovered  
2 through Rider CE. Company Witness Lyons then explains the assignment and  
3 allocation of these costs to the North Carolina jurisdictional customers.  
4 Finally, Company Witness Stephens calculated Rider CE for recovery of these  
5 costs.

6 **Q. Please describe the recent changes to the PPI provisions in the**  
7 **Mechanism.**

8 A. As further discussed by Witnesses Hubbard and Deanna R. Kesler, the  
9 Mechanism has historically provided for a PPI based upon the performance of  
10 each individual program, which would be eligible for an incentive if the  
11 Program achieved a UCT above 1.0. Through the recent revisions to the  
12 Mechanism agreed to between the Company and the Public Staff and  
13 approved by the Commission on May 22, 2017, the Mechanism now provides  
14 for a "portfolio performance incentive" applicable to measures installed  
15 beginning with vintage year 2017, including the Rate Period in this  
16 proceeding. Paragraphs 49 – 61 of the Mechanism govern calculation and  
17 recovery of the PPI.

18 **Q. Please describe Schedule 5 of your prefiled direct testimony, which**  
19 **calculates the projected Rate Period PPI consistent with the Mechanism.**

20 A. My Schedule 5 calculates the projected Rate Period PPI in a manner  
21 consistent with Paragraphs 49 – 61 of the revised Mechanism, and consistent  
22 with the Company's approach approved in the 2016 cost recovery proceeding,

1 Docket No. E-22, Sub 536 ("2016 DSM Case"). Specifically, my Schedule 5  
2 utilizes two PPI components.

3 First, PPI "actual" results from pertinent vintage years (2016 and prior in this  
4 current case) are calculated using the methodology identical to past DSM  
5 cases.

6 Second, Projected PPI "estimates" for year 2018, the Rate Period in this  
7 current case, and for vintage year 2017, are calculated in accordance  
8 with Paragraph 55(b) of the Mechanism.

9 **Q. Please explain the Company's approach for calculating the projected**  
10 **Rate Period PPI.**

11 A. Paragraph 55(b) of the Mechanism provides that the Company may utilize a  
12 reasonable, simplified approach to estimated net dollar savings associated  
13 with measurement units installed in future vintage years for purposes of  
14 projecting the Rate Period PPI. The Company's approach for producing the  
15 projected Rate Period PPI relies on the two components of the calculation.  
16 For the first component, the Company uses the data supporting its PPI  
17 calculation in the prior year's DSM cost recovery proceeding to isolate the  
18 "actual" PPI dollar amount for the prior vintage year and then continues to use  
19 that amount in this current case as the first component of the projected PPI  
20 total revenue requirement. Consistent with the Company's approach in the  
21 2016 DSM Case, the second component of the PPI estimate is calculated  
22 using the current case's operating expense revenue requirement times 1% to

1 produce a dollar amount for “estimated” PPI. Adding the “actual” PPI dollar  
2 amount to the “estimated” PPI dollar amount for the rate year thus produces a  
3 streamlined and reasonably conservative estimate of the projected Rate Period  
4 PPI for each Program. This data would naturally refresh with every new  
5 DSM/EE cost recovery proceeding.

6 **Q. Please describe Schedule 6 of your prefled direct testimony, which**  
7 **calculates the PPI EMF true-up consistent with the Mechanism.**

8 A. My Schedule 6 calculates the projected Rate Period PPI in a manner  
9 consistent with Paragraph 59 of the revised Mechanism. I have obtained the  
10 number of actual installed measurement units and the verified kW and kWh  
11 savings associated with each Program for vintage year 2016 from the  
12 Company’s most recently filed EM&V Report, as filed May 1, 2017, in  
13 Docket No. E-22, Sub 536. Coupled with the Company’s actual costs for  
14 vintage year 2016, this information is used to calculate the actual net  
15 cost/benefit results for each Program. I then developed a comparison of actual  
16 results versus projected cost/benefit results that are used to derive a true-up  
17 PPI. Once a PPI true-up for a given vintage year has been completed based  
18 upon final EM&V data filed with the Commission, the Company finalizes its  
19 PPI true-up for that vintage year.



1   **Q.   Are you also providing information regarding the Company's event**  
2       **sponsorship and consumer education and awareness initiatives during the**  
3       **Test Period?**

4   **A.   Yes. As directed by the Commission, the Company provides the following**  
5       information regarding its event sponsorship and consumer education and  
6       awareness initiatives during the Test Period. The EC department actively ties  
7       its communication and outreach activities directly to a specific DSM/EE  
8       Program, so actual general education and awareness costs are limited.

9       The EC Department also relies heavily on the Dominion website to provide  
10      general education to our customers through tips, videos, online energy audit  
11      tools, among other channels. The EC program pages have garnered  
12      approximately 300,000 visits in the current Test Period. In addition, the  
13      Company's DSM II and DSM III implementation vendor, Honeywell, has  
14      created its own program web pages for detailed tracking on marketing efforts.  
15      Honeywell's program pages have garnered over 116,000 hits during the Test  
16      Period. In addition, the EC Department took advantage of other high-  
17      coverage, low-cost channels, such as social media. Dominion is continually  
18      growing social media presence on both Facebook and Twitter gaining, since  
19      creation, over 63,000 fans and 53,000 followers, respectively. The EC  
20      department has also partnered with several local television stations, airing  
21      stories on the conservation programs and customer success stories. Whenever  
22      possible, the EC department attempts to utilize low-cost options to  
23      communicate general education to our customers.

1   **Q.    Please elaborate on the status of DSM/EE opt-out customers.**

2   **A.    As required to be listed by NCUC Rule R8-69(d)(2), the following customers**  
3       have elected to opt-out of the Company's DSM/EE Programs pursuant to  
4       North Carolina General Statute § 62-133.9(f) and NCUC R8-69(d):  
5       Weyerhaeuser (1 account); Nucor Steel-Hertford (1 account); KapStone Paper  
6       and Packaging Company (2 accounts); KABA Ilco (1 account); Consolidated  
7       Diesel (1 account); Domtar Paper Company LLC (1 account); Enviva Pellets  
8       (2 accounts); Flambeau Products Corp. (1 account); Lowes Home Center, Inc.  
9       (5 accounts); Hospira, Inc. and Parkdale America LLC (1 account). Company  
10      Witness Stephens' prefiled direct testimony provides projected North Carolina  
11      total retail monthly sales for the Rate Period for accounts who have chosen to  
12      opt-out of the DSM/EE Rider, as required by R8-69(f)(1)(vii).

13   **Q.    Does that conclude your prefiled direct testimony?**

14   **A.    Yes, it does.**

**BACKGROUND AND QUALIFICATIONS  
OF  
JARVIS E. BATES**

Mr. Bates is the Energy Conservation Compliance Consultant for Dominion Energy Virginia/Dominion Energy North Carolina. His responsibilities include demand-side management and energy efficiency ("DSM/EE") program cost oversight, compliance and DSM/EE internal and external reporting. He has provided testimony in prior DSM filings in Virginia and North Carolina.

Mr. Bates has a Bachelor of Business Administration degree in Finance from James Madison University. Prior to joining the company in 2007, he had over 14 years of experience in finance, operations management, and leadership in the Telecom, Healthcare, and Retail industries. Since joining Dominion, he has held finance positions supporting the Services Company as well as supporting Energy Conservation.

OFFICIAL COPY

Aug 15 2017

1           Company Exhibit No. AJM-1, Schedules 1 - 3  
2           (Schedule 1, pages 2, 3 and 6 are confidential  
3           and filed under seal)

4 (Schedule 2, pages 2 and 3 are confidential  
5 and filed under seal)

6 Company Exhibit No. AJM-1, Rebuttal Schedule 2  
7 (Pages 2 and 3 are confidential and filed under seal)  
8 (Identified and Admitted)

9 (WHEREUPON, the prefiled direct  
10 testimony, Appendix, and rebuttal  
11 testimony of ALAN J. MOORE is  
12 copied into the record as if given  
13 orally from the stand.)

**DIRECT TESTIMONY  
OF  
ALAN J. MOORE  
ON BEHALF OF  
DOMINION ENERGY NORTH CAROLINA  
BEFORE THE  
NORTH CAROLINA UTILITIES COMMISSION  
DOCKET NO. E-22, SUB 545**

1   **Q.**    Please state your name, business address, and position with Virginia  
2           Electric and Power Company (“Dominion Energy North Carolina” or the  
3           “Company”).

4   **A.**    My name is Alan J. Moore. I am a Regulatory Analyst III in the Regulatory  
5           Accounting Department for Dominion Energy North Carolina. My business  
6           address is 701 East Cary Street, Richmond, Virginia 23219. A statement of  
7           my background and qualifications is attached as Appendix A.

8   **Q.**    Please describe your area of responsibility with the Company.

9   **A.**    I am responsible for analyzing and calculating revenue requirements for  
10          Dominion Energy North Carolina.

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

12   **A.**    My testimony supports the Company’s request to recover all reasonable and  
13          prudent costs incurred in adopting and implementing the Company’s portfolio  
14          of North Carolina demand-side management (“DSM”) and energy efficiency  
15          (“EE”) programs (“DSM/EE Programs” or “Programs”) and utility incentives,  
16          through its updated Rider C, as well as the Company’s experience  
17          modification factor (“EMF”) rider, Rider CE (“Application”).

1 The purpose of my testimony is to address the development of the updated  
2 Rider C and Rider CE revenue requirements in support of the Application.  
3 Pursuant to NCUC Rule R8-69, the Company's Rider C revenue requirement  
4 includes projected costs associated with: (a) the previously-approved Phase I  
5 Air Conditioner Cycling Program;<sup>1,2</sup> (b) the previously-approved Phase II  
6 DSM/EE programs: Non-residential Energy Audit Program, Non-residential  
7 Duct Testing & Sealing Program, Residential Home Energy Check-Up  
8 Program, Residential Duct Sealing Program, Residential Heat Pump Tune-Up  
9 Program, and Residential Heat Pump Upgrade Program;<sup>3</sup> (c) the previously-  
10 approved Phase III DSM/EE programs: Non-residential Lighting Systems &  
11 Controls Program, Non-residential Heating & Cooling Efficiency Program,  
12 and Non-residential Window Film Program;<sup>4</sup> (d) the previously-approved  
13 Phase IV DSM/EE program: Residential Income and Age Qualifying Home  
14 Improvement Program;<sup>5</sup> (e) the previously-approved Phase V Small Business  
15 Improvement Program;<sup>6</sup> the Residential Retail LED Lighting program;<sup>7</sup> and  
16 the proposed Phase VI Non-Residential Prescriptive Program.<sup>8</sup>

<sup>1</sup> Docket No. E-22, Sub 465. All other Phase I programs except the Residential Air Conditioner Cycling Program have previously been concluded.

<sup>2</sup> As of December 31, 2015, the Company closed the North Carolina-only Low Income Program. (Docket No. E-22, Sub 463.) All other Phase I programs except the Residential Air Conditioner Cycling Program have previously been concluded.

<sup>3</sup> Docket No. E-22, Subs 495, 496, 497, 498, 499, and 500. By Order issued on November 29, 2016, the Commission approved closure of the Phase II Programs as of February 7, 2017, with the exception of Residential Heat Pump Upgrade, regarding which the Commission approved suspension of February 7, 2017. On July 28, 2017, the Company filed a motion in Docket No. E-22, Sub 500 requesting Commission approval to close the suspended Residential Heat Pump Upgrade Program.

<sup>4</sup> Docket No. E-22, Subs 507, 508, and 509.

<sup>5</sup> Docket No. E-22, Sub 523.

<sup>6</sup> Docket No. E-22, Sub 538.

<sup>7</sup> Docket No. E-22, Sub 539.

<sup>8</sup> Docket No. E-22, Sub 543.

1 Pursuant to Paragraph 28 of the revised Cost Recovery and Incentive  
2 Mechanism ("Mechanism") approved by the North Carolina Utilities  
3 Commission's ("NCUC" or "Commission") May 22, 2017 Order issued in  
4 Docket No. E-22, Sub 464, the Rider CE revenue requirement includes a true-  
5 up of the Company's DSM/EE Rider C rates in effect for the Phase I, Phase II,  
6 Phase III, and Phase IV Programs during the 12-month period of January 1,  
7 2016, through December 31, 2016 ("Test Period").

8 The Rider C and Rider CE revenue requirements presented in this filing are  
9 developed in accordance with the revised Mechanism. Development of these  
10 revenue requirements are also consistent with the revenue requirements  
11 approved in the Company's 2012 – 2016 DSM/EE cost recovery proceedings,  
12 except as modified to comply with the new Mechanism.

13 **Q. Mr. Moore, are you sponsoring any exhibits or schedules in connection**  
14 **with your testimony?**

15 **A.** Yes. Company Exhibit AJM-1, consisting of Schedules 1 – 3 (Schedules 1  
16 and 2 provided in public and confidential versions filed under seal), was  
17 prepared under my supervision and direction and is accurate and complete to  
18 the best of my knowledge and belief. My Schedule 1 supports the projected  
19 rate period revenue requirement for Rider C, and Schedule 2 presents the  
20 revenue requirement for EMF Rider CE. Schedule 3 contains my supporting  
21 work papers pursuant to NCUC Rule R8-69(f)(1)(viii).

1   **Q.   Please summarize the key components of the two revenue requirements**  
2       **presented in this case.**

3   **A.   The pre-filed direct testimony of Company Witness Jarvis E. Bates provides**  
4       the projected costs and Portfolio Performance Incentive (“PPI”) related to  
5       each of the previously-identified DSM/EE Programs. I have used those cost  
6       projections pursuant to NCUC Rule R8-69 to calculate the expected revenue  
7       requirement for Rider C, from January 1, 2018, through December 31, 2018,  
8       the proposed rate period (the “Rate Period”) in this case. In particular, in  
9       order to calculate the projected revenue requirement for Rider C, I  
10      incorporated the following cost components: (1) operating expenses projected  
11      to be incurred during the Rate Period; (2) capital costs (including related  
12      depreciation expense) projected to be incurred during the Rate Period; and  
13      (3) PPI projected for the Rate Period pursuant to the revised Mechanism. As  
14      noted by Company Witness Michael T. Hubbard, and consistent with the  
15      Company’s last three cost recovery proceedings,<sup>9</sup> the Company is not  
16      projecting net lost revenues for the Rate Period in this proceeding. Each of  
17      these other cost components will be discussed in more detail later in my  
18      testimony.

19      For the DSM/EE EMF Rider CE, I have incorporated actual costs (both  
20      capital and O&M components) and PPI as provided by Company Witness  
21      Bates for the 12-month Test Period ending December 31, 2016. I have also

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<sup>9</sup> Docket Nos. E-22, Subs 513, 524, and 536.



1 included measured net lost revenues in the Rider CE revenue requirement for  
2 the Test Period as described in more detail later in my testimony.

3 **Q. How did you determine what the Rate Period and Test Period should be**  
4 **for this proceeding?**

5 A. Pursuant to NCUC Rule R8-69(a), the Rate Period is the same as the period  
6 during which the rider established under Commission Rule R8-55, the  
7 Company's fuel factor, is in effect. For this proceeding, the Rate Period will  
8 be January 1, 2018, through December 31, 2018. The Test Period for this  
9 proceeding will be the 12-month period ending December 31, 2016, as  
10 provided for in Paragraph 28 of the Mechanism.

11 **Q. What capital structure and rate of return on common equity has the**  
12 **Company used to calculate the capital related costs for the Test Period**  
13 **and Rate Period in this proceeding?**

14 A. Consistent with Paragraph 40 of the Mechanism, the Company has calculated  
15 the capital-related costs for the Test Period for the months of January through  
16 October 2016, using the actual capital structure and cost of capital for the 12-  
17 month period ended December 31, 2016, incorporating a 10.2% return on  
18 common equity ("ROE") that was approved in the Company's previous  
19 general rate case in Docket No. E-22, Sub 479. For the 2-month period of  
20 November and December 2016, the Company utilized the capital structure and  
21 cost of capital for the 12-month period ended December 31, 2016,  
22 incorporating a 9.90% ROE as approved in the Company's most recent

1 general rate case on December 22, 2016, in Docket No. E-22, Sub 532.<sup>10</sup> For  
2 the projected Rate Period in this proceeding, the Company has utilized the  
3 most recently filed NCUC ES-1 capital structure and cost of capital for the  
4 period ended June 30, 2017, incorporating the 9.90% ROE.

5 **Q. Do the Rider C and Rider CE revenue requirements include recovery of**  
6 **net lost revenues?**

7 A. Consistent with the Company's 2014, 2015, and 2016 applications for  
8 DSM/EE cost recovery, only Rider CE includes a request to recover measured  
9 net lost revenues, as allowed by Commission Rule R8-69(c)(1) and the  
10 Mechanism. As noted above, the Company has not projected Rate Period net  
11 lost revenues for recovery in this proceeding. Going forward, all net vintage  
12 year 2018 lost revenues will be appropriately recovered through a future EMF  
13 Rider CE true-up cost recovery factor. As I will discuss in greater detail  
14 below, Rider CE provides for the recovery of actual incremental North  
15 Carolina jurisdictional kWh energy reductions for the Test Period.

16 **Q. Are there any other limitations on the eligibility of energy savings as a**  
17 **result of the Company's approved EE programs to count towards**  
18 **recovery of net lost revenues?**

19 A. Paragraph 43 of the Mechanism provides that kWh sales reductions achieved  
20 by a measurement unit installed in a given vintage year are eligible for use in  
21 calculating lost revenues for only the first 36 months after installation of the  
22 measurement unit. Further, Paragraph 46 of the Mechanism provides that

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<sup>10</sup> See *Order Granting General Rate Increase*, Docket No. E-22, Sub 532 (Dec. 22, 2016).

1 notwithstanding this 36-month period of kWh sales reductions, any installed  
2 measurement unit shall cease being eligible for use in calculating net lost  
3 revenues as of the effective date of (a) a Commission-approved alternative  
4 cost recovery mechanism that accounts for the eligible recoverable Net Lost  
5 Revenues associated with eligible kWh sales reductions, or (b) the  
6 implementation of new base rates approved in a general rate case or  
7 comparable proceeding to the extent that the rates set in that proceeding are  
8 set to explicitly or implicitly recover the net lost revenues associated with an  
9 installed measurement unit's kWh sales reductions.

10 **Q. Did the installation of the measurement units used to calculate the actual**  
11 **net lost revenues for the Test Period in this filing fall within the 36-month**  
12 **limitation provided for under Paragraph 43 of the Mechanism?**

13 **A.** There are three Phase I programs that were adjusted to exclude the applicable  
14 installed measurement units kWh sales reductions that exceed the 36-month  
15 period during the 2016 Test Period. As presented in Company Witness  
16 Deanna R. Kesler's Schedule 1, the following three Phase I programs were  
17 adjusted to exclude kWh sales reductions for installed measures that exceed  
18 the 36-month limit under Paragraph 43 of the Mechanism; 1) Residential Low  
19 Income Program; 2) Commercial HVAC Upgrade Program; and  
20 3) Commercial Lighting Program.

21 As part of the current DSM/EE EMF Rider CE, the Company is seeking to  
22 recover net lost revenues resulting from measures installed up through the end  
23 of the 2016 Test Period.

1    **Q.    Has a portion of kWh energy savings associated with previously-installed**  
2       **measures already been captured in the Company's non-fuel base rates?**

3    **A.    Yes.** Consistent with the methodology used in the Company's 2012 general  
4       rate case, the rates approved in the Company's 2016 general rate case were  
5       designed to include the cumulative kWh sales reductions recognized in the net  
6       lost revenues related to EE measurement units installed through June 30,  
7       2016, to be recovered through base rates beginning on November 1, 2016.  
8       Therefore, consistent with Paragraph 46 of the Mechanism, beginning  
9       November 1, 2016, the Company excludes from total kWh energy savings, the  
10      June 30, 2016 total cumulative monthly level of kWh sales reductions that  
11      were incorporated into base rates effective November 1, 2016. The net lost  
12      revenues proposed for recovery in this filing for November and December  
13      2016 include only incremental kWh energy savings resulting from energy  
14      efficiency measures installed subsequent to June 30, 2016.

15   **Q.    Mr. Moore, can you describe in more detail the projected Rate Period**  
16      **revenue requirement for Rider C requested in this case?**

17   **A.    The projected revenue requirement begins with the projected operating**  
18      expense revenue requirement as reflected on line 1 of page 1 of my Schedule  
19      1. The projected operating expenses for the Rate Period, as supported in the  
20      pre-filed direct testimony of Company Witness Bates, are presented for  
21      current recovery by program on line 1 of page 2 of my Schedule 1. Line 2 of  
22      page 2 of my Schedule 1 presents the system level common costs that are  
23      allocated to each program in accordance with the methodology described by

1 Company Witness Melba L. Lyons. The projected operating expenses and  
2 proportionate share of common costs for each program are then allocated to  
3 the North Carolina jurisdiction using the jurisdictional allocation factors  
4 supported by Company Witness Lyons, to derive the projected North Carolina  
5 jurisdictional operating expense revenue requirement presented on line 5 of  
6 page 3 of my Schedule 1.

7 The second component of the projected Rate Period revenue requirement is  
8 the projected capital costs revenue requirement as presented on line 2 of page  
9 1 of my Schedule 1. Lines 6 through 8 of page 3 of my Schedule 1 present the  
10 projected North Carolina jurisdictional depreciation expense, property taxes  
11 and rate base costs, respectively, related to the Air Conditioner Cycling  
12 Program. The projected rate base for the Rate Period as depicted on page 4 of  
13 my Schedule 1 includes the actual system level net plant balances as of June  
14 30, 2017, and projected monthly system level capital expenditures as  
15 supported by Company Witness Bates. The Air Conditioner Cycling Program  
16 is the only DSM/EE program with capital expenditures being presented for  
17 recovery in this current filing. The capital expenditures, projected to be  
18 closed to plant-in-service each month, are added to the actual June 30, 2017  
19 plant balance, and accumulated throughout the Rate Period. The projected  
20 monthly depreciation expense is projected using a new 7.15% annual  
21 depreciation factor from the Company's updated depreciation study. This  
22 projected annual depreciation rate factor assumes an estimated depreciable life  
23 of 15 years with 0% net salvage and includes interim retirement assumptions.

1 The resulting depreciation expenses projected to be incurred during the Rate  
2 Period are included for current recovery as shown on line 5 of page 4 of my  
3 Schedule 1, and the projected accumulated depreciation balances are shown as  
4 a reduction to average rate base as reflected on line 6 of page 4. The monthly  
5 accumulated deferred income taxes, as supported by my Schedule 3, also  
6 serve as monthly reductions to the projected rate base for the Rate Period as  
7 reflected on line 8 of page 4 of my Schedule 1. These system level projected  
8 amounts are then allocated to the North Carolina jurisdiction as explained by  
9 Company Witness Lyons in her pre-filed direct testimony in this proceeding.

10 The projected North Carolina jurisdiction rate base financing costs are  
11 determined by multiplying each two-month average rate base for the Rate  
12 Period by the Company's cost of capital as presented on line 4 of page 5 of  
13 my Schedule 1. As discussed above, for purposes of this Application, the  
14 Company has used the capital structure and cost of capital as provided in its  
15 June 30, 2017 NCUC ES-1 Report, incorporating a rate of return on common  
16 equity of 9.90%, which resulted in a weighted average cost of capital of  
17 7.451% as presented on page 5 of my Schedule 1. The equity component for  
18 purposes of determining the return on rate base is grossed up to a revenue  
19 level in developing the common equity including income taxes revenue  
20 requirement on rate base as presented on line 20 of page 4 of my Schedule 1.

21 The final component of my Rate Period revenue requirement is the projected  
22 PPI revenue requirement shown on line 4 of page 1 of my Schedule 1.  
23 Company Witness Bates provides the PPI calculation, which is incorporated

1 into the revenue requirement and reflected on line 10 of page 3 of my  
2 Schedule 1.

3 **Q. Please provide an overview of the DSM/EE EMF Rider CE revenue**  
4 **requirement.**

5 A. Consistent with Paragraph 37 of the Mechanism, this DSM/EE EMF requests  
6 recovery of the “difference between the reasonable and prudent Costs incurred  
7 or amortized during the applicable test period and the revenues actually  
8 realized during such test period under the DSM/EE rider then in effect.” The  
9 DSM/EE EMF Rider CE also includes a true-up of the PPI and net lost  
10 revenues components for this same Test Period. Finally, in accordance with  
11 the requirements of Commission Rule R8-69(b)(6) and Paragraph 39 of the  
12 Mechanism, the DSM/EE EMF Rider CE includes a return on the over- or  
13 under-recovery balance up and until the effective date of the Rate Period on  
14 January 1, 2018, calculated at the rate of return approved in the Company’s  
15 most recent general rate case in Docket No. E-22, Sub 532. Commission Rule  
16 R8-69(e)(3) provides that the EMF will remain in effect for a fixed 12-month  
17 period and will continue as a rider to rates established in any intervening  
18 general rate case.

- 1   **Q.   Mr. Moore, can you now describe the details of the DSM/EE EMF Rider**  
2       **CE revenue requirement calculation presented on page 1 of your**  
3       **Schedule 2?**
- 4   **A.   Yes. Page 1 of my Schedule 2 presents the DSM/EE EMF Rider CE revenue**  
5       **requirement requested for recovery during the Rate Period. The monthly**  
6       **revenue requirement on line 1 of page 1 of my Schedule 2 reflects the**  
7       **reasonable and prudent costs actually incurred during the Test Period in this**  
8       **proceeding. This actual monthly revenue requirement is calculated on pages 2**  
9       **and 3 of my Schedule 2 and will be discussed in greater detail below. The**  
10      **actual monthly Rider C revenues included on line 4 of page 1 of my Schedule**  
11      **2 were obtained from the Company's Accounting Department. As first**  
12      **established in the Company's 2013 DSM/EE cost recovery proceeding,**  
13      **pursuant to NCUC Rule R8-69(c)(3), lines 2 and 5 eliminate utility incentives**  
14      **from the calculation of carrying costs on the EMF Test Period over/under-**  
15      **recovery deferral. The net monthly over- or under-recovered amount as**  
16      **presented on line 7 of page 1 of my Schedule 2 will be refunded or collected**  
17      **over the Rate Period. In addition, as prescribed by Rule R8-69(b)(6), carrying**  
18      **costs are calculated on the over- or under-recovered deferral amounts net of**  
19      **utility incentives at the rate of return approved the Company's most recent**  
20      **general rate case in Docket No. E-22, Sub 532. Also pursuant to Commission**  
21      **Rule R8-69(b)(6), the equity component has been grossed up to reflect the**  
22      **necessary recovery of income taxes. The total carrying costs calculated on the**



1 monthly over- or under-recovered amounts net of utility incentives for the  
2 Test Period are presented on line 13 of page 1 of my Schedule 2.

3 Also pursuant to Rule R8-69(b)(6), financing costs are calculated for the  
4 current EMF test period over-recovery amount, exclusive of utility incentives,  
5 as presented on line 8 of page 1 of my Schedule 2. Line 15 reflects these  
6 carrying costs which are calculated on line 5 of page 6 of my Schedule 2 for  
7 the deferral period of January 2017 through December 2017 at the net-of-tax  
8 rate of return approved in the Company's most recent general rate case in  
9 accordance with Rule R8-69(b)(6).

10 The carrying costs net of utility incentives to be refunded on line 13 of page 1,  
11 combined with the related 2017 financing costs on line 15, are offset by the  
12 net monthly under-recovered amounts calculated on line 7, to reflect the total  
13 DSM/EE EMF Rider CE revenue requirement amount to be recovered over  
14 the Rate Period.

15 **Q. Please describe the remaining pages of Schedule 2 that support the**  
16 **DSM/EE EMF Rider CE revenue requirement presented on page 1 of**  
17 **your Schedule 2.**

18 **A.** Pages 2 and 3 of my Schedule 2 present the monthly revenue requirement for  
19 the reasonable and prudent costs actually incurred during the Test Period. The  
20 actual operating expenses provided by Company Witness Bates for each  
21 Program include a proportionate share of Common Costs allocated according  
22 to the methodology described by Company Witness Lyons, and are included

1 on line 2 of page 2 of my Schedule 2. This Common Cost allocation  
2 methodology is in compliance with the Mechanism and is also consistent with  
3 the methodology employed in the Company's previous DSM filings. The  
4 resulting system level amounts are then allocated to the North Carolina  
5 jurisdiction as explained by Company Witness Lyons to derive the North  
6 Carolina jurisdictional operating expenses including Common Costs presented  
7 on line 5 of page 3 of my Schedule 2. Line 6 of page 3 of my Schedule 2  
8 presents the monthly property taxes related to the air conditioner cycling  
9 program assets, while lines 7 and 8 present the actual North Carolina  
10 jurisdictional depreciation expense and return on rate base as calculated on  
11 page 4 of my Schedule 2, and will be discussed in more detail below. Next,  
12 the North Carolina jurisdictional Net Lost Revenues calculated on page 5 of  
13 my Schedule 2 are included on line 9 of page 3 of my Schedule 2. Finally, the  
14 actual PPI amounts for the Test Period, as calculated by Company Witness  
15 Bates, are included on line 10 of page 3 of my Schedule 2. The resulting  
16 monthly revenue requirement by program calculated on line 11 and totaled on  
17 line 12 of page 3 of my Schedule 2 reflects the reasonable and prudent costs  
18 actually incurred during the Test Period.

19 The revenue requirement on Rate Base Costs for the Test Period is calculated  
20 on page 4 of my Schedule 2. Actual monthly Net Plant balances and  
21 Accumulated Deferred Income Taxes were provided by the Fixed Assets  
22 Department and Tax Department, respectively. Depreciation expenses  
23 incurred during the Test Period are included in the actual costs, and the

1 accumulated balances are shown as a reduction to plant-in-service to derive  
2 cumulative system level of net plant as presented on line 4 of page 4 of my  
3 Schedule 2. The monthly accumulated deferred income taxes on line 5 of  
4 page 4, as supported by my Schedule 3, also serve as monthly reductions to  
5 the rate base for the Test Period. These system level amounts are then  
6 allocated to the North Carolina jurisdiction as explained by Company Witness  
7 Lyons to derive the monthly North Carolina jurisdictional AC Cycling rate  
8 base amounts as included on line 8.

9 The 2-month average North Carolina jurisdictional rate base over the Test  
10 Period is presented on line 9 of page 4. As described earlier in my testimony,  
11 to determine the return on rate base for the Test Period, the 2-month rate base  
12 averages on line 9 of page 4 were multiplied by the Company's cost of capital  
13 based on the capital structure and cost of capital for the 12-month period  
14 ended December 31, 2016, incorporating a rate of return on common equity of  
15 10.20% for the January 2016 through October 2016 period prior to the new  
16 base rates taking effect on November 1, 2016, which resulted in a weighted  
17 average cost of capital of 7.636%. For the period of November 1, 2016,  
18 through December 31, 2016, the Company utilized the Commission approved  
19 ROE of 9.90% which resulted in a weighted average cost of capital of  
20 7.474%, as presented on lines 8 of page 7 of my Schedule 2. The equity  
21 component is grossed up to a revenue level for purposes of calculating the  
22 revenue requirement on rate base costs during the Test Period as presented on  
23 line 17 of page 4 of my Schedule 2.

1 Page 5 of my Schedule 2 presents the calculation of the actual net lost  
2 revenues for the Test Period, based upon the actual North Carolina  
3 jurisdictional energy reductions as presented by Company Witness Kesler.  
4 Company Witness Debra A. Stephens provides in her pre-filed direct  
5 testimony in this case the billing rates applied to these North Carolina  
6 jurisdictional net kWh energy savings as presented on line 2 of page 5 of my  
7 Schedule 2. The actual net lost revenues are then reduced for variable O&M  
8 savings and found revenues. The variable O&M savings presented on line 4  
9 of page 5 were provided by the Company's Integrated Resource Planning  
10 Department. As discussed by Company Witness Hubbard, there were no  
11 actual found revenues for the Test Period as indicated on line 5 of page 5 of  
12 my Schedule 2. Line 6 of page 5 provides the Net Lost Revenues by program  
13 for the Test Period.

14 As previously mentioned, page 6 of my Schedule 2 presents the calculation of  
15 financing costs on the Rider CE net of utility incentives over-recovery to be  
16 refunded over the Rate Period, pursuant to NCUC Rules R8-69(b)(3) and (6),  
17 and Paragraph 39 of the Mechanism.

18 **Q. What is the total revenue requirement for Riders C and CE?**

19 **A.** As summarized on page 1 of my Schedule 1, the Company is requesting  
20 recovery of projected operating expenses of \$3,091,006, and projected capital  
21 cost revenue requirement of \$137,860. These amounts combined with the  
22 projected PPI of \$313,603 provide for a total Rider C revenue requirement of  
23 \$3,542,469.

1 As depicted on page 1 of my Schedule 2, the Rider CE revenue requirement  
2 presents the amount of \$202,430, which will be recovered by the Company  
3 over the Rate Period. The combined revenue requirements for the two riders,  
4 Rider C and Rider CE, for the Rate Period totals \$3,744,899, representing a  
5 \$1,968,125 increase over the rates currently in effect.

6 **Q. Does this conclude your pre-filed direct testimony?**

7 **A. Yes, it does.**

## APPENDIX A

**BACKGROUND AND QUALIFICATIONS  
OF  
ALAN J. MOORE**

Alan J. Moore received his undergraduate degree from Longwood University with a Bachelor of Science in Business Administration with an Accounting concentration in 2007. Mr. Moore received his Masters of Business Administration degree from Longwood University in 2015. Mr. Moore was hired by the Company in 2007 as an Internal Auditor prior to joining the Regulatory Accounting Department in April 2014. His current position of Regulatory Analyst III in the Regulatory Accounting Department includes responsibility for analyzing and calculating revenue requirements for Dominion Energy North Carolina rate proceedings.

OFFICIAL COPY

Aug 15 2017

**REBUTTAL TESTIMONY  
OF  
ALAN J. MOORE  
ON BEHALF OF  
DOMINION ENERGY NORTH CAROLINA  
BEFORE THE  
NORTH CAROLINA UTILITIES COMMISSION  
DOCKET NO. E-22, SUB 545**

1   **Q.**    Please state your name, business address, and position with Virginia  
2           Electric and Power Company ("Dominion Energy North Carolina" or the  
3           "Company").

4   **A.**    My name is Alan J. Moore. I am a Regulatory Analyst III in the Regulatory  
5           Accounting Department for Dominion Energy North Carolina. My business  
6           address is 701 East Cary Street, Richmond, Virginia 23219.

7   **Q.**    Are you the same Alan J. Moore who previously prefiled direct testimony  
8           in this proceeding?

9   **A.**    Yes, I submitted prefiled direct testimony and Company Exhibit AJM-1,  
10          consisting of Schedules 1-3 on August 15, 2017, in support of the Company's  
11          Application to recover the reasonable and prudently incurred cost of its North  
12          Carolina demand-side management and energy efficiency programs and utility  
13          incentives, through its updated Rider C, as well as the Company's experience  
14          modification factor ("EMF") rider, Rider CE. Specifically my testimony and  
15          Company Exhibit AJM-1 supported the Company's Rider C and Rider CE  
16          revenue requirements.

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

2 A. The purpose of my rebuttal testimony is to identify a minor change in the  
3 Rider CE EMF revenue requirement due to corrected cost information for the  
4 Phase I Air Conditioning Cycling program. There are no changes to the  
5 Company's Rider C revenue requirement supported by my direct testimony  
6 filed on August 15, 2017.

7 **Q. Mr. Moore, are you sponsoring any exhibits or schedules in connection**  
8 **with your rebuttal testimony?**

9 A. Yes. Company Rebuttal Exhibit AJM-1, consisting of updated Schedule 2  
10 (Schedule 2 provided in public version and confidential version filed under  
11 seal), was prepared under my supervision and direction and is accurate and  
12 complete to the best of my knowledge and belief. My rebuttal Schedule 2  
13 presents the updated Rider CE revenue requirement for the EMF true-up  
14 period.

15 **Q. First, can you comment on the corrected information for the Phase I Air**  
16 **Conditioning Cycling program?**

17 A. Yes. Through discovery, the Company noted that the months of February and  
18 March 2016 had erroneous charges included in the Air Conditioning Cycling  
19 program's Plant in Service balance that were subsequently adjusted out in  
20 May 2016. The February and March 2016 monthly balances used in the  
21 originally submitted Rider CE revenue requirement were not adjusted to  
22 reflect this correction. Once this issue was noted, the Company's Fixed



1 Assets department supplied me with updated monthly plant balances,  
2 accumulated depreciation balances, and depreciation expense for the EMF  
3 true-up period.

4 **Q. Mr. Moore, do the corrected monthly balances and depreciation expenses**  
5 **mentioned above change the revenue requirement of Rider CE that was**  
6 **presented in your direct testimony?**

7 A. Yes. I have updated the Rider CE EMF true-up revenue requirement to  
8 correct for the updated Air Conditioning Cycling program plant balances,  
9 accumulated depreciation, and depreciation expense. These changes can be  
10 found on page 4, lines 1, 2, and 3 of my rebuttal Schedule 2. These changes  
11 resulted in an overall Rider CE revenue requirement under-recovery position  
12 of \$201,456. This corrected Rider CE EMF under-recovery amount is (\$974)  
13 less than the revenue requirement under-recovery position of \$202,430  
14 presented in my Direct Schedule 2.

15 **Q. Are you presenting any other changes or corrections to the Rider CE**  
16 **revenue requirement at this time?**

17 A. No, I am not.

18 **Q. What is the result of the changes identified above?**

19 A. The updated Rider CE revenue requirement under-recovery of \$201,456 as  
20 calculated in my rebuttal Schedule 2 reflects a (\$974) decrease to the original  
21 Rider CE under-recovery amount of \$202,430.

1 **Q. Has the Company developed final rates to reflect the updates to the Rider**  
2 **CE revenue requirement described above?**

3 **A. No. The Company determined that the Rider CE billing rates calculated based**  
4 **upon the rebuttal Rider CE revenue requirement did not change from the**  
5 **Rider CE rates included in the Company's direct filing.**

6 **Q. Is the Company filing updated Rider C and Rider CE tariff sheets?**

7 **A. No.**

8 **Q. Does this conclude your rebuttal testimony?**

9 **A. Yes, it does.**

1           Company Exhibit No. MLL-1, Schedules 1 - 4  
2           (Schedule 1, pages 2 and 3 are confidential  
3                           and filed under seal)  
4           (Schedule 3, pages 1 and 3 are confidential  
5                           and filed under seal)  
6           (Identified and Admitted)  
7                           (WHEREUPON, the prefiled direct  
8                           testimony and Appendix A of MELBA  
9                           L. LYONS is copied into the record  
10                          as if given orally from the  
11                          stand.)  
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**DIRECT TESTIMONY  
OF  
MELBA L. LYONS  
ON BEHALF OF  
DOMINION ENERGY NORTH CAROLINA  
BEFORE THE  
NORTH CAROLINA UTILITIES COMMISSION  
DOCKET NO. E-22, SUB 545**

- 1   **Q.   Please state your name, business address, and position with Virginia**  
2       **Electric and Power Company (“Dominion Energy North Carolina” or the**  
3       **“Company”).**
- 4   **A.   My name is Melba L. Lyons and I am a Regulatory Advisor for Dominion**  
5       **Energy North Carolina. My business address is 701 East Cary Street,**  
6       **Richmond, Virginia 23219. A statement of my background and qualifications**  
7       **is attached as Appendix A.**
- 8   **Q.   Please describe your area of responsibility with the Company.**
- 9   **A.   I am responsible for the development of cost allocation factors and the**  
10       **preparation of cost of service studies.**
- 11   **Q.   What is the purpose of your testimony in this proceeding?**
- 12   **A.   My testimony supports the Company’s request to recover all reasonable and**  
13       **prudent costs incurred in adopting and implementing the Company’s portfolio**  
14       **of North Carolina demand-side management (“DSM”) and energy efficiency**  
15       **(“EE”) programs (“DSM/EE Programs” or “Programs”) and utility incentives,**  
16       **through its updated Rider C, as well as the Company’s experience**  
17       **modification factor (“EMF”) rider, Rider CE (“Application”). The purpose of**  
18       **my testimony is to explain the jurisdiction and customer class responsibility of**

1 costs for the approved and proposed DSM/EE Programs for which the  
2 Company seeks approval for cost recovery in this proceeding.

3 **Q. Ms. Lyons, are you sponsoring any exhibits or schedules in connection**  
4 **with your testimony?**

5 A. Yes. Company Exhibit No. MLL-1, consisting of Schedules 1-4 (Schedules 1  
6 and 3 provided in public and confidential versions filed under seal) has been  
7 prepared under my direction and supervision, and is accurate and complete to  
8 the best of my knowledge and belief. My Schedules 1-4 support the  
9 jurisdictional allocation and customer class allocation of DSM/EE costs for  
10 the development of Rider C and Rider CE, as follows:

- 11 • Schedule 1 shows the allocation or assignment of system-level Common  
12 Costs to each individual DSM and EE Program and the determination of  
13 jurisdictional responsibility of system costs for approved Programs,  
14 including allocated Common Costs.
- 15 • Schedule 2 shows the factors for allocating total Program revenue  
16 requirements to customer classes.
- 17 • Schedule 3 shows how total Program revenue requirements are allocated  
18 to customer classes.
- 19 • Schedule 4 provides the documents to be filed in accordance with NCUC  
20 Rule R8-69(f)(1)(ii)(b) and NCUC Rule R8-69(f)(1)(viii).

1   **Q.    Before describing how you propose to determine the jurisdictional and**  
2       **customer class responsibility for DSM/EE costs, is the manner you**  
3       **propose consistent with the allocation approach approved in last year's**  
4       **DSM/EE rider proceeding, Docket No. E-22, Sub 536?**

5   **A.    Yes. In its Final Order in the Company's 2016 North Carolina DSM case,**  
6       **Docket No. E-22, Sub 536, the Commission stated that, to the extent a change**  
7       **to the coincident peak demand allocation factor was approved in the**  
8       **Company's general base rate case, Docket No. E-22, Sub 532, a**  
9       **corresponding adjustment would be made to the 2017 rate period costs in the**  
10       **2017 DSM/EE rider proceeding. The Final Order in the base rate proceeding**  
11       **approved a change in the methodology for calculating the Summer Winter**  
12       **Peak and Average ("SWPA") demand allocation factor. This change in**  
13       **methodology is reflected in the calculation of the coincident peak demand**  
14       **allocation factor for this proceeding. Consistent with the approach taken in**  
15       **the 2016 DSM case, that allocation factor is then used to allocate DSM costs**  
16       **as required by the Mechanism. As with last year's proceeding, EE costs were**  
17       **allocated on the basis of energy.**

18                   **I.       ALLOCATION OF COMMON COSTS TO**  
19                   **DSM/EE PROGRAMS**

20   **Q.    Please explain Common Costs and how such costs are allocated to the**  
21       **DSM and EE Programs.**

22   **A.    Certain costs including internal labor and related costs, program marketing**  
23       **costs, and information gathering costs are not directly attributable to specific**

1 Programs. The Company characterizes these costs as "Common Costs,"  
2 which are needed to design, implement, and operate the Programs.

3 According to Paragraphs 29 – 30 of the revised Mechanism, system-level  
4 Common Costs are to be allocated to each DSM/EE Program on the basis of  
5 the estimated relative operating costs of each individual program including  
6 O&M, depreciation, property taxes, and insurance expenses.

7 My Schedule 1, Page 1 provides a general description of how system-level  
8 Common Costs are allocated to each Program. Page 2 provides the allocation  
9 of these costs to the Programs for the January 1, 2016, to December 31, 2016,  
10 test period ("Test Period") through the EMF for recovery through Rider CE.  
11 Page 3 provides the allocation of these costs for the projected January 1, 2018,  
12 to December 31, 2018, rate period ("Rate Period") for recovery through  
13 Rider C.

14 **II. JURISDICTIONAL ALLOCATION OF**  
15 **PROGRAM COSTS**

16 **Q. Please describe how the system costs for approved DSM/EE Programs,**  
17 **including allocated Common Costs, will be allocated to the North**  
18 **Carolina jurisdiction according to the Mechanism.**

19 **A.** System costs for the approved DSM/EE Programs, including allocated  
20 Common Costs, are allocated or assigned to the North Carolina jurisdiction  
21 according to Paragraph 30 of the Mechanism. Paragraph 30 provides for the  
22 cost of DSM programs to be allocated on the basis of the Company's

1 coincident peak and for the cost of EE programs to be allocated on the basis of  
2 energy. In the case of both the DSM and EE allocation factors, the following  
3 retail jurisdictions are included in the development of each factor: (i) the  
4 North Carolina retail jurisdiction; (ii) the Virginia retail jurisdiction; and  
5 (iii) Virginia non-jurisdictional customers excluding contract classes that are  
6 exempt or have opted out.<sup>1</sup>

7 My Schedule 1, Page 1 provides a general description of how DSM/EE costs  
8 are allocated or assigned to the North Carolina jurisdiction. My Schedule 1,  
9 Page 4 provides the development of jurisdictional allocation factors for DSM  
10 and EE Programs. Coincident peak and energy allocation factors are  
11 calculated as described above to allocate costs from the system to the North  
12 Carolina retail jurisdiction. For the updated EMF Test Period, the allocation  
13 factors for determining jurisdictional costs are based on the 12 months ended  
14 December 31, 2016, and are shown on Schedule 1, Page 4. For the Rate  
15 Period, the allocation factors are based on the 12 months ended December 31,  
16 2016, and are shown on Schedule 2, Page 2.

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<sup>1</sup> Virginia non-jurisdictional customers contract for electric service from Virginia Electric and Power Company, but these contract customers are not subject to the jurisdiction of the State Corporation Commission of Virginia and are exempt from or may opt out of the Company's Virginia DSM/EE programs and cost recovery riders. The contract classes that have elected not to participate and are not participating in DSM/EE programs include the County and Municipal class, the Commonwealth of Virginia class, the NASA class, and the Non-jurisdictional Outdoor Lighting class. The MS class, which represents large military and federal government customers, includes certain customers that are exempt or may opt out of participation in DSM/EE programs and payment of DSM/EE cost recovery riders. Certain other MS customers choose to participate in DSM/EE programs and pay the applicable Virginia DSM/EE cost recovery riders.



1                   **III. ASSIGNMENT AND ALLOCATION OF**  
2                   **JURISDICTIONAL COSTS TO CUSTOMER CLASSES**

3   **Q. Once costs have been determined for the North Carolina jurisdiction,**  
4           **how will the revenue requirements be assigned or allocated to the**  
5           **customer classes according to the Mechanism?**

6   **A. Retail jurisdictional costs for the Company's Phase I, Phase II, Phase III,**  
7           **Phase IV, Phase V, and proposed Phase VI Programs, including allocated**  
8           **Common Costs, shall be assigned or allocated to North Carolina retail**  
9           **customer classes based on the particular classes at which each program is**  
10          **targeted according to Paragraph 33 of the Mechanism. The cost of**  
11          **residential Programs is assigned to the residential class as shown in my**  
12          **Schedule 2, Page 1. The costs of non-residential Programs are allocated to**  
13          **targeted non-residential customer classes using an energy-based allocation**  
14          **factor as shown in my Schedule 2, Page 1.**

15          My Schedule 2, Page 2 provides the development of the coincident peak and  
16          energy allocation factors for the non-residential Programs. I have developed  
17          class allocation factors for the non-residential programs for both the true-up  
18          through the EMF and the projected Rate Period consistent with the time  
19          periods used to allocate costs from the system to the jurisdiction. For the  
20          updated EMF, the allocation factors for determining customer class  
21          responsibility for jurisdictional costs are based on the 12 months ended  
22          December 31, 2016, and are shown on Schedule 2, Page 2. I have developed  
23          class allocation factors for these same programs. For the projected Rate

1 Period, the allocation factors for determining customer class responsibility for  
2 jurisdictional costs are also based on the 12 months ended December 31,  
3 2016, and are shown on Schedule 2, Page 2.

4 **Q. How will the EMF and Rate Period revenue requirements be assigned or**  
5 **allocated for the residential Programs to the customer classes?**

6 A. The total amount to be recovered through the DSM/EE EMF Rider CE for the  
7 residential Programs will be assigned to the residential class. The total  
8 revenue requirement for DSM/EE Programs Rider C for the residential  
9 Programs will also be assigned to the residential class for cost recovery  
10 purposes. Please refer to my Schedule 2, Page 1 for further explanation of this  
11 assignment.

12 **Q. How will the EMF and Rate Period revenue requirements be assigned or**  
13 **allocated for the non-residential Programs to the customer classes?**

14 A. The total amount to be recovered through the DSM/EE EMF Rider CE for the  
15 non-residential Programs will be allocated to the non-residential customer  
16 classes eligible to participate in such Programs. The total revenue  
17 requirement for DSM/EE Programs Rider C for the non-residential Programs  
18 will also be allocated to the non-residential customer classes eligible to  
19 participate in such Programs.

20 Regarding the development of allocation factors, these Programs are not  
21 limited to commercial customers as other non-residential customers, including  
22 industrial customers, are eligible to participate. The allocation factors used to

1 allocate these revenue requirements will be adjusted for customers who elect  
2 to opt out as provided for under N.C.G.S. § 62-133.9(f). In addition, no costs  
3 will be allocated to the Street and Outdoor Lighting class or the Traffic  
4 Lighting class since such classes will not be targeted by these Programs.

5 Neither class will experience a reduction in energy consumption or demand  
6 resulting from these Programs and will, therefore, not experience a benefit due  
7 to a change in their production demand allocation factor if all other things  
8 remain the same. Other non-residential customer classes that do participate in  
9 the Programs will experience reductions in energy consumption and/or  
10 demand and may receive a benefit due to a change in their production demand  
11 allocation factor. It is appropriate to not allocate any costs to customer classes  
12 that will not benefit from participation in a program or programs.

13 Page 1 of my Schedule 2 summarizes the factor used to allocate the costs of  
14 the DSM/EE commercial Programs to the customer classes.

15 **Q. Do you have a schedule which shows the allocation to the customer classes**  
16 **of the amounts to be recovered through the DSM/EE EMF Rider CE and**  
17 **DSM/EE Programs Rider C?**

18 **A.** Yes. My Schedule 3, Pages 1 and 2 provide the allocation to the customer  
19 classes of the amount that needs to be collected for the Test Period true-up  
20 through the DSM/EE EMF Rider CE. My Schedule 3, Pages 3 and 4 provide  
21 the allocation of the revenue requirement to the customer classes for the  
22 projected Rate Period for recovery through DSM/EE Programs Rider C.

1 These total revenue requirements are obtained from Company Witness  
2 Moore's Schedule 1 for Rider CE and Rider C, respectively.

3 **Q. To summarize, what is the total revenue requirement for DSM/EE**  
4 **Programs by customer class for recovery under the proposed DSM/EE**  
5 **EMF Rider CE and DSM/EE Rider C?**

6 A. My Schedule 3, Page 2, line 9 provides the amount to be recovered by each  
7 customer class under the proposed DSM/EE EMF Rider CE. My Schedule 3,  
8 Page 4, line 2 provides the total revenue requirement by customer class under  
9 the proposed DSM/EE Rider C.

10 **Q. Please outline what is included in Schedule 4 of your testimony.**

11 A. In accordance with NCUC Rule R8-69(f)(1)(ii)(b), the total cost that the  
12 utility does not expect to incur during the Rate Period as a direct result of the  
13 DSM/EE measures in the aggregate to the North Carolina jurisdiction are  
14 shown on Page 1 of my Schedule 4. Expenses not expected to be incurred are  
15 provided by Company Witness Deanna R. Kesler. In this Schedule, I provide  
16 the North Carolina jurisdictional allocation factors that were produced in the  
17 Company's most recent 2016 cost of service study, as filed on May 30, 2017,  
18 in Docket No. E-22, Sub 532 that would be used to allocate these costs had  
19 they been incurred. As can be seen on Schedule 4, Page 1 of my testimony,  
20 separate demand and energy weighted factors should be used to allocate the  
21 demand-related expenses not expected to be incurred and the energy-related  
22 expenses not expected to be incurred, respectively. These factors are Factor 1  
23 (demand-weighted) and Factor 3 (energy-weighted).

1       Also included in Schedule 4 are Pages 2 through 4, which are work papers  
2       filed in accordance with NCUC Rule R8-69(f)(1)(viii). These pages show the  
3       development of allocation factors used to allocate system expenses not  
4       expected to be incurred during the Rate Period (Pages 3 and 4).

5   **Q.   Does this conclude your direct testimony?**

6   **A.   Yes, it does.**

**BACKGROUND AND QUALIFICATIONS  
OF  
MELBA L. LYONS**

Melba L. Lyons graduated from Saint Paul's College in 1985 with a B.S. in Business Administration. She later attended Averett University and graduated with a Masters of Business Administration degree in 2007. She joined Virginia Electric and Power Company in 1985 in the Power Station Accounting Department as an accountant. Ms. Lyons served 22 years in the accounting profession in field and corporate positions.

In 2007, Ms. Lyons transferred to the Rate Department (which is now Customer Rates) as a Regulatory Analyst. In this position, she has performed research to determine the Company's peer group of utilities and COS Study work. From 2009 through 2014, she provided support for peer group-related issues in the Company's biennial review cases and in other regulatory proceedings. In 2010, Melba was selected for a position on the COS team. Her responsibilities include performing calculations for alternative COS methodologies and new allocation factors, rewriting and updating factor calculation methodologies and maintaining the COS Model and serving as a rates witness for the Company's Generation Riders and Virginia and North Carolina DSM Programs. In 2017, Melba was promoted to Regulatory Advisor.

Ms. Lyons has presented testimony before the North Carolina Utilities Commission.

1           Company Exhibit DAS-1, Schedules 1 - 18

2                   (Identified and Admitted)

3                           (WHEREUPON, the prefiled corrected  
4                           direct testimony and Appendix A of  
5                           DEBRA A. STEPHENS is copied into  
6                           the record as if given orally from  
7                           the stand.)

**DIRECT TESTIMONY  
OF  
DEBRA A. STEPHENS  
ON BEHALF OF  
DOMINION ENERGY NORTH CAROLINA  
BEFORE THE  
NORTH CAROLINA UTILITIES COMMISSION  
DOCKET NO. E-22, SUB 545**

1   **Q.**    Please state your name, business address, and your position with Virginia  
2           Electric and Power Company ("Dominion Energy North Carolina" or the  
3           "Company").

4   **A.**    My name is Debra A. Stephens, and I am a Regulatory Advisor for Dominion  
5           Energy North Carolina. My business address is 701 East Cary Street,  
6           Richmond, Virginia 23219.

7   **Q.**    Please describe your area of responsibility with the Company.

8   **A.**    I provide support and analysis for base rate schedules and Demand Side  
9           Planning Riders for the Company's retail jurisdictions. A statement of my  
10          background and qualifications is attached as Appendix A.

11   **Q.**    What is the purpose of your testimony in this case?

12   **A.**    My testimony supports the Company's request to recover all reasonable and  
13          prudent costs incurred in adopting and implementing the Company's portfolio  
14          of North Carolina demand-side management ("DSM") and energy efficiency  
15          ("EE") Programs ("DSM/EE programs" or "Programs"), and utility  
16          incentives, through its updated Rider C, as well as the Company's experience  
17          modification factor ("EMF") rider, Rider CE ("Application"). The purpose of  
18          my testimony is to present the calculation of the updated DSM/EE Rider,



1 Rider C, and the EMF rider, Rider CE. Rider C is designed to recover the  
2 Company's reasonable and prudent costs incurred for the adoption and  
3 implementation of the Company's DSM/EE Programs during the rate period,  
4 January 1, 2018, through December 31, 2018 ("Rate Period"). Rider CE will  
5 true up any over- or under-recovery for the period January 1, 2016, through  
6 December 31, 2016. ("Test Period"). The Company is requesting the  
7 proposed riders, Rider C and Rider CE, become effective for usage on and  
8 after January 1, 2018. Additionally, I provide the calculations for the monthly  
9 residential and non-residential non-fuel average base rates that have been used  
10 by Company Witness Alan J. Moore in determining gross lost revenues.

11 **Q. Ms. Stephens, are you sponsoring any exhibits or schedules in connection**  
12 **with your testimony?**

13 A. Yes. Company Exhibit No. DAS-1, consisting of Schedules 1 through 18,  
14 was prepared under my supervision and is accurate and complete to the best of  
15 my knowledge and belief. I also provide my supporting workpaper as  
16 required by Commission Rule R8-69(f)(i)(viii).

17 **Q. Would you please discuss the calculation of the Rider C?**

18 A. Yes. The Company has calculated the Rider C rates in accordance with the  
19 following methodology. To develop the Rider C rate applicable to each of the  
20 Company's customer classes, we must first determine forecasted kWh sales  
21 for each customer class. For the North Carolina jurisdiction, the Company  
22 only forecasts kWh sales and customers by "revenue class" (*i.e.*, Residential,  
23 Commercial, Industrial, Public Authority, and Outdoor Street Lighting/Traffic

1 Signals), and this revenue class kWh sales forecast is shown on pages 1  
2 through 3 of Schedule 1, as required by Rule R8-69(f)(1)(i). However, these  
3 revenue classes are not perfectly aligned with the Company's customer  
4 classes. Therefore, the Company must allocate the revenue classes' January  
5 2018, through December 2018 forecasted kWh sales down to the customer  
6 class level. This allocation was performed using 2014 through 2016 historical  
7 monthly customer and kWh usage for each customer class to capture the  
8 recent trends of kWh sales and the numbers of customers within each  
9 customer class. This allocation by revenue class (and within revenue class by  
10 rate schedule) is shown on pages 4 and 5 of my Schedule 1. The summary on  
11 page 6 shows the allocation of the 12 months ended December 31, 2018,  
12 forecasted kWh sales for each rate schedule, less the kWh sales for the  
13 industrial and large commercial customers who have "opted out" under North  
14 Carolina General Statute § 62-133.9(f), to produce a net forecast. Pages 7 and  
15 8 categorize the net forecasted rate schedule kWh sales into the seven  
16 customer classes (*i.e.*, Residential, SGS, NS, LGS, 6VP, Outdoor/Street  
17 Lighting, and Traffic Lighting customer classes).

18 The rates for Rider C have been derived based upon these net forecasted kWh  
19 sales by customer class. Pages 9 and 10 of Schedule 1 detail the development  
20 of the Rider C rate.

21 Page 9 of Schedule 1 shows the customer class allocated revenue  
22 requirements associated with DSM/EE program costs that were provided by  
23 Company Witness Melba L. Lyons. By dividing these class revenue

1 requirements by their respective customer class forecasted kWh sales, we  
2 have calculated customer class rates, which are then adjusted for North  
3 Carolina Regulatory Fee. Page 10 shows the rate schedules within their  
4 associated customer class and provides their respective Rider C rate.

5 **Q. Have you provided projected North Carolina total retail monthly sales**  
6 **for the Rate Period for the commercial and industrial customers who**  
7 **have chosen to opt out of the DSM/EE Rider, as required by R8-**  
8 **69(f)(1)(vii)?**

9 A. Since the Company generally does not forecast kWh sales for individual  
10 customers, we have used actual kWh sales, from January 1, 2016, to  
11 December 31, 2016, as a proxy for the projected opt-out kWh sales for the  
12 Rate Period for customers that have opted out as of June 30, 2017. Schedule 2  
13 of my pre-filed direct testimony contains the aggregated opt-out customer  
14 sales by month.

15 **Q. Have you included the Company's proposed Rider C in Schedule 3 of**  
16 **your pre-filed direct testimony?**

17 A. Yes. Schedule 3 is comprised of the tariff sheet showing the proposed Rider  
18 C as required by R8-69(f)(1)(vi), which, if approved as proposed, would be  
19 applicable for usage on and after January 1, 2018.

20 **Q. Would you please discuss the calculation of the Rider CE?**

21 A. Yes. The Company has calculated the Rider CE rates in accordance with the  
22 same methodology as previously approved for calculating Rider C. The

1 allocated class Rider CE revenue requirements used in these calculations are  
2 provided in Company Witness Lyons' Schedule 3. The forecasted kWh by  
3 class and rate schedule for use in developing the Rider CE rates are the same  
4 as described in the calculation of the Rider C rates. The results of these  
5 calculations are shown in my Schedule 4. The corresponding tariff sheet  
6 providing the Rider CE rates is shown in my Schedule 5.

7 **Q. Would you explain how the proposed Riders C and CE will impact**  
8 **customers' bills?**

9 **A.** For this comparison, the Company has used the base and fuel rates that went  
10 into effect January 1, 2017, Docket No. E-22 Sub 532, and the Company's  
11 fuel case, Docket No. E-22, Sub 534, to calculate the customers' "current  
12 bill." For Rate Schedule 1 (residential), based on the proposed January 1,  
13 2018 effective date for Riders C and CE, for a customer using 1,000 kWh per  
14 month, the weighted monthly residential bill (4 summer months and 8 base  
15 months) would increase from \$105.53 to \$106.11, or by 0.55%. For Rate  
16 Schedule 5 (small general service), based on the proposed January 1, 2018  
17 effective date for Riders C and CE, for a customer using 12,500 kWh per  
18 month and 50 kW of demand, the weighted monthly bill (4 summer months  
19 and 8 base months) would increase from \$1,015.02 to \$1,026.78, or by 1.16%.  
20 For Rate Schedule 6P (large general service), based on the proposed January  
21 1, 2018 Riders C and CE, for a customer using 259,200 kWh on-peak and  
22 316,800 kWh off-peak per month and 1,000 kW of demand, the monthly bill  
23 would increase from \$35,067.07 to \$35,435.71, or by 1.05%.

1   **Q.   For purposes of truing up lost revenues for the Test Period, would you**  
2       **describe how the non-fuel average base rates were determined?**

3   **A.   Yes. We have calculated monthly non-fuel average base rates for the Test**  
4       **Period for each DSM Program. These monthly non-fuel average base rates**  
5       **are provided to Company Witness Moore, who in turn applies these rates to**  
6       **the measured and verified kWh reductions that occurred during the Test**  
7       **Period, as determined and provided by Company Witness Deanna R. Kesler.**

8       **In truing up gross lost revenues for the Residential Low Income Program, the**  
9       **Residential Heat Pump Tune Up Program, the Residential Heat Pump**  
10      **Upgrade Program, the Residential Duct Testing & Sealing Program, the**  
11      **Residential Home Energy Check-Up Program, and the Residential Income and**  
12      **Age Qualifying Program, we used the actual participants' non-fuel base**  
13      **revenues and their kilowatt-hour consumption for the period of January 1,**  
14      **2016, to December 31, 2016, to develop monthly average non-fuel base rates.**  
15      **These calculations are shown in Schedules 6 through 11 of my testimony. To**  
16      **calculate the average rates for the Residential Lighting program, we used the**  
17      **average non-fuel base rates for all customers on Rate Schedules 1, 1P, and 1T**  
18      **and the kilowatt-hour consumption for the period of January 1, 2016, to**  
19      **December 31, 2016, shown in Schedule 12.**

20   **Q.   Did you use the same methodology for the Non-Residential Programs in**  
21      **truing up lost revenues for the Test Period?**

22   **A.   Yes. We used the actual participants' non-fuel base revenues and their**  
23      **kilowatt-hour consumption for the applicable true-up period to develop**

1 monthly average non-fuel base rates. This analysis used the kWh  
2 consumption for those customers who participated in the Commercial  
3 Lighting Program, the Commercial HVAC Program, the Non-Residential  
4 Energy Audit, the Non-Residential Duct Testing & Sealing Program, the Non-  
5 Residential Heating & Cooling Efficiency Program, and the Non-Residential  
6 Lighting Systems & Controls Program shown in Schedules 13 through 18  
7 during the period of January 1, 2016, to December 31, 2016. No rates were  
8 calculated for the Non-Residential Window Film Program since there were no  
9 North Carolina participants in the program during 2016.

10 **Q. Does this conclude your prefiled direct testimony?**

11 **A. Yes, it does.**

**BACKGROUND AND QUALIFICATIONS  
OF  
DEBRA A. STEPHENS**

Debra A. Stephens graduated from the Virginia Polytechnic Institute & State University in 1978 with a B.S. in Marketing. She continued her education, completing a Masters in Business Administration from Virginia Polytechnic Institute & State University in 1979. In 1985, after spending five years as a Research Analyst for the Virginia Department of Planning & Budget, Ms. Stephens joined Virginia Electric and Power Company as a Statistical Analyst in the Insurance & Loss Prevention Department. In that capacity, she conducted statistical analyses related to insurance and claims, and participated in a Company-wide assessment of Corporate Risk.

In 1995, Ms. Stephens moved to the Energy Efficiency Department and became part of the Market Research Group. In that position, she worked primarily analyzing non-residential customer data to create a segmentation strategy for these customers. In January 2001, Ms. Stephens joined the Regulatory & Pricing Department as analyst supporting interval customer data. This function was moved to the Metering Department in 2002, along with the supporting staff.

Ms. Stephens returned to the State Regulation Group in 2007 as a Regulatory Analyst III. In 2015, Ms. Stephens was promoted to her current position as a Regulatory Advisor. Her responsibilities include providing support and analysis for the Company's regulatory filings in Virginia and North Carolina. Ms. Stephens has previously presented testimony before the State Corporation Commission of Virginia and the North Carolina Utilities Commission.

1 MR. BREITSCHWERDT: Thank you, Presiding  
2 Commissioner. That concludes the Company's case.

3 COMMISSIONER BROWN-BLAND: Thank you. One  
4 other party.

5 MS. FENNELL: The Public Staff would ask  
6 that the prefiled testimony of Jack Floyd consisting  
7 of 13 pages and his Appendix A, and the prefiled  
8 affidavit of Michael Maness consisting of 12 pages  
9 plus his Appendix A and an Exhibit 1 be admitted into  
10 the record as evidence.

11 COMMISSIONER BROWN-BLAND: That Motion will  
12 be allowed, without objection, and the affidavit --  
13 prefiled affidavit of Witness Maness and the direct  
14 testimony of Witness Floyd will be received into  
15 evidence as if given orally from the witness stand.  
16 And the exhibit from Mr. Maness' affidavit will be  
17 received into evidence.

18 (WHEREUPON, the prefiled direct  
19 testimony and Appendix A of JACK  
20 L. FLOYD is copied into the record  
21 as if given orally from the  
22 stand.)  
23  
24



**DOMINION ENERGY NORTH CAROLINA  
DOCKET NO. E-22, SUB 545**

**TESTIMONY OF JACK L. FLOYD  
ON BEHALF OF THE PUBLIC STAFF  
NORTH CAROLINA UTILITIES COMMISSION**

**October 23, 2017**

1    **Q.    PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND**  
2       **PRESENT POSITION.**

3    **A.    My name is Jack Floyd. My business address is 430 North Salisbury**  
4       **Street, Dobbs Building, Raleigh, North Carolina. I am a Utilities**  
5       **Engineer with the Electric Division of the Public Staff, North Carolina**  
6       **Utilities Commission.**

7    **Q.    BRIEFLY STATE YOUR QUALIFICATIONS AND DUTIES.**

8    **A.    My qualifications and duties are included in Appendix A.**

9    **Q.    WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

10   **A.    The purpose of my testimony is to offer recommendations**  
11       **concerning: (1) the portfolio of DSM and EE programs for which**  
12       **Virginia Electric and Power Company, d/b/a Dominion Energy North**  
13       **Carolina (DENC or Company) is seeking cost recovery through the**  
14       **DSM/EE rider; (2) the cost effectiveness of each DSM and EE**  
15       **program; and (3) evaluation, measurement, and verification (EM&V)**  
16       **support data for the approved DSM and EE programs. I also**

1 assisted Public Staff witness Maness with his review of the rider  
2 calculations and inputs.

3 **Q. WHAT STATUTES, COMMISSION RULES, OR ORDERS HAVE**  
4 **YOU REVIEWED IN YOUR INVESTIGATION OF DENC'S**  
5 **PROPOSED DSM/EE RIDER?**

6 A. In preparing my testimony I reviewed the application, testimony, and  
7 exhibits for approval of cost recovery for demand-side management  
8 (DSM) and energy efficiency (EE) measures filed by DENC pursuant  
9 to G.S. 62-133.9 and Commission Rule R8-69 on August 15, 2017,  
10 the DSM/EE cost recovery mechanism approved by the Commission  
11 on May 27, 2015 (2015 Mechanism), the DSM/EE cost recovery  
12 mechanism approved by the Commission on May 22, 2017 (2017  
13 Mechanism), and responses to Public Staff data requests. I also  
14 reviewed the 2017 EM&V Report<sup>1</sup> and previous Commission orders  
15 related to the Company's DSM and EE programs and cost recovery  
16 rider proceedings. I also assisted Public Staff witness Michael  
17 Maness with his review of the rider calculations and inputs underlying  
18 the riders proposed by DENC in this proceeding.

<sup>1</sup> "Evaluation, Measurement, and Verification Report for Virginia Electric and Power Company (Dominion)," dated May 1, 2017, filed in Docket No. E-22, Sub 536. The report provides the participation and program savings related to participation in the DSM/EE programs for Dominion Energy Virginia (DEV) and DENC through December 31, 2016. DEV and DENC are both business operating names of Virginia Electric and Power Company (VEPCO).

1 Q. PLEASE IDENTIFY THE DSM AND EE PROGRAMS FOR WHICH  
2 DENC IS SEEKING COST RECOVERY THROUGH THE DSM/EE  
3 RIDER IN THIS PROCEEDING.

4 A. The Company is seeking recovery of costs and/or utility incentives  
5 incurred for the following DSM and EE programs:

- 6 • Residential Air Conditioner (AC) Cycling Program (Sub 465)
- 7 • Residential Low Income Program (Sub 463)<sup>2</sup>
- 8 • Residential Lighting Program (Sub 468)
- 9 • Residential Home Energy Check Up Program (Sub 498)
- 10 • Residential Duct Testing Program (Sub 497)
- 11 • Residential Heat Pump Tune-Up Program (Sub 499)
- 12 • Residential Heat Pump Upgrade Program (Sub 500)
- 13 • Residential Income and Age Qualifying Home Improvement
- 14 Program (Sub 523)
- 15 • Commercial Lighting Program (Sub 469)
- 16 • Commercial HVAC Upgrade Program (Sub 467)
- 17 • Non-Residential Energy Audit Program (Sub 495)
- 18 • Non-Residential Duct Testing and Sealing Program (Sub 496)
- 19 • Non-Residential Heating and Cooling Efficiency Program (Sub
- 20 507)
- 21 • Non-Residential Lighting Systems and Controls Program (Sub
- 22 508)
- 23 • Non-Residential Window Film Program (Sub 509)
- 24 • Small Business Improvement Program (Sub 538)
- 25 • Residential LED Lighting Program (Sub 539)

<sup>2</sup> The Residential Low Income Program was replaced by the Residential Income and Age Qualifying Program (Sub 523) beginning in January 2016.

1 • Non-Residential Prescriptive Program (Sub 543)<sup>3</sup>

2 The Residential Low Income, Residential Lighting, Commercial  
3 HVAC, and Commercial Lighting programs have been closed for  
4 some time. They are nonetheless appropriately included in the  
5 proposed Rider CE. More specifically, DENC has included program  
6 costs<sup>4</sup>, net lost revenues, and PPI for the Residential Low Income,  
7 Commercial HVAC, and Commercial Lighting programs.  
8 Commission orders<sup>5</sup> related to the North Carolina-only versions of  
9 these programs, allow DENC to seek recovery of program costs, net  
10 lost revenues, and PPI. The Residential Lighting Program was  
11 allowed to conclude as initially designed. However, for the purposes  
12 of this proceeding PPI for measures installed under the Residential  
13 Lighting Program continue to be included in the 2018 DSM/EE rider.

14 **Q. HAVE THERE BEEN ANY PROGRAMS IN THE DENC**  
15 **PORTFOLIO THAT HAVE DISCONTINUED OPERATION IN ITS**  
16 **NORTH CAROLINA SERVICE TERRITORY SINCE THE LAST**  
17 **RIDER FILING?**

<sup>3</sup> DENC has included revenue requirement for this Program in its proposed Rider C. This program was approved as a new EE program by Commission order issued on October 16, 2017, in docket E-22, Sub 543.

<sup>4</sup> This includes operational expenses for the Residential Low Income, and EM&V costs for all three programs offered on a North Carolina-only basis, as described in Company Exhibit CAG-1, Schedule 2, page 3 of 8.

<sup>5</sup> Orders issued September 9, 2014, in Sub 463, and December 16, 2013, in Subs 467 and 469.

1 A. Yes. On November 29, 2016, the Commission approved the  
2 Company's request to close the Commercial (Non-Residential)  
3 Energy Audit, Commercial (Non-Residential) Duct Testing and  
4 Sealing, Residential Home Energy Check-Up, Residential Heat  
5 Pump Tune-Up, and the Residential Duct Testing programs, and to  
6 suspend the Residential Heat Pump Upgrade, effective February 7,  
7 2017. Program costs, net lost revenues, and PPI associated with  
8 measures already installed through February 7, 2017, or pending  
9 applications remaining through March 31, 2017, are also eligible for  
10 cost recovery pursuant to the 2015 and 2017 Mechanisms.

11 The Commission subsequently granted the Company's request to  
12 close the Residential Heat Pump Upgrade program effective  
13 September 5, 2017. The Public Staff worked with the Company to  
14 see if a North Carolina-only version of this program could be offered.  
15 However, it was determined that a cost-effective North Carolina-only  
16 version was not possible. Costs related to these programs are  
17 appropriately included in Rider C and CE for measures installed prior  
18 to their closure or suspension.

19 I also note that the Company filed a request October 2, 2017 to  
20 suspend its Residential Income and Age Qualifying Program. I have  
21 reviewed data provided by the Company that indicates this program  
22 is significantly cost-ineffective and that a North Carolina-only version

1 of this program cannot be cost-effectively offered. The Public Staff  
2 intends to present this matter to the Commission at a future Staff  
3 Conference. However, costs related to this program are also  
4 appropriately included in both for Riders C and CE.

5 **Q. HAS THE COMPANY WORKED WITH THE PUBLIC STAFF TO**  
6 **EVALUATE THE POSSIBILITY OF OFFERING DSM AND EE**  
7 **PROGRAMS ON A NORTH CAROLINA-ONLY BASIS WHEN IT**  
8 **PLANS TO CANCEL THEM IN VIRGINIA?**

9 **A. Yes.**

10 **Q. HAS THE COMPANY PROPOSED ANY NEW DSM AND EE**  
11 **PROGRAMS?**

12 **A.** The Company filed an application on July 28, 2017, for approval of  
13 its new Non-Residential Prescriptive Program as a new EE program.  
14 The program was approved by the Commission on October 16, 2017,  
15 in docket E-22, Sub 543 and is therefore eligible for cost recovery.

16 **Q. PLEASE DISCUSS THE COST EFFECTIVENESS OF THE**  
17 **PORTFOLIO OF PROGRAMS.**

18 **A.** The testimony and exhibits of DENC witness Deanna Kesler present  
19 the Company's analysis of cost effectiveness for each program.  
20 Company Exhibit DRK-1, Schedule 2, represents the programs

1 eligible for PPI in the vintage 2018 rider, and includes the Company's  
2 calculations of the Utility Cost Test (UCT) and the Total Resource  
3 Cost (TRC) Test. This data provides a snapshot of program  
4 performance that is expected over the rate period. The data also  
5 provides a good comparison of the changes in cost effectiveness  
6 from year to year. Schedule 2 also provides the UCT benefits, which  
7 are used in the determination of the PPI component of rider rates.

8 With the exception of the Income and Age Qualifying Home  
9 Improvement Program and the Small Business Improvement  
10 Program, each program included in Schedule 2 is estimated to be  
11 cost effective in 2018 under the TRC test. With the exception of the  
12 Residential AC Cycling, Income and Age Qualifying Home  
13 Improvement, and Small Business Improvement programs, each  
14 program is also estimated to be cost effective in 2018 under the UCT.

15 Witness Kesler's Company Exhibit DRK-1, Schedule 4, represents  
16 the ongoing cost effectiveness of DSM and EE programs that have  
17 been implemented for at least 12 months as modeled in the  
18 Integrated Resource Plan (IRP) over the remaining life of each  
19 program.<sup>6</sup> This perspective provides the basis for which programs

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<sup>6</sup> Pursuant to paragraph 39 of the 2017 Mechanism.

1 should or should not continue to be approved as a DSM or EE  
2 program eligible for cost recovery pursuant to the 2017 Mechanism.

3 Company Exhibit DRK-1, Schedule 4, indicates that with the  
4 exception of the Income and Age Qualifying Home Improvement  
5 Program, the Company's active programs are projected to be cost  
6 effective under the TRC test. Schedule 4 also indicates that with the  
7 exception of the AC Cycling and the Income and Age Qualifying  
8 Home Improvement programs, the remaining active programs are  
9 projected to be cost effective under the UCT.

10 My review of witness Kesler's calculations of cost effectiveness  
11 indicate that the calculations for Company Exhibit DRK-1, Schedules  
12 2 and 4, have been performed in accordance with the 2017  
13 Mechanism.

14 **Q. HAVE YOU REVIEWED THE 2017 EM&V REPORT FILED BY**  
15 **DENC?**

16 **A.** Yes. The Public Staff contracted the services of GDS Associates,  
17 Inc., to assist it with review of EM&V. With GDS's assistance, I have  
18 reviewed the 2017 EM&V Report. This report evaluated the  
19 participation and savings for each DSM and EE program approved  
20 in both Virginia and North Carolina through December 31, 2016.



1 I also reviewed previous Commission orders to determine if DENC  
2 complied with provisions regarding EM&V contained in those orders.

3 Q. DID DEC AND ITS EM&V CONSULTANT ADOPT YOUR  
4 RECOMMENDATIONS?

5 A. Yes. To the extent these recommendations are applicable to this  
6 proceeding, the 2017 EM&V Report incorporated my  
7 recommendations.

8 Q. DO YOU HAVE ANY NEW RECOMMENDATIONS REGARDING  
9 THE COMPANY'S 2017 EM&V REPORT?

10 A. Yes. Our review of the 2017 EM&V Report concluded that several  
11 of the algorithms used to calculate vintage year savings contained  
12 input data that were either misapplied or input incorrectly in the  
13 calculation itself. Those inputs are related to the temperature  
14 differences related to low flow showerhead, waste heat factors for  
15 non-residential lighting applications, and full load heating hours of  
16 heat pumps. By correcting these inputs, the savings associated with  
17 vintage year 2016 will likely need to be adjusted in the next rider  
18 proceeding. The impacted programs include the Residential Home  
19 Energy Check Up, Non-Residential Energy Audit Program, Non-  
20 Residential Duct Testing and Sealing Program, Non-Residential  
21 Heating and Cooling Efficiency Program, and the Non-Residential

1 Lighting Systems and Controls Program. DENC's third party EM&V  
2 evaluator has acknowledged that corrections need to be made and  
3 they propose to make them in the next EM&V report due to be filed  
4 in the spring of 2018.

5 The Company's practice regarding changes to its EM&V algorithms  
6 has been to recalculate the savings with the corrected data. Any  
7 change in the reported program savings resulting from the  
8 recalculation is then reported with the next vintage year's savings. In  
9 other words, any corrections made to vintage 2016 in this  
10 proceeding, will be added to the savings identified for 2017 and  
11 reported in the EM&V report to be filed in the spring of 2018 as 2017  
12 savings.

13 The Public Staff has not had an issue with this approach and does  
14 not anticipate any issues going forward. However, I believe it would  
15 be appropriate for DENC and its third party EM&V evaluator to  
16 include a separate table or provide a separate determination of the  
17 corrected savings applicable to 2016, from any data applicable solely  
18 to 2017. Therefore, I recommend that future EM&V reports clearly  
19 identify any corrections to previous vintage year savings separate  
20 from the savings associated with the test year that is the subject of  
21 the EM&V report. The evaluator may report the total savings for the  
22 test year in the EM&V report, but it should also separately identify

1 any changes or corrections. This is consistent with  
2 recommendations I made in previous rider proceedings regarding  
3 changes to programs and program inputs, which the Company  
4 adopted and has incorporated in the 2017 EM&V Report as Table 2-  
5 1.

6 With respect to the waste heater factors associated with non-  
7 residential lighting measures, to the extent that DENC can implement  
8 the necessary changes to affected Company and implementation  
9 vendor IT systems in a timely manner and it is not cost-prohibitive, I  
10 recommend that DENC begin collecting data in its participant  
11 application process, to determine the type of heating and cooling  
12 equipment used by the participant. This data would provide a better  
13 foundation for determining the values of waste heat factors in the  
14 algorithms associated with lighting measures. DENC's current  
15 practice does not collect data on the type of heating and cooling  
16 equipment. As a result, the third party evaluator must make  
17 assumptions on the type of heating and cooling equipment used. If  
18 the data cannot be collected due to difficulty in implementing this  
19 change in data collection procedures in a timely manner (i.e. in time  
20 to be included in the next program evaluation cycle), then I  
21 recommend that these changes be incorporated in any future

1 programs or extensions of the Non-Residential Lighting Systems and  
2 Controls Program.

3 Furthermore, if the data cannot be collected due to difficulty in  
4 implementing this change in data collection procedures in time for  
5 the next program evaluation cycle, I recommend that DENC's  
6 evaluator develop default waste heat factor assumptions that  
7 accounts for the mix in HVAC system types in North Carolina among  
8 non-residential customers.

9

10 Q. DOES THE COMPANY AGREE WITH YOUR EM&V  
11 RECOMMENDATIONS?

12 A. Yes. I have discussed these recommendations with DENC and its  
13 third party evaluation, and I believe they do not object to these  
14 recommendations.

15 Q. HAVE YOU CONFIRMED THAT THE COMPANY'S  
16 CALCULATIONS INCORPORATE THE VERIFIED SAVINGS OF  
17 THE 2017 EM&V REPORT?

18 A. Yes. The 2017 EM&V Report provided gross and net savings from  
19 the portfolio of programs for the Virginia and North Carolina  
20 jurisdictions separately. However, the methodologies and

1 assumptions used in the evaluations of the programs were  
2 consistently applied to both jurisdictions.

3 As in previous cost recovery proceedings, the 2017 EM&V Report  
4 provided gross and net savings from the portfolio of programs for the  
5 Virginia and North Carolina jurisdictions separately. However, the  
6 methodologies and assumptions used in the evaluations of the  
7 programs were consistently applied to both jurisdictions. I was able,  
8 through sampling, to confirm that the information in the 2017 EM&V  
9 Report flows into the PPI calculations of both Riders C and CE, and  
10 the net lost revenue calculations included in Rider CE. Based on this  
11 information and my observations, I believe DENC is appropriately  
12 incorporating the results of its EM&V efforts into the DSM/EE rider  
13 calculations.

14 For purposes of this and previous DSM/EE cost recovery  
15 proceedings for DENC, the 2017 EM&V Report data used to true up  
16 program savings and participation for vintage year 2016 and earlier  
17 vintages are sufficient to consider those vintage years to be complete  
18 for all programs operating in those years.

19 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

20 **A. Yes.**

## APPENDIX A

JACK L. FLOYD

I am a graduate of North Carolina State University with a Bachelor of Science Degree in Chemical Engineering. I am licensed in North Carolina as a Professional Engineer. I have more than 17 years of experience in the water and wastewater treatment field, nine of which have been with the Public Staff's Water Division. In addition, I have been with the Electric Division for almost 14 years.

Prior to my employment with the Public Staff, I was employed by the North Carolina Department of Natural Resources, Division of Water Quality as an Environmental Engineer. In that capacity, I performed various tasks associated with environmental regulation of water and wastewater systems, including the drafting of regulations and general statutes.

In my capacity with the Public Staff's Water Division, I investigated the operations of regulated water and sewer utility companies and prepared testimony and reports related to those investigations.

Currently, my duties with the Public Staff include evaluating the operation of regulated electric utilities, including rate design, cost-of-service, and demand side management and energy efficiency resources. My duties also

include assisting in the preparation of reports to the Commission; preparing testimony regarding my investigation activities; reviewing Integrated Resource Plans; and making recommendations to the Commission concerning the level of service for electric utilities.

Maness Exhibit 1

(Identified and Admitted)

(WHEREUPON, the prefiled affidavit  
and Appendix A of MICHAEL C.  
MANESS is copied into the record  
as if given orally from the  
stand.)



STATE OF NORTH CAROLINA  
UTILITIES COMMISSION  
RALEIGH

DOCKET NO. E-22, SUB 545

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of  
Application by Virginia Electric and Power )  
Company, d/b/a Dominion Energy North )  
Carolina, for Approval of Demand Side )  
Management and Energy Efficiency Cost )  
Recovery Rider Pursuant to G.S. 62- )  
133.9 and Commission Rule R8-69 )

AFFIDAVIT OF  
MICHAEL C. MANESS

Oct 23 2017

STATE OF NORTH CAROLINA

COUNTY OF WAKE

I, Michael C. Maness, first being duly sworn, do depose and say:

I am Director of the Accounting Division of the Public Staff. I am responsible for the performance, supervision, and management of the following activities: (1) the examination and analysis of testimony, exhibits, books and records, and other data presented by utilities and other parties under the jurisdiction of the Commission or involved in Commission proceedings; and (2) the preparation and presentation to the Commission of testimony, exhibits, and other documents in those proceedings. I have been employed by the Public Staff since July 12, 1982. A summary of my education and experience is attached to this affidavit as Appendix A.

The purpose of my affidavit is to present my recommendations regarding (1) the prospective Demand-Side Management / Energy Efficiency rider (DSM/EE rider or Rider C) and (2) the DSM/EE Experience Modification Factor

rider (DSM/EE EMF rider or Rider CE) proposed by Virginia Electric and Power Company d/b/a Dominion Energy North Carolina (DENC or the Company) in its Application filed in this docket on August 15, 2017.<sup>1</sup> In addition to my filing of this affidavit, Public Staff witness Jack L. Floyd has filed testimony in this proceeding regarding DENC's DSM/EE portfolio, including certain new program and program closure matters, the cost-effectiveness of each program, and the 2017 Evaluation, Measurement, and Verification (EM&V) Report, which reported on the results of DENC's programs through December 31, 2016.

My affidavit begins with a review of the regulatory framework for DSM/EE cost recovery by electric utilities and the historical background of DENC's Application in this docket. I then discuss the Company's proposed billing rates and other aspects of its filing. Following a summary of my investigation, I present my findings, conclusions, and recommendations regarding approval of the proposed billing rates making up Riders C and CE.

### **Review of the Regulatory Framework**

G.S. 62-133.9(d) allows a utility to petition the Commission for approval of an annual rider to recover (1) the reasonable and prudent costs of new DSM and EE measures and (2) other incentives to the utility (utility incentives) for adopting and implementing new DSM and EE measures. Additionally, G.S. 62-133.9(f) allows industrial and certain large commercial customers to opt out of participating in the power supplier's DSM/EE programs or paying the DSM/EE rider, if each such customer notifies its electric power supplier that it has

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<sup>1</sup> Riders C and CE are each comprised of various class-based billing rates.

implemented or will implement, at its own expense, alternative DSM and EE measures. Commission Rule R8-69, which was adopted by the Commission pursuant to G.S. 62-133.9(h), sets forth the general parameters and procedures governing approval of the annual rider, including (1) provisions for both (a) a DSM/EE rider to recover the estimated costs and utility incentives applicable to the "rate period" in which that DSM/EE rider will be in effect, and (b) a DSM/EE EMF rider to recover the difference between the DSM/EE rider in effect for a given test period (plus a possible extension) and the actual recoverable amounts incurred during that test period; and (2) provisions for interest or return on amounts deferred and on refunds to customers.

In this proceeding, DENC has calculated its proposed DSM/EE and DSM/EE EMF riders (Riders C and CE, incorporating various class-specific billing rates) using two mechanisms previously approved by the Commission. To calculate the Rider CE billing rates related to DSM and EE measures installed or implemented for Vintage Year 2016, DENC has used the Cost Recovery and Incentive Mechanism for Demand-Side Management and Energy Efficiency Programs approved by the Commission in its *Order Approving Revised Cost Recovery and Incentive Mechanism and Granting Waiver*, issued in Docket No. E-22, Sub 464 on May 7, 2015 (2015 Mechanism). The 2015 Mechanism, replacing the initial mechanism approved in 2011, became effective as of the date of the May 7, 2015, Order for projected costs and utility incentives beginning January 1, 2016, and for true-ups of costs and utility incentives

beginning July 1, 2014.<sup>2</sup> However, it also contained a provision stating that beginning with 2017, DENC would switch the calculation of the bonus incentive approved for inclusion in its DSM/EE and DSM/EE EMF riders from a Program Performance Incentive (PPI<sub>1</sub>) to a Portfolio Performance Incentive (PPI<sub>2</sub>), as further explained below.

To calculate the Rider C billing rates related to DSM and EE measures projected to be installed or implemented for Vintage Year 2018, DENC has used the Cost Recovery and Incentive Mechanism for Demand-Side Management and Energy Efficiency Programs approved by the Commission in its *Order Approving Revised Cost Recovery and Incentive Mechanism*, issued in Docket No. E-22, Sub 464 on May 22, 2017 (2017 Mechanism). The 2017 Mechanism became effective as of May 22, 2017, for projected costs and utility incentives beginning January 1, 2018, and for true-ups of costs and utility incentives beginning January 1, 2017. In the following paragraphs, I will summarize certain essential characteristics of each Mechanism.

Both the 2015 and 2017 Mechanisms include many provisions that indirectly influence the ratemaking process for DSM and EE costs and utility incentives, including provisions that address program approval, various procedural matters, revisions to the test periods, reporting requirements, and future review of the Mechanism itself. Additionally, the provisions of the 2015 Mechanism that most directly address the determination of the annual DSM/EE and DSM/EE EMF riders include the following:

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<sup>2</sup> For the levelization run-out of the true-up PPI<sub>1</sub> for measures installed or implemented prior to July 1, 2014, the Company carried forward the bonus incentives as calculated pursuant to the 2011 mechanism.

- (1) Special jurisdictional allocation procedures will be evaluated for programs that operate in only either the Virginia or North Carolina retail jurisdictions, or that are limited in their operation in either jurisdiction.
- (2) In general, DENC shall be allowed to recover, through the DSM/EE and the DSM/EE EMF riders, all reasonable and prudent costs of Commission-approved DSM/EE programs. However, any of the Stipulating Parties may propose a procedure for the deferral and amortization of all or a portion of DENC's non-capital program costs to the extent those costs are intended to produce future benefits. For program costs not deferred for amortization in future DSM/EE riders, the accrual of a return on any under-recoveries or over-recoveries of cost will follow the requirements of Commission Rule R8-69(b), subparagraphs (3) and (6), unless the Commission determines otherwise.
- (3) DENC shall be allowed to recover net lost revenues (NLR) as a utility incentive (with the exception of those amounts related to research and development or the promotion of general awareness and education of EE and DSM activities), but shall be limited for each measurement unit installed in a given vintage year to those dollar amounts resulting from kilowatt-hour (kWh) sales reductions experienced during the first 36 months after the installation of the measurement unit. NLR related to pilot programs are subject to additional qualifying criteria. Recoverable NLR shall ultimately be based on kWh sales reductions and kilowatt (kW) savings verified through the evaluation, measurement, and verification (EM&V) process and approved by the Commission. The eligibility of kWh sales reductions to generate recoverable NLR during the applicable 36-month period will cease upon the implementation of a Commission-approved alternative recovery mechanism that accounts for the otherwise eligible NLR, or new rates approved by the Commission in a general rate case or comparable proceeding that account for the NLR.
- (4) NLR will be reduced by net found revenues, as defined in the 2015 Mechanism, that occur in the same 36-month period. Net found revenues will be determined according to the "Decision Tree" process included in the 2015 Mechanism.
- (5) For vintage years 2014, 2015, and 2016, subject to certain exceptions, DENC shall be allowed to collect a bonus utility incentive, the Program Performance Incentive (PPI), for each DSM or EE program approved and in effect during a given vintage year, so long as the program is cost effective under the Total Resource Cost (TRC) Test and Utility Cost Test (UCT) for that vintage year, as ultimately verified through EM&V analysis. The PPI is based on the net savings of each program or measure as calculated using the UCT, and is equal to 8% of the present value of net savings for DSM programs and measures and 13% of the present value of

net savings for EE programs and measures. The PPI shall be converted into a stream of no more than 10 levelized annual payments. In determining the initial estimate of the PPI to be included in the DSM/EE rider, DENC may utilize a reasonable and appropriate estimation accomplished by a simpler and conservative method.

The 2017 Mechanism leaves many of these provisions in place. However, as noted previously, the 2017 Mechanism replaces the PPI<sub>1</sub> with the PPI<sub>2</sub>, which is defined as follows:

*Portfolio Performance Incentive ... means a payment to [DENC] as a bonus or reward for adopting and implementing new EE or DSM Programs. Upon Implementation, the [Portfolio Performance Incentive] shall be based on the sharing of avoided cost savings, net of Program Costs and allocated Common Costs, achieved by those DSM and EE Programs in the aggregate (subject to certain exclusions). The Portfolio Performance Incentive excludes the impacts and costs from Low Income Programs or Low Income Measures, and Net Lost Revenues for all Programs and measures not otherwise excluded from the [Portfolio Performance Incentive]. (Emphasis added.)*

The 2017 Mechanism also makes significant changes in how the PPI<sub>2</sub> is calculated. Under the 2017 Mechanism, paragraph no. 5 as set forth above can be restated:

- (5) Subject to certain exceptions, DENC shall be allowed to collect a bonus utility incentive, the Portfolio Performance Incentive, for each DSM or EE program approved and in effect during a given vintage year. The Portfolio Performance Incentive is based on the net savings of each program or measure as calculated using the UCT, and is equal to 9.08% of the present value of net savings for DSM programs and measures and 14.76% of the present value of net savings for EE programs and measures. The 9.08% and 14.76% factors shall be subject to review in each annual rider proceeding to ensure the continued reasonableness of the Portfolio Performance Incentive as a whole. The Portfolio Performance Incentive shall be converted into a stream of no more than 10 levelized annual payments. In determining the initial estimate of the Portfolio Performance Incentive to be included in the DSM/EE rider, DENC may utilize a reasonable and appropriate estimation accomplished by a simpler and conservative method. (Emphasis added.)

The 2017 Mechanism also added several provisions regarding the measurement of avoided costs in program approval applications and continuing tests of cost-effectiveness, similar in structure to those added to Duke Energy Carolinas, LLC's mechanism, as amended earlier this year in Docket No. E-7, Sub 1130.

Additionally, the 2017 Mechanism added the following provision regarding the determination of avoided transmission and distribution costs:

The per kW avoided transmission and avoided distribution (avoided T&D) costs used to calculate net savings for a Vintage Year shall be based on a study updated at least every five years, or as appropriate and agreed to by the Company and the Public Staff.

The above are some of the provisions of the two Mechanisms that are most relevant to the determination of the DSM/EE and DSM/EE EMF riders. For more details and additional provisions, please see the Mechanisms themselves.

**The Company's Proposed DSM/EE Revenue  
Requirements and Billing Rates**

The rate period for this proceeding is the twelve-month period from January 1, 2018, through December 31, 2018. This is the period over which the DSM/EE and DSM/EE EMF riders set herein will be charged, and is also the period for which the estimated revenue requirements supporting the DSM/EE rider are determined. The test period applicable to this proceeding (the

presumptive period for which the under- or overrecoveries of DSM/EE costs and NLR are measured) is the twelve months ended December 31, 2016.<sup>3</sup>

In its Application, DENC requested approval of class-specific DSM/EE billing rates (Rider C) based on a North Carolina retail revenue requirement of \$3,542,469 [excluding any revenue adder for the North Carolina Regulatory Fee (NCRF)]. Likewise, the Company requested approval of class-specific decrement DSM/EE EMF billing rates (Rider CE) based on a North Carolina retail true-up revenue requirement increment of \$202,430, excluding the NCRF. These revenue requirements are made up of the following components, as set forth in the testimony of the DENC witnesses and their accompanying exhibits:

#### **RIDER C**

Program costs (including common costs)	\$3,228,866
PPI	<u>313,603</u>
Total Rider C revenue requirement	<u>\$3,542,469</u>

#### **RIDER CE**

Program costs (including common costs)	\$ 2,694,181
NLR	500,942
PPI	270,150
Test period Rider C revenues	<u>( 3,222,514)</u>
Net revenue requirement before carrying costs and interest	242,759
Carrying costs	( 15,776)
Interest on EMF refund	<u>( 24,552)</u>
Total Rider CE revenue requirement	<u>\$ 202,431<sup>3 4</sup></u>

<sup>3</sup> DENC has not requested in this proceeding to incorporate in its DSM/EE EMF rider calculations the under- or overrecovery of DSM/EE costs experienced up to 30 days prior to the hearing, as would be permitted by Commission Rule R8-69(b)(2).

<sup>4</sup> Immaterial rounding differences of \$1 on Rider CE from amounts shown in witness Stephens' exhibits are due to internal rounding in Company exhibits.



As in the 2014-2016 proceedings, DENC did not request NLR as part of Rider C. Also, consistent with the 2017 Mechanism, the Company calculated the PPI amount included in Rider C using a simplified approach. As explained in the testimony of Company witness Bates and set forth in his exhibits, the Company calculated the estimated PPI for Vintage Year 2018 by adding (a) the verified levelized amounts related to Vintage Years 2016 and prior that are due to be collected in 2018 to (b) a conservative estimate of the levelized PPI<sub>2</sub> amounts related to Vintage Years 2017 and 2018 (2017 is included because the EM&V process for that year has not yet been completed). The 2017 estimate is based on the amount calculated by the Company in the 2016 proceeding for the 2017 rate year. The 2018 estimate is based on 1.00% (the ratio used in the 2017 proceeding) of the Company's estimates of 2018 DSM/EE operating expenses, with certain programs excluded altogether.

The components of the Company's proposed Rider C and Rider CE revenue requirements were largely calculated by DENC witnesses Bates and Moore, using jurisdictional allocation factors provided by DENC witness Lyons in accordance with the 2015 and 2017 Mechanisms. Witness Lyons indicated in her testimony that she took the jurisdictional revenue requirements and assigned or allocated them to the various North Carolina retail rate classes consistent with the Mechanisms.

In her testimony, DENC witness Stephens indicated that she took the class-specific Rider C and Rider CE revenue requirements developed by witness Lyons and converted them into per-kWh billing rates, using projected rate period

kWh sales for each class, excluding estimated kWh sales related to opted-out customers. The specific billing rates proposed by the Company in its Application are set forth in witness Stephens' exhibits and in Maness Exhibit I, filed with this affidavit.

### **Investigation and Conclusions**

#### *Details of Investigation and Conclusions*

My investigation of DENC's filing in this proceeding focused on determining whether the proposed DSM/EE and DSM/EE EMF billing rates were calculated in accordance with the 2015 and 2017 Mechanisms, and otherwise adhered to sound ratemaking concepts and principles. The procedures I and other members of the Public Staff's Accounting Division acting under my supervision utilized included a review of the Company's filing, relevant prior Commission proceedings and orders, and workpapers and source documentation used by the Company to develop the proposed billing rates. Performing the investigation required the review of responses to written and verbal data requests, as well as discussions with Company personnel. The investigation also included a review of the actual DSM/EE program costs incurred by DENC during the 12-month period ended December 31, 2016. To accomplish this, the Public Staff selects and reviews samples of source documentation for test year costs included by the Company for recovery through the DSM/EE Rider. This process, which is ongoing as of the date of my affidavit, is intended to test whether the actual costs included by the Company in the DSM/EE billing rates are either valid

costs of approved DSM and EE programs or administrative (common) costs supporting those programs.

The Public Staff's investigation, including the sampling of source documentation, concentrated primarily on costs and NLR related to the test period, and verified PPIs related to the 2011-2016 period, all of which are to be included in the DSM/EE EMF billing rates approved in this proceeding. A more general review was conducted of the prospective billing rates proposed to be charged for Vintage Year 2017, which are subject to true-up in future proceedings. Based on my investigation, I am of the opinion that the Company has generally calculated its proposed DSM/EE billing rates (included in Rider C) and DSM/EE EMF billing rates (included in Rider CE) in a manner consistent with G.S. 62-133.9, Commission Rule R8-69, and the 2015 and 2017 Mechanisms. However, this conclusion is subject to the caveat that the Public Staff is still in the process of reviewing certain data responses recently received from the Company, including documentation of costs selected for review in the Public Staff's sample. If this review results in any further issues, the Public Staff will file additional information with the Commission.

*Effects of Public Staff Witness Floyd's Testimony*

Public Staff witness Floyd has filed testimony in this proceeding discussing several topics and issues related to the Company's filing. None of these topics and issues necessitates an adjustment to the Company's billing factor calculations in this proceeding. However, Mr. Floyd has indicated that the review

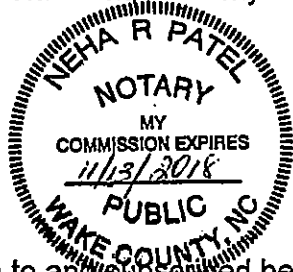
that he and GDS Associates (the Public Staff's EM&V contractor) conducted of the Company's 2017 EM&V Report identified some corrections that need to be made to the EM&V analysis. As explained in more detail by Mr. Floyd, making these corrections will result in a further true-up of Vintage Year 2016 results in next year's rider proceeding.

**Recommendation**

Subject to the caveat noted above regarding completion of certain portions of its review, the Public Staff recommends approval of the Rider C and Rider CE billing rates set forth on Maness Exhibit I. The recommended billing rates should be approved subject to any true-ups in future cost recovery proceedings consistent with the 2015 and 2017 Mechanisms.

The Public Staff notes that reviewing the calculation of the DSM/EE and DSM/EE EMF riders is a process that involves reviewing numerous assumptions, inputs, and calculations, and its recommendation with regard to this proposed rider is not intended to indicate that the Public Staff will not raise questions in future proceedings regarding the same or similar assumptions, inputs, and calculations.

This completes my affidavit.



Michael C. Maness

Sworn to and subscribed before me  
this the 23 day of October, 2017.

Neha Ramanbhai Patel

Notary Public

My Commission Expires: 11/13/2018

## APPENDIX A

## MICHAEL C. MANESS

I am a graduate of the University of North Carolina at Chapel Hill with a Bachelor of Science degree in Business Administration with Accounting. I am a Certified Public Accountant and a member of both the North Carolina Association of Certified Public Accountants and the American Institute of Certified Public Accountants.

Since joining the Public Staff in July 1982, I have filed testimony or affidavits in several general, fuel, and demand-side management/energy efficiency rate cases of the utilities currently organized as Duke Energy Carolinas, LLC, Duke Energy Progress, LLC, and Virginia Electric and Power Company (Dominion North Carolina Power), as well as in several water and sewer general rate cases. I have also filed testimony or affidavits in other proceedings, including applications for certificates of public convenience and necessity for the construction of generating facilities, applications for approval of self-generation deferral rates, and applications for approval of cost and incentive recovery mechanisms for electric utility demand-side management and energy efficiency (DSM/EE) efforts.

I have also been involved in several other matters that have come before this Commission, including the investigation undertaken by the Public Staff into the operations of the Brunswick Nuclear Plant as part of the 1993 Carolina Power

& Light Company fuel rate case (Docket No. E-2, Sub 644), the Public Staff's investigation of Duke Power's relationship with its affiliates (Docket No. E-7, Sub 557), and several applications for business combinations involving electric utilities regulated by this Commission. Additionally, I was responsible for performing an examination of Carolina Power & Light Company's accounting for the cost of Harris Unit 1 in conjunction with the prudence audit performed by the Public Staff and its consultants in 1986 and 1987.

I have had supervisory or management responsibility over the Electric Section of the Accounting Division since 1986, and also was assigned management duties over the Water Section of the Accounting Division during the 2009-2012 time frame. I was promoted to Director of the Accounting Division in late December 2016.

1           COMMISSIONER BROWN-BLAND: Does that take  
2 care of you?

3           MS. FENNELL: Yes, ma'am.

4           COMMISSIONER BROWN-BLAND: Is there anything  
5 else to come before us in this DSM/EE matter?

6           MR. BREITSCHWERDT: No, ma'am.

7           COMMISSIONER BROWN-BLAND: You heard the  
8 request for expedited filings of proposed orders. If  
9 that's not an issue, the same holds true in this case.

10          MR. BREITSCHWERDT: Yes, ma'am.


11          COMMISSIONER BROWN-BLAND: All right. So  
12 that concludes this docket.

13          (WHEREUPON, the proceedings were adjourned.)  
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## C E R T I F I C A T E

I, KIM T. MITCHELL, DO HEREBY CERTIFY that  
the Proceedings in the above-captioned matter were  
taken before me, that I did report in stenographic  
shorthand the Proceedings set forth herein, and the  
foregoing pages are a true and correct transcription  
to the best of my ability.



Kim T. Mitchell  
Court Reporter II

**FILED**

**DEC 13 2017**

Clerk's Office  
N.C. Utilities Commission