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VIA ELECTRONIC FILING

Chief Clerk's Office
North Carolina Utilities Commission
4325 Mail Service Center
Raleigh, North Carolina 27699-4300

**Re: Duke Energy Progress, LLC Rebuttal Testimony
Docket No. E-2, Sub 1204**

Dear Chief Clerk:

Enclosed for filing in the above-referenced docket please find the Rebuttal Testimony of Duke Energy Progress, LLC's witnesses Kelvin Henderson, Barbara A. Coppola and John Halm. We will deliver fifteen (15) paper copies of the filing to the Clerk's Office by close of business on August 29, 2019.

If you have any questions, please do not hesitate to contact me. Thank you for your assistance with this matter.

Sincerely,

A handwritten signature in black ink, appearing to read 'Jack E. Jirak', written in a cursive style.

Jack E. Jirak

Enclosures

cc: Parties of Record

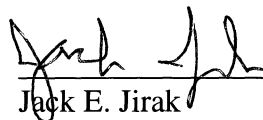
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Aug 28 2019

CERTIFICATE OF SERVICE

I certify that a copy of Duke Energy Progress, LLC's Rebuttal Testimony, in Docket No. E-2, Sub 1204, has been served by electronic mail, hand delivery or by depositing a copy in the United States mail, postage prepaid to parties of record:

This the 28th day of August, 2019.



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BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

DOCKET NO. E-2, SUB 1204

In the Matter of)
)
Application of Duke Energy Progress, LLC)
Pursuant to G.S. 62-133.2 and Commission)
Rule R8-55 Regarding Fuel and Fuel-)
Related Costs Adjustments for Electric)
Utilities)

**REBUTTAL TESTIMONY OF
KELVIN HENDERSON FOR
DUKE ENERGY PROGRESS,
LLC**

1 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

2 A. My name is Kelvin Henderson, and my business address is 526 South Church
3 Street, Charlotte, North Carolina.

4 **Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?**

5 A. I am Senior Vice President of Nuclear Operations for Duke Energy Corporation
6 with direct executive accountability for Duke Energy's North Carolina nuclear
7 stations, including Duke Energy Progress, LLC's ("DEP" or the "Company")
8 Brunswick Nuclear Station ("Brunswick") in Brunswick County, North
9 Carolina, the Harris Nuclear Station ("Harris") in Wake County, North
10 Carolina, and Duke Energy Carolinas, LLC's ("DEC") McGuire Nuclear
11 Station, located in Mecklenburg County, North Carolina.

12 **Q. DID YOU OFFER DIRECT TESTIMONY IN THIS PROCEEDING?**

13 A. Yes, I pre-filed direct testimony in this case. My qualifications, professional
14 experience, and current responsibilities are described in that testimony.

15 **Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?**

16 A. My rebuttal testimony will respond to the testimony of Public Staff witness
17 Dustin R. Metz.

18 **Q. PLEASE SUMMARIZE YOUR TESTIMONY**

19 A. The Company made prudent and reasonable decisions in implementing the
20 complex Robinson Transmission Upgrade Project (the "TUP"), including
21 managing an engineering firm that was ultimately unable to deliver on its
22 contractual obligations. Having effectively mitigated such issue and taken
23 substantial steps to ensure design completion and other detailed preparatory

1 actions, the Company was fully prepared to implement the TUP at the start of
2 the fall 2018 refueling outage. The cause of the 28-day outage extension was a
3 shortage in qualified, electrical workers that was exacerbated by circumstances
4 outside of the Company's control—namely, the impacts of two hurricanes.

5
6 Though Public Staff witness Dustin Metz has not identified any alleged
7 imprudence that caused the outage extension, witness Metz has raised concerns
8 regarding the amount of documentation produced by the Company regarding
9 its management of the TUP over its seven-year design, planning and
10 implementation and identified the fact that this issue also has base rate case
11 implications. The Company has produced a significant amount of information,
12 but to the extent that additional information can be produced that will address
13 the base rate impacts of the TUP, the Company will endeavor to do so in the
14 context of the next base rate case. However, as it relates to this proceeding,
15 questions regarding the Company's management of the TUP are not relevant in
16 light of the clear evidence that labor shortages were the cause of the extended
17 outage.

18
19 Furthermore, whether different management decisions could have resulted in
20 an opportunity to implement the TUP in an earlier refueling outage is an
21 irrelevant exercise in speculation. Instead, the question for this proceeding is
22 whether the Company was reasonably prepared at the start of the fall 2018
23 refueling outage to implement the project and no party to this proceeding has

1 challenged the Company's position that it was, in fact, fully prepared to do so.
2 This issue is ripe for decision and the evidence demonstrates that it was
3 circumstances outside of the Company's control and not any imprudent action
4 or decision that caused the extended outage.

5 **Q. PLEASE PROVIDE AN OVERVIEW OF THE PURPOSE AND**
6 **BENEFIT OF THE TUP.**

7 A. The Robinson Plant was initially placed in service in 1971. The Robinson TUP
8 was necessary to provide regulatory and safety enhancements, as well as
9 reliability enhancements. The TUP provides the facility with a second off-site
10 power path, aligning the station with the current standards in the U.S. for
11 nuclear power plants.

12
13 Significant activities associated with the TUP included replacement of the 115
14 KV startup transformer, the addition of a second 230 KV startup transformer
15 and upgrades to the KV bus and transmission lines. This was an extensive,
16 multi-year project that included complex engineering, design, construction and
17 financial considerations.

18
19 The Robinson TUP was completed in 2018 and the majority of capital
20 expenditures specific to this project are not yet included in rate base. In the
21 Company's next general rate case, the Company will seek cost recovery of such
22 costs, and the reasonableness and prudence of the project and its capital costs
23 will be evaluated in that proceeding.

1 **Q. WHAT RELEVANCE DOES THE ROBINSON TUP OUTAGE HAVE**
2 **TO THIS PROCEEDING?**

3 A. The only relevance to this proceeding is whether the 28-day extension of the
4 Robinson outage occurring in the test period was a result of any imprudence on
5 the part of the Company in connection with the TUP.

6
7 The TUP commenced in 2011 and the Company did have challenges with the
8 early stages of the TUP, largely associated with the initial Engineer of Choice's
9 ("EOC") inability to successfully design the project, particularly as the scope
10 of the project became more complex. The Company ultimately determined that
11 the initial design contract should be terminated and the initial EOC replaced.
12 The Company sought bids and awarded the design contract to another EOC in
13 2015, more than three years prior to the start of the fall 2018 refueling outage.

14
15 At the start of the 2018 refueling outage, when the final phase of the TUP was
16 scheduled to be completed, the Company was confident that the project design
17 challenges had been resolved, and that the TUP and other projects and work
18 scheduled during the 2018 refueling outage could be completed within the
19 schedule allocation.

20

1 **Q. DID THE CHANGE IN THE ENGINEER OR THE COMPANY'S**
2 **CONTRACT OVERSIGHT OF THE TUP CAUSE THE EXTENSION**
3 **OF THE 2018 OUTAGE?**

4 A. No, it did not.

5 **Q. WHAT WAS THE CAUSE OF THE 28-DAY EXTENSION OF THE**
6 **OUTAGE?**

7 A. The cause of the 28-day outage extension was a shortage of qualified technical
8 contractors, a situation regarding which the Company was aware of prior to the
9 outage but which was exacerbated by the impact of Hurricanes Florence and
10 Michael. The refueling outage was originally scheduled to begin on September
11 15, 2018, just one day after Hurricane Florence made landfall. The outage was
12 delayed for one week and on September 22, 2018, the plant entered the fall
13 refueling outage. In the end, the Company was able to obtain only
14 approximately 50% of the needed electricians for the project.

15 **Q. WHAT EFFORTS DID THE COMPANY UNDERTAKE TO OBTAIN**
16 **THE REQUIRED NUMBER OF RESOURCES FOR THE PROJECT?**

17 A. Prior to the scheduled outage start date, the Company was aware that challenges
18 existed in obtaining qualified specialty electrical supplemental workers to
19 support the final phase of the TUP in the fall 2018 refueling outage, and
20 therefore, the Company undertook substantial efforts to address the shortage.
21 Specifically, the Company initiated weekly calls with the primary resource
22 vendor to ensure that all actions to close the resource gap were underway. The
23 primary resource vendor, a major supplemental labor provider to the nuclear

1 industry and a vendor with a successful long-standing relationship with DEP,
2 exerted substantial efforts to obtain additional qualified electrical workers.
3 Supplementing the efforts of the primary resource provider, the Company
4 independently contacted fifteen additional sub-tier vendors in an effort to secure
5 additional electrical workers. Finally, the Company reviewed non-critical
6 electric projects underway or scheduled during the fall of 2018 to determine if
7 those projects could be delayed, thereby freeing additional resources to assist
8 on the Robinson TUP. In cases where delay was acceptable, those projects were
9 delayed and resources were redirected to the Robinson effort. In summary, the
10 Company anticipated the labor shortage and took substantial steps to procure
11 the necessary qualified electrical workers.

12 **Q. GIVEN THE KNOWN RESOURCE CHALLENGES, WHY DID THE**
13 **COMPANY NOT FURTHER DELAY THE ROBINSON REFUELING**
14 **OUTAGE UNTIL THE DESIRED RESOURCES WERE AVAILABLE?**

15 A. Once again, at the start of the refueling outage, the Company was confident,
16 even with the known resource challenges, that the outage would be successfully
17 completed within the scheduled allocation.

18
19 However, it is also important to note that the unit had reached the period where
20 refueling was required, and any additional delays would have required the unit
21 to operate at increasingly reduced power, and would have impacted other
22 scheduled unit outages and the ability of the Company to efficiently meet load
23 demands. There was simply no practical way to further delay the refueling

1 outage beyond the one-week delay implemented based on the pending arrival
2 of Hurricane Florence.

3 **Q. AT THE TIME THAT THE DECISION WAS MADE TO COMMENCE**
4 **WITH THE REFUELING OUTAGE, WAS THERE ANY WAY THAT**
5 **THE COMPANY COULD HAVE ANTICIPATED THE WIDESPREAD**
6 **FLOODING THAT WOULD FURTHER EXACERBATE THE LABOR**
7 **SHORTAGE?**

8 A. No. Once again, putting aside the fact that there was no practical way to further
9 delay the outage, the Company could not have anticipated the wide-spread
10 regional flooding that would result from the hurricanes, which only further
11 constrained available labor resources, as some of the already limited available
12 resources had to leave work and respond to emergency situations. For instance,
13 in some cases, qualified contractors left Robinson to tend to homes damaged by
14 flooding and in other cases, qualified contractors were prevented from traveling
15 to Robinson due to the flooding. Finally, in some cases, qualified contractors
16 elected to pursue more lucrative storm restoration work.

17 **Q. DOES WITNESS METZ ACKNOWLEDGE THAT WEATHER WAS A**
18 **MAJOR CAUSE OF THE EXTENDED OUTAGE?**

19 A. Yes. The Company discussed both the resource and weather impacts on the
20 outage and the project in significant detail with witness Metz and other
21 members of the Public Staff and witness Metz acknowledged the impact of the
22 weather events in his testimony.

1 **Q. WHAT IS YOUR UNDERSTANDING OF WITNESS METZ'S VIEW ON**
2 **THE RELATIONSHIP BETWEEN THE COMPANY'S**
3 **MANAGEMENT OF THE TUP AND THE EXTENDED OUTAGE**
4 **OCCURRING IN THE TEST PERIOD.**

5 A. Witness Metz states that "there is significant doubt, in my professional opinion,
6 as to whether the Company's management of the project should have resulted
7 in it being shifted from the Spring 2017 refueling outage to the Fall 2018
8 refueling outage." My understanding is that witness Metz is identifying this
9 particular decision to shift the TUP to the fall 2018 refueling outage as a
10 potential cause of the extended outage, but witness Metz does not provide any
11 further explanation regarding such alleged causal connection. As I explain
12 below, the implementation delay from the spring of 2017 to the fall of 2018,
13 had no direct impact on the extension of the 2018 refueling outage.

14 **Q. WHAT WAS THE REASON THAT WORK SHIFTED FROM THE**
15 **SPRING 2017 REFUELING OUTAGE TO THE FALL 2018**
16 **REFUELING OUTAGE?**

17 A. As the pre-outage project milestones approached prior to the 2017 refueling
18 outage, the Company determined that the final phase of the project was not in a
19 ready state to support execution during the 2017 refueling outage. Therefore,
20 the decision was made to shift the final phase of the project to the 2018 refueling
21 outage.

22

1 **Q. DO YOU STAND BEHIND THE DECISION TO SHIFT THE**
2 **COMPLETION OF THE TUP TO THE 2018 REFUELING OUTAGE?**

3 A. Yes. In my opinion the delay was the prudent decision and avoided challenges
4 that may have arisen due to the project not being in a ready state, including open
5 engineering issues and material procurement issues. The outage planning
6 process is a very detailed and structured process and the deferral decision was
7 based on wholistic consideration of the various factors that would impact the
8 ability of the Company to execute the TUP in a timely manner.

9 **Q. DID SHIFTING THE TUP TO THE 2018 REFUELING OUTAGE**
10 **IMPACT CUSTOMERS?**

11 A. No. Once again, I believe that the decision to shift the work from the 2017
12 refueling outage was well-justified based on the state of the project. The only
13 real difference in performing the work in the fall 2018 refueling outage was the
14 impact of both Hurricane Florence and Hurricane Michael, which was
15 obviously completely unforeseeable at the time the decision was made.

16 **Q. PLEASE PROVIDE AN OVERVIEW OF THE INFORMATION**
17 **PROVIDED TO PUBLIC STAFF REGARDING THE ROBINSON TUP**

18 A. In addition to the on-site meeting, the Company responded to 31 detailed data
19 requests and provided thousands of pages of responsive documents. These
20 documents included detailed project timelines, business analysis documents
21 and details regarding the RFP process used to select the contractor. The
22 responses also included the underlying contract and all amendments, annual
23 estimated and actual project spend, project oversight guidelines and monthly

1 hours charged by employees. Additionally, the Public Staff received a detailed
2 list of engineering change milestones, monthly project status review reports and
3 associated nonconformance investigations related to those monthly reviews.
4 The information produced to Public Staff provides a very clear and detailed
5 picture of the Company's oversight of the TUP. For instance, the project status
6 review reports contain an immense amount of detail regarding TUP
7 implementation that was provided to management on a monthly basis, including
8 budget projections and variances, status of key milestones and deliverables,
9 project risk and contingency analysis and safety performance details.

10 **Q. PLEASE RESPOND TO WITNESS METZ ALLEGATIONS THAT**
11 **“THE COMPANY’S LACK OF DOCUMENT ACCESS OR**
12 **RETENTION RESTRICTED THE PUBLIC STAFF’S ABILITY TO**
13 **REVIEW AND EVALUATE THE PRUDENCY OF PROJECT**
14 **MANAGEMENT.”**

15 A. We believe that witness Metz has been provided sufficient documentation to
16 assess the prudence of project management and he has certainly been provided
17 sufficient documentation to assess the causes of the extended outage that is
18 relevant to this case.

19 **Q. WITNESS METZ SPECIFICALLY ALLEGES THAT THE COMPANY**
20 **DID NOT FULLY COMPLY WITH COMMISSION RULE R8-28. ARE**
21 **YOU FAMILIAR WITH THAT RULE?**

22 A. I have been advised by Company counsel that the rule requires that records be
23 maintained in accordance with a particular National Association of Regulatory

1 Commissioners' ("NARUC") publication entitled "Regulations to Govern the
2 Preservation of Records of Electric, Gas and Water Utilities." ("NARUC
3 Document Retention Policy") unless otherwise required by the Commission.
4 While I am not directly responsible in my role for establishing internal
5 document retention policies, I have been provided a copy of the NARUC
6 Document Retention Policy.

7 **Q. WHAT HAVE YOU ADVISED REGARDING THE NARUC**
8 **DOCUMENT RETENTION POLICY?**

9 A. I have been advised by counsel that the NARUC Document Retention Policy is
10 a 32-page document that begins with some introduction and limited initial
11 guidelines and then, starting on Page 4, provides a detailed table identifying
12 particular documents and the corresponding minimum retention period.

13 **Q. HAS WITNESS METZ IDENTIFIED ANY WAY IN WHICH THE**
14 **COMPANY'S DOCUMENT RETENTION POLICIES DO NOT**
15 **COMPLY WITH THOSE PARTICULAR DOCUMENT RETENTION**
16 **POLICIES?**

17 A. No. Witness Metz has not identified any ways in which the Company's
18 document retention policies do not comply with those particular document
19 retention policies. However, in a footnote, witness Metz appears to reference
20 (though a specific cite is not provided) to some very general guidance in Section
21 K of the NARUC Document Retention Policy that states as follows:
22 "[n]otwithstanding the minimum retention periods provided in these
23 regulations, if a public, utility or licensee wants to reflect costs in a current,

1 future, or pending rate case, or if a public utility or licensee has abandoned or
2 retired a plant subsequent to the test period of the utility's rate case, *the utility*
3 *shall retain the appropriate records to support the costs and adjustments*
4 *proposed in the current or next rate case.*" (emphasis added).

5 **Q. PLEASE COMMENT ON THIS STANDARD.**

6 A. I am not an attorney nor am I directly responsible for establishing the
7 Company's document retention policies. However, putting aside the issue of
8 whether or not this particular standard is intended to be applied to fuel cost
9 recovery proceedings (as opposed to a base rate case), the standard is inherently
10 subjective, requiring the retention of "appropriate records to support the costs
11 and adjustments." In short, Public Staff has not identified a concrete, objective
12 document retention policy that the Company has violated but instead has
13 reached a subjective determination. In this case, Company believes that it has
14 provided records sufficient to support the costs.

15 **Q. PLEASE PROVIDE A SPECIFIC EXAMPLE.**

16 A. Witness Metz is critical of the volume of informal communications that the
17 Company was able to produce regarding the project. Yet, there is nothing in
18 the NARUC Document Retention Policy that directs that the Company must
19 retain all email communications regarding a capital project.

20 **Q. PLEASE COMMENT ON THE EXTENT OF PUBLIC STAFF'S**
21 **DISCOVERY IN THIS CASE.**

22 A. The vast majority of issues explored through Public Staff discovery related to
23 the TUP are more directly related to the prudence of the capital costs and are

1 not related to this proceeding. Frankly, the scope of the base case-related
2 discovery conducted by the Public Staff in this proceeding was unusual for a
3 fuel related proceeding, which made it very difficult to respond to issues that
4 usually arise only in the context of a base rate proceeding. Nonetheless, the
5 Company devoted considerable efforts under short discovery deadlines to
6 provide Public Staff as much information as possible, including arranging for
7 an on-site visit with senior management. The Company believes that it has
8 provided sufficient information to demonstrate the reasonableness and
9 prudence of the Company's actions as it relates to the issues in this proceeding.
10 In addition, we also believe that these efforts will potentially enable the
11 Company to more efficiently provide information to Public Staff in the context
12 of the next base rate case where this issue is more directly relevant.

13 **Q. DOES WITNESS METZ MAKE AN ADJUSTMENT IN THIS**
14 **PROCEEDING TO PURCHASE POWER COSTS AS A RESULT OF**
15 **THE OUTAGE EXTENSION?**

16 A. No, he does not. Witness Metz stated that he could not conclude that it is
17 appropriate to disallow recovery of the replacement power costs for an outage
18 that was impacted by severe weather events.

19

1 **Q. HAS THE COMPANY PROVIDED SUFFICIENT INFORMATION TO**
2 **DEMONSTRATE THAT 28-DAY OUTAGE EXTENSION WAS NOT**
3 **THE RESULT OF IMPRUDENCE ON THE PART OF THE**
4 **COMPANY?**

5 A. Yes, we have and the Company believes that such information demonstrates the
6 prudence of the Company's actions.

7 **Q. TURNING NOW TO WITNESS METZ'S OTHER**
8 **RECOMMENDATIONS: PLEASE RESPOND TO WITNESS METZ'S**
9 **POSITION REGARDING THE HARRIS AND ROBINSON CAPACITY**
10 **FACTORS.**

11 A. Witness Metz asserts that "when calculating the annual (test year) [capacity
12 factor], the additional 32 MWs of station capacity should have been included,
13 beginning when the outage was completed." For the purposes of comparing
14 test period capacity factor results to R8-55(k) guidelines, the Company
15 understands, but does not agree with the argument witness Metz makes
16 regarding the timing of the restatement of the Harris maximum dependable
17 capacity ("MDC"). The Company's timing of official MDC adjustments at the
18 beginning of a calendar year complies with industry norms and is driven to
19 some extent by regulatory reporting requirements. Based both on regulatory
20 reporting requirements, and the business need for the Company to establish and
21 maintain valid MDC ratings, the Company follows procedural guidelines in
22 establishing and reporting MDC values. The Company's procedure requires
23 that inlet water temperatures are normalized over a five-year period. This

1 normalization ensures that extreme weather conditions, including abnormally
2 high temperatures and drought conditions are appropriately considered. In
3 many cases, engineering analysis can reasonably project a unit’s MDC value,
4 but observation over the most restrictive summer period, is necessary to
5 establish an accurate MDC rating. Therefore, restating the Harris MDC
6 effective January 1, 2019 was appropriate and in accordance with Company
7 procedures. However, the Company has no objection to also providing the
8 Public Staff with an adjusted capacity factor calculation on those occasions
9 when the rating change is substantial, but delayed to allow for seasonal
10 observations, and when the MDC value has been formally established and is
11 known with certainty. However, due to regulatory reporting requirements for
12 unit ratings to both the Nuclear Regulatory Commission and the Southeastern
13 Reliability Council, the Company will continue to follow established
14 procedures related to official unit ratings, including MDC.

15
16 Witness Metz also highlights in his testimony that the Robinson station
17 exceeded a 100% capacity factor for several months during the test period. The
18 Company acknowledges this fact, but challenges the assumption or implication
19 that the Robinson station’s MDC value is incorrect. The NRC defines MDC as
20 “[t]he maximum amount of electricity that the main generating unit of a nuclear
21 power reactor can reliably produce during the summer or winter (usually
22 summer, but whichever represents the most restrictive seasonal conditions, with
23 the least electrical output).” By definition, a unit’s capacity factor can exceed

1 100% during any time period when inlet water temperatures are below the
2 highest value. The fact that the Robinson station achieved a capacity factor just
3 slightly above 100% during certain summer months does not indicate that the
4 unit's MDC value is incorrect.

5 **Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?**

6 A. Yes, it does.

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

DOCKET NO. E-2, SUB 1204

In the Matter of)	
Application of Duke Energy Progress, LLC)	REBUTTAL TESTIMONY
Pursuant to G.S. 62-133.2 and NCUC Rule)	OF BARBARA A. COPPOLA AND
R8-55 Relating to Fuel and Fuel-Related)	JOHN HALM
Charge Adjustments for Electric Utilities)	FOR DUKE ENERGY PROGRESS,
		LLC

1 **Q. MS. COPPOLA, PLEASE STATE YOUR NAME AND BUSINESS**
2 **ADDRESS.**

3 A. My name is Barbara A. Coppola, and my business address is 400 South Tryon
4 Street, Charlotte, North Carolina.

5 **Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?**

6 A. I am employed by Duke Energy Business Services, LLC as Manager, Grid
7 Solutions Strategy and Planning. In a previous role, I worked with our Fuels and
8 System Optimization organization and was responsible for administering contracts
9 and arrangements for the acquisition of reagents for our power generating fleets as
10 well as the disposition of certain power generation by-products that can be sold for
11 beneficial reuse.

12 **Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND**
13 **PROFESSIONAL EXPERIENCE.**

14 A My educational background includes a Bachelor of Science in Mechanical
15 Engineering from Rochester Institute of Technology in Rochester, New York and a
16 Master of Science in Management from North Carolina State University in Raleigh,
17 North Carolina. I joined Progress Energy in 2002 in the Engineering Programs
18 Department and then spent thirteen years in Fuels and System Optimization in a
19 number of roles, including coal procurement, byproducts and reagents management
20 and manager of transportation. I then joined the Distributed Energy Technology
21 department and had responsibility for developing new products and services for our
22 customers in the area of distributed energy technologies such as solar, wind, energy
23 storage and microgrids. My current role in Grid Solutions is developing strategies

1 and plans for Grid Initiatives. I am a Registered Professional Engineer in the states of
2 New York and North Carolina.

3 **Q. HAVE YOU PREVIOUSLY TESTIFIED OR SUBMITTED TESTIMONY**
4 **BEFORE THE NORTH CAROLINA UTILITIES COMMISSION?**

5 A. No.

6 **Q. MR. HALM, PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

7 A. My name is John Halm, and my business address is 400 South Tryon Street,
8 Charlotte, North Carolina.

9 **Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?**

10 A. I am employed by Duke Energy Business Services, LLC as Lead Byproducts
11 Marketer - CCP. In my current capacity I manage the synthetic gypsum
12 commercial activities and day to day operations.

13 **Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND**
14 **PROFESSIONAL EXPERIENCE.**

15 A. My educational background includes a Bachelor of Science in Chemical
16 Engineering from Clemson University in Clemson, South Carolina. I began
17 working for Progress Energy in 2009 in the Fuels and System Optimization
18 Department as a Fuels Engineer.

19 **Q. HAVE YOU PREVIOUSLY TESTIFIED OR SUBMITTED TESTIMONY**
20 **BEFORE THE NORTH CAROLINA UTILITIES COMMISSION?**

21 A. No.

22 **Q. WHAT IS THE PURPOSE OF THIS REBUTTAL TESTIMONY?**

23 A. The purpose of this rebuttal testimony is to respond on behalf of Duke Energy
24 Progress, LLC (“DEP” or the “Company”) to the testimony of Public Staff witness

1 Jay B. Lucas in this proceeding.

2 **Q. PLEASE PROVIDE AN OVERVIEW OF YOUR TESTIMONY.**

3 A. In 2002, the Company began pursuit of a long-term commercial transaction that
4 was projected to provide substantial benefit to customers based on what was known
5 at that time. Specifically, the Company was ultimately able to reach an agreement
6 (the “Agreement”)¹ pursuant to which a wallboard manufacturer—CertainTeed
7 Gypsum NC, Inc.² (“CertainTeed”)—was to construct a manufacturing facility at
8 Roxboro and make a long-term commitment to purchase substantial amounts of
9 gypsum from the Roxboro and Mayo units under a gypsum supply agreement. This
10 arrangement secured a long-term revenue stream for customers while avoiding
11 disposal and other costs that would otherwise be incurred.

12
13 Over the intervening 15+ year period of time, circumstances changed dramatically.
14 Specifically, due to the decrease in natural gas prices, the dispatch of Roxboro and
15 Mayo Generating Stations decreased and therefore the amount of synthetic gypsum
16 produced decreased. The Company pursued all reasonable avenues—including
17 fully litigating a complaint brought by CertainTeed in the North Carolina Business
18 Court and prevailing against CertainTeed’s claim that the Company must deliver
19 gypsum from alternative sources at the Company’s cost for the full remaining term
20 of the Agreement. However, the Company ultimately determined that

¹ For purposes of this testimony, the “Agreement” refers to the Second Amended and Restated Supply Agreement dated August, 1, 2012 by and between CertainTeed Gypsum NC, Inc. and DEP. The LD provision remains essentially unchanged from the initial agreement entered into 2004.

² CertainTeed is the successor-in-interest to BPB NC Inc., which negotiated and executed the 2004 Agreement.

1 discontinuing supply under the Agreement and making payment of liquidated
2 damages (“LDs”) was the most prudent and reasonable option for customers.

3

4 When payments made by the Company under the Agreement are netted against the
5 revenues received by the Company for the sale of gypsum, the Company has
6 experienced a loss in connection with the sale of gypsum. Therefore, because the
7 LDs were incurred as a result of prudent and reasonable decisions of the Company
8 and constitute a “loss[] resulting from any sales by the electric public utility of by-
9 products produced in the generation process to the extent the costs of the inputs
10 leading to that by-product are costs of fuel or fuel-related costs,” the LDs are
11 properly recoverable through fuel rates.

12

13 Each and every decision that the Company made during this chain of events was
14 prudent and reasonable given what was known or reasonably should have been
15 known at the time the decision was made. From the initial decision to enter into a
16 long-term transaction to sell gypsum and thereby avoid landfill and disposal costs,
17 to the decision to dispatch less expensive natural gas-fired units ahead of Roxboro
18 and Mayo coal-fired units in order to provide North Carolina customers the lowest
19 cost energy, to the decision to contest CertainTeed’s interpretation of the
20 Agreement in Court and, following the Court’s decision, to cease supplying
21 synthetic gypsum to CertainTeed under the Agreement and to pay LDs, the
22 Company has made the prudent decision for the benefit of customers.

23

1 Moreover, even though the Commission expressly prohibits the use of hindsight
2 analysis to evaluate the prudence of the Company's actions, the limited hindsight
3 analysis performed by the Company and described in more detail below shows that
4 decisions of the Company over the course of this transaction have resulted in overall
5 benefits to customers.

6 **Q. WHAT IS PUBLIC STAFF'S POSITION?**

7 A. Public Staff witness Jay Lucas asserts that "DEP's failure to deliver the required
8 amount of artificial gypsum and the resulting expenses arising from the legal action
9 taken against DEP by CertainTeed do not constitute a "sale" under the express and
10 limited provision of N.C. Gen. Stat. § 62-133.2(a1)(9)."

11 **Q. DID WITNESS LUCAS MAKE ANY ATTEMPT TO ASSESS THE**
12 **PRUDENCE OF THE COMPANY'S DECISIONS?**

13 A. No. As discussed above, the Public Staff position centers on a legal question
14 regarding whether the LDs in this case constitute fuel-related costs under North
15 Carolina law. Public Staff witness Jay Lucas states that Public Staff has "concerns
16 regarding the reasonableness and prudence of the costs" but does not attempt to
17 identify any particular decision or action of the Company that may have been
18 imprudent. In a footnote, the Public Staff does question certain assumptions in a
19 particular piece of hindsight-based analysis provided by the Company, and we
20 address this particular hindsight-based analysis later in our testimony.

21

1 **Q. DID THE COMPANY PROVIDE SUFFICIENT DETAILS REGARDING**
2 **THE HISTORY OF THIS TRANSACTION TO ALLOW PUBLIC STAFF**
3 **TO ASSESS THE PRUDENCE OF THE COMPANY’S ACTIONS?**

4 A. Yes. The Company responded to extensive discovery on this issue, providing
5 written responses to four sets of data requests and thousands of pages of responsive
6 documents. Such information is sufficient to assess the reasonableness and
7 prudence of the Company’s actions.

8 **Q. WHAT IS THE RELEVANT LEGAL STANDARD IN THIS CASE FOR**
9 **DETERMINING WHETHER THE LDs PAID CONSTITUTE**
10 **RECOVERABLE FUEL COSTS?**

11 A. We have been advised by the Company’s counsel that N.C. Gen. Stat. § 62-
12 133.2(a1)(9) states that “cost of fuel and fuel-related costs shall be adjusted for any
13 net gains or losses resulting from any sales by the electric public utility of by-
14 products produced in the generation process to the extent the costs of the inputs
15 leading to that by-product are costs of fuel or fuel-related costs.”

16 **Q. DID THE COMPANY EXPERIENCE A LOSS IN CONNECTION WITH**
17 **ANY SALES OF GYPSUM?**

18 A. Yes. In assessing whether a loss occurred for purposes of determining the
19 recoverability through the fuel rider, we have been advised by the Company’s
20 counsel that it is necessary to look at the flow of revenue and costs under the
21 Agreement. From that perspective, DEP experienced a “loss” because the amount
22 of costs incurred by the Company due to its obligations under the Agreement
23 exceeded the amount of revenue received by DEP. Put simply, DEP sold a
24 substantial amount of gypsum to CertainTeed for which DEP received revenue of

1 approximately \$24.3 million and was also obligated to pay LDs and other costs
2 totaling approximately \$90 million. Therefore, with respect to the Agreement and
3 the sale of gypsum thereunder, DEP has experienced a loss.

4 **Q. WHAT IS YOUR UNDERSTANDING OF PUBLIC STAFF'S POSITION?**

5 A Witness Lucas states that "DEP's failure to deliver the required amount of artificial
6 gypsum and the resulting expenses arising from the legal action taken against DEP
7 by CertainTeed do not constitute a "sale" under the express and limited provision
8 of N.C. Gen. Stat. § 62-133.2(a1)(9). There was no "sale" in which DEP sold
9 gypsum to CertainTeed in exchange for payment."

10 **Q. DO YOU AGREE THAT THERE WAS NO "SALE" IN WHICH DEP SOLD
11 GYPSUM TO CERTAINTEED IN EXCHANGE FOR PAYMENT"?**

12 A. No, this is an incorrect statement. The Company sold millions of tons of gypsum
13 to CertainTeed under the Agreement and continues to sell gypsum to CertainTeed.
14 Public Staff is mistaken in its attempt to divorce or extract the LD payment
15 obligation from the purchase and sale context in which it arose. The LD payment
16 was an integral part of the Agreement for the sale of gypsum and it should be
17 considered in that context.

18 **Q. DID THE OBLIGATION TO PAY LDs "RESULT" FROM THE SALE OF
19 GYPSUM?**

20 A. Yes, the LDs were the result of actual sales of gypsum, meaning that the LDs would
21 not have been incurred but for the Company's actual sales of gypsum. As further
22 described below, the LDs were negotiated as part of the original agreement for the
23 sale of synthetic gypsum to CertainTeed in 2004 and were included in all
24 subsequent versions of the Agreement.

1 **Q. DOES PUBLIC STAFF'S OVERLY RIGID INTERPRETATION INCENT**
2 **NON-STANDARD CONTRACTUAL ARRANGEMENTS?**

3 A. Yes. Public Staff's interpretation of N.C. Gen. Stat. § 62-133.2(a1)(9) places form
4 over function and incents particular contractual arrangements that may not be in the
5 best interest of customers or are otherwise unnecessarily complex.

6 **Q. PLEASE DESCRIBE THE APPLICATION IN THIS CASE.**

7 A. LDs are a common commercial term by which parties allocate risk under various
8 types of contracts. Public Staff's interpretation of N.C. Gen. Stat. § 62-133.2(a1)(9)
9 would incent the Company to avoid LD provisions and instead allocate risk through
10 more indirect means that may not be as optimal for the Company or its customers.
11 For instance, if the Company is unwilling to agree to LDs for failure to meet a
12 particular contractual minimum obligation, the counterparty may require a lower
13 price to compensate for the greater level of risk. This fact highlights that an LD
14 payment is but one inter-related term among many from any purchase and sale
15 agreement, and it is not reasonable to artificially segregate one particular
16 commercial term from the entirety of the contractually determined balance of risk
17 and obligations and the resulting net gain and losses that flow therefrom.

18 **Q. WHAT OTHER CONCERNS DO YOU HAVE REGARDING PUBLIC**
19 **STAFF'S POSITION?**

20 A. There is also an asymmetry to Public Staff's position. Once again, an LD provision
21 is a common commercial term by which parties allocate risk between each other.
22 The price for gypsum in the Agreement reflected the allocation of risk by the
23 parties, including the LD provisions. Customers have been receiving the benefit of
24 the revenues under the Agreement through reduced fuel rates and it would be

1 asymmetrical for them to receive the benefits but not an actual cost that arose from
2 the same transaction.

3 **Q. HAS THE COMMISSION EVER ALLOWED FOR THE RECOVERY OF**
4 **LDs THROUGH THE FUEL RATES?**

5 A. Yes. Though neither of us were personally involved in these examples or have in-
6 depth knowledge of the particular details, we have been advised that there are prior
7 instances in which the Commission has allowed for the recovery of LDs through
8 fuel rates. For instance, in 2013 the Company incurred and recovered through fuel
9 rates \$10.6 million due to a tonnage shortfall under a railroad transportation
10 contract in connection with the retirement of the Robinson and Sutton coal-fired
11 generating units.³ In 2014, the Company incurred and recovered through fuel rates
12 \$10.5 million in LDs due to a tonnage shortfall under another railroad contract in
13 connection with the retirement of the Sutton coal-fired generating facility.⁴ The
14 Company specifically noted in a discovery response that “it was cheaper for the
15 Company’s customers for the Company to incur the liquidated damages on its
16 [railroad] contract and generate the lowest cost generation after accounting for the
17 [] liquidated damages.” In 2019, Duke Energy Carolinas, LLC (“DEC”) incurred
18 \$786,615 in LDs due to a limestone tonnage shortfall and the Commission approved
19 a fuel charge adjustment for DEC to begin recovering these LDs through fuel rates
20 effective for service on or after September 1, 2019.⁵ DEC specifically noted in a
21 discovery response that “DEC was unable to meet its contractually defined

³ Docket No. E-2, Sub 1031. See the Company’s responses to PSDR 1-22 and 12-8.

⁴ Docket No. E-2, Sub 1045. See the Company’s response PSDR 2-8.

⁵ Docket No. E-7, Sub 1190. See the Company’s response to PSDR 2-5.

1 minimum tonnage obligations due to decreases in natural gas prices that resulted in
2 declining coal burns, which in turn reduced limestone consumption.”

3 **Q. TURNING NOW TO THE QUESTION OF PRUDENCE, DO YOU**
4 **BELIEVE THAT EACH OF THE COMPANY’S DECISIONS**
5 **THROUGHOUT THIS PROCESS WERE REASONABLE AND PRUDENT**
6 **GIVEN WHAT WAS KNOWN AT THE TIME?**

7 A. Absolutely, yes.

8 **Q. PLEASE PROVIDE FURTHER BACKGROUND.**

9 A. Once again, the genesis of this transaction occurred in 2002, as the Company sought
10 to identify the most cost-effective options for disposing of gypsum. The Company
11 can either dispose of the gypsum in a landfill or sell the material for beneficial
12 reuse. Clearly, selling the material is the preferable option but the challenge is
13 finding buyers that have a need for substantial quantities of gypsum and that are
14 able to utilize gypsum in a cost-effective manner. Further, such buyers generally
15 will not agree to long-term purchase commitments without adequate remedies for
16 undersupply or discontinued supply in the event the counterparty does not supply
17 the buyers’ requirements.

18 **Q. WHAT WAS OCCURRING IN THE EARLY- TO MID-2000s THAT**
19 **FURTHER CAUSED THE COMPANY TO NEED TO TAKE STEPS TO**
20 **IDENTIFY COST-EFFECTIVE, LONGER-TERM GYPSUM DISPOSAL**
21 **OPTIONS?**

22 A. Due to increasing environmental regulations, the Company was installing scrubbers
23 on a number of its coal-fired generating units, including Roxboro and Mayo, that

1 would result in substantial amounts of gypsum being produced. During this period,
2 the installation of scrubbers was also occurring across the country.

3 **Q. PLEASE DESCRIBE THE BASIC IDEA OF THE CERTAINTeed**
4 **COMMERCIAL RELATIONSHIP?**

5 A. At that time, utilities were aggressively looking for long-term arrangements under
6 which they could sell large amounts of gypsum. CertainTeed provided a desirable
7 solution because it was willing to construct a wallboard manufacturing facility at
8 Roxboro. The CertainTeed transaction provided DEP with a long-term purchaser
9 of substantial amounts of gypsum.

10 **Q. IN YOUR OPINION, WAS IT PRUDENT AND REASONABLE FOR DEP**
11 **TO ENTER INTO THE INITIAL TRANSACTION?**

12 A. Yes. Based on the gypsum production estimates that existed at that time, it was
13 prudent and reasonable for DEP to enter into the transaction. Stated differently,
14 based on the projected amounts of gypsum production, it would have been
15 imprudent for the Company to pass on such an opportunity to obtain a long-term
16 buyer of its gypsum while avoiding potential disposal and other pile management
17 costs. It is important to keep in mind that Roxboro and Mayo are relatively
18 geographically isolated and the substantial costs of transportation would have
19 severely restricted the pool of potential gypsum buyers.

20 **Q. AT THE TIME OF INITIAL TRANSACTION, WAS A FIRM DELIVERY**
21 **OBLIGATION, COMBINED WITH AN LD PROVISION, INCLUDED IN**
22 **THE CONTRACT?**

23 A. Yes, the original agreement included a firm delivery obligation and an LD
24 provision.

1 **Q. WHY WAS A FIRM DELIVERY OBLIGATION AND ASSOCIATED LD**
2 **AN ESSENTIAL TERM OF THE TRANSACTION?**

3 A. CertainTeed was investing approximately \$200 million to construct a wallboard
4 production facility that was projected to operate for approximately 20-30 years and
5 therefore required an assurance of supply of gypsum sufficient to justify
6 construction of the production facility. At the time of the original agreement,
7 CertainTeed anticipated significant demand for its products and predicted that it
8 would be able to use a significant portion of the gypsum production from the
9 Company's Roxboro and Mayo plants. Simply stated, no rational investor would
10 have been willing to make such a substantial investment without having an
11 assurance of cost-effective supply of gypsum that would be necessary to sustain
12 operations at necessary levels. And in order to provide protection in the event that
13 DEP could not fulfill the minimum delivery obligation, there needed to be
14 contractual provisions to incent performance. At the same time, from the
15 Company's perspective, there needed to be provisions limiting the financial risk to
16 the Company in the event it was not able to consistently supply the contractually-
17 required amounts over the longer term. In this case, the Company reasonably
18 limited its risk by providing that, if the Company failed to supply the required
19 amount of gypsum for certain periods specified in the Agreement, or if it
20 discontinued the supply of gypsum altogether, its obligation would be limited to
21 the payment of LDs. The LD provision reduced the Company's and its customers'
22 exposure in the event of a long-term disruption in its ability to deliver gypsum and,
23 therefore, was an essential component of the transaction as a whole.

1 **Q. WAS A FIRM DELIVERY OBLIGATION A STANDARD COMMERCIAL**
2 **TERM IN SIMILAR TRANSACTIONS IN THE INDUSTRY?**

3 A. Yes, it was common in the industry at that time to have longer-term arrangements
4 with minimum delivery and/or purchase obligations and contractual remedies in the
5 event of failure to satisfy the minimum delivery and/or purchase obligation.
6 Wallboard production facilities require stable supply and minimum volumes to
7 support continuous operation.

8 **Q. WHY WAS THE COMPANY ULTIMATELY NOT ABLE TO SATISFY**
9 **THE MINIMUM DELIVERY OBLIGATIONS⁶ UNDER THE**
10 **AGREEMENT?**

11 A. As natural gas prices dropped, DEP began to dispatch less expensive natural gas-
12 fired units ahead of the Roxboro and Mayo coal-fired units in order to provide
13 customers with the benefits of the lowest cost energy available. The dispatch levels
14 of Roxboro and Mayo declined significantly and therefore gypsum production also
15 declined significantly.

16 **Q. DID THE COMPANY HAVE ANOTHER OPTION OTHER THAN**
17 **PAYMENT OF THE LDs?**

18 A. Yes, the Company could have elected to continue the Agreement, in which case it
19 would have been required to pay for the cost, including substantial transportation
20 costs, of supplying replacement gypsum from alternative sources. However,
21 supplying replacement gypsum would have been substantially more expensive than
22 paying LDs. Therefore, the Company's decision to discontinue supply altogether

⁶ In the context of the litigation, there was a dispute concerning certain contractual terms but the court ultimately concluded that there was a minimum delivery obligation under the Agreement.

1 and pay LDs, rather than continuing to deliver replacement gypsum at a much
2 higher cost, was prudent.

3 **Q. IN SUMMARY, WERE THE ACTIONS AND DECISIONS OF THE**
4 **COMPANY AT EACH STEP OF THE CERTAINTIED TRANSACTION**
5 **REASONABLE AND PRUDENT.**

6 A. Yes.

7 **Q. WHAT IS HINDSIGHT ANALYSIS?**

8 A. We have been advised that hindsight analysis is any review that takes into account
9 facts that were not known or could not reasonably have been known at the time of
10 the decision.

11 **Q. DOES THE COMMISSION CONSIDER HINDSIGHT ANALYSIS WHEN**
12 **EVALUATING THE PRUDENCE OF A DECISION?**

13 A. No. We have been advised by the Company's counsel that the Commission's
14 standard for determining prudence is whether management decisions were made in
15 a reasonable manner and at an appropriate time on the basis of what was reasonably
16 known or reasonably should have been known at the time the decision was made.
17 Further, we have been advised that the Commission has determined that hindsight
18 analysis is not permitted for purposes of assessing prudence.

19 **Q. WHY HAS THE COMPANY PERFORMED HINDSIGHT ANALYSIS IN**
20 **THIS CASE?**

21 A. While the hindsight analysis should not be used to assess the prudence of the
22 Company's actions, such hindsight analysis helps to give a greater context for the
23 LDs in this case. The Company recognizes that the amount of LDs in this case are
24 substantially larger in total than the amount of LDs that have previously been

1 recovered through fuel rates. But the limited hindsight analysis performed by the
2 Company helps give context to these LDs.

3 **Q. WHILE THE COMPANY EXPERIENCED A LOSS UNDER THE**
4 **AGREEMENT, HAVE CUSTOMERS RECEIVED OVERALL BENEFIT**
5 **FROM THE CHAIN OF EVENTS THAT RESULTED IN THE**
6 **OBLIGATION TO PAY LDs?**

7 A. Yes. The primary factor that caused the Company not to be able to satisfy its
8 minimum delivery obligations under the Agreement was the reduction in natural
9 gas prices that substantially reduced the dispatch of the Roxboro and Mayo units.
10 However, it is important to note that customers received substantial benefits from
11 the lowered natural gas prices that were provided through the Company's economic
12 dispatch of its diverse generating fleet.

13 **Q. HAS THE COMPANY ATTEMPTED TO QUANTIFY HOW MUCH**
14 **CUSTOMERS HAVE BENEFITTED FROM THE LOWER NATURAL GAS**
15 **PRICES?**

16 A. Yes, to a limited extent. The Company performed some limited analysis that
17 quantified the Roxboro/Mayo coal-fired kwh generation that would have been
18 needed to supply the gypsum tonnage shortfall over calendar years 2016-2018
19 (50,000 tons per month).⁷ The Company analyzed the period of 2016-2018 because

⁷ The analysis utilizes the average daily fuel cost for coal-fired generation at Roxboro and Mayo, as well as the average daily fuel cost for natural gas-fired generation at Richmond CCs and Richmond CTs. Based on plant capability, the analysis assumes that Roxboro would have supplied 77% of needed generation and Mayo 23% of needed generation. During years 2016-2018, DEP CTs provided 37% of DEP natural gas-fired MWhs; therefore, it is assumed that 63% of the generation displaced by natural gas was CC-supplied and 37% CT-supplied. Richmond CC and Richmond CT actual average daily fuel prices were used as a proxy for gas costs.

1 2016 is approximately the date on which DEP began to fall short of the minimum
2 delivery obligation.

3
4 The analysis showed that customers saved approximately \$134 million in fuel costs
5 by displacing Roxboro and Mayo coal-fired generation with DEP natural gas-fired
6 generation during the period of 2016-2018 alone. In other words, the fuel savings
7 resulting from lower natural gas prices in just a three-year period far outweighed
8 the total 10-year LD payment. Importantly, this \$134 million does not include
9 similar cost savings that would be expected from 2018 – 2029, which are more
10 difficult to estimate given the need to rely on longer-term projections.

11 .

12 The 2016-2018 analysis is based on a number of assumptions, and the value could
13 increase or decrease somewhat based on various changes in assumptions. However,
14 it is undoubtedly true that customers have saved substantial amounts of money due
15 to lower natural gas prices and those savings give better context to the amount of
16 the LDs in this case.

17 **Q. WOULD IT HAVE BEEN PRUDENT FOR THE COMPANY TO**
18 **DISPATCH ROXBORO AND MAYO OUT OF ECONOMIC DISPATCH**
19 **SIMPLY TO FULFILL THE MINIMUM DELIVERY OBLIGATIONS TO**
20 **CERTAINTEED?**

21 A. No. It would not have been prudent to burn the amount of coal necessary to meet
22 the minimum delivery obligations. Financially, customers would have been
23 disadvantaged had the Company elected to dispatch Roxboro and Mayo out of
24 economic order just to avoid LDs.

1 **Q. HAS THE COMPANY PERFORMED OTHER HINDSIGHT ANALYSIS?**

2 A. Yes, a second hindsight analysis was completed. This hindsight analysis netted the
3 revenue stream from sales based on projected gypsum production with the LD
4 payments, avoided landfill costs and avoided stockpile costs.

5 **Q. WHAT DID THIS ANALYSIS SHOW?**

6 A. This analysis showed an overall benefit to customers of approximately \$55 million
7 without even attempting to take into account the savings resulting from lower-cost
8 natural gas generation.

9 **Q. DID PUBLIC STAFF TAKE ISSUE WITH THIS ANALYSIS?**

10 A. Yes. Without acknowledging that this analysis was hindsight-based, the Public
11 Staff questioned the reasonableness of the disposal cost assumption and pile
12 management cost assumptions.

13 **Q. PLEASE RESPOND TO SUCH CRITIQUE.**

14 A. The disposal cost assumed in the analysis in question was based on an actual rate
15 paid by CertainTeed during the term of the Agreement for on-site disposal at the
16 Roxboro landfill. The Company acknowledges that synthetic gypsum disposal
17 costs onsite could have been lower or higher depending on variables such as
18 volume, transportation distance, environmental considerations, change in law, new
19 monofill development costs, and material handling. Based on these considerations,
20 the cost of disposal could have ranged from about \$10/ton to \$30/ton. Furthermore,
21 there is other evidence to suggest that if all of the Roxboro and Mayo gypsum had
22 to have been disposed, then additional off-site landfills most likely would have been
23 needed at a cost of about \$57/ton based on recent experiences of coal ash disposal
24 costs.

1 Undoubtedly different assumptions could be made in performing this hindsight
2 analysis, but all such assumptions entail some level of uncertainty.

3 **Q. DOES THIS CONCLUDE YOUR PRE-FILED REBUTTAL TESTIMONY?**

4 A. Yes, it does.