NORTH CAROLINA
PUBLIC STAFF
UTILITIES COMMISSION

June 3, 2013

Ms. Gail L. Mount, Chief Clerk
North Carolina Utilities Commission
4325 Mail Service Center
Raleigh, North Carolina 27699-4325

Re: Docket No. E-7, Sub 1033

Dear Ms. Mount:

In connection with the above-captioned docket, I transmit herewith for filing on behalf of the Public Staff 21 copies of the following:

1. Testimony of Kennie D. Ellis, Electric Engineer, Electric Division;

2. Testimony of James G. Hoard, Director, Accounting Division; and

3. Testimony of Randy T. Edwards, Staff Accountant, Electric Section, Accounting Division.

By copy of this letter, I am forwarding a copy of the above to all parties of record.

Sincerely yours,

Dianna W. Downey

Dianna W. Downey
Staff Attorney
dianna.downey@psncuc.nc.gov

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cc: Parties of Record

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STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH

DOCKET NO. E-7, SUB 1033

TESTIMONY OF KENNIE D. ELLIS ON BEHALF OF THE PUBLIC STAFF

June 3, 2013

Q. PLEASE STATE YOUR NAME AND ADDRESS FOR THE RECORD.

A. My name is Kennie D. Ellis. My business address is 430 North Salisbury Street, Raleigh, North Carolina.

Q. WHAT IS YOUR POSITION WITH THE PUBLIC STAFF?

A. I am an engineer in the Electric Division of the Public Staff, North Carolina Utilities Commission.

Q. WOULD YOU BRIEFLY DISCUSS YOUR EDUCATION AND EXPERIENCE?

A. My education and experience are outlined in Appendix A of my testimony.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A. The purpose of my testimony is to present the results of the Public Staff's investigation of the application filed by Duke Energy Carolinas, LLC (DEC or the Company) in this docket on March 6, 2013, in the areas of power plant performance and fuel and fuel-related costs. My testimony is also intended to support the Joint Agreement and Stipulation of Settlement entered into by DEC and the Public Staff with respect to nuclear plant performance.

Q. PLEASE DESCRIBE THE SCOPE OF THE PUBLIC STAFF'S INVESTIGATION.

A. The investigation included a review of the Company's test period and projected fuel and fuel-related costs and also the following: (1) the Company's application and testimony and voluminous responses to Public Staff data requests; (2) the performance of the Company's base load power plants, including the Company's fleet of nuclear facilities during the test year; (3) Company reports and Nuclear Regulatory Commission (NRC) documents; (4) the Company's purchased power transactions; (5) the cost of renewables and associated fuel prices; (6) the Company's coal, natural gas, nuclear, and reagent procurement practices and

contracts; and (7) the current state of coal, natural gas, nuclear fuel, and reagent markets. I also had multiple discussions with Company personnel concerning the performance of its nuclear facilities.

Q. WHAT WAS THE FOCUS OF THE INVESTIGATION RELATING TO THE PERFORMANCE OF DEC'S NUCLEAR FACILITIES?

A. G.S. 62-133.2(d) provides, among other things, that the burden of proof as to the correctness and reasonableness of the charge and as to whether the cost of fuel and fuel-related costs were reasonably and prudently incurred is on the utility, and that the Commission shall allow only that portion of fuel costs prudently incurred under efficient management and economic operations.

Commission Rule R8-55(k), which was adopted pursuant to G.S. 62-133.2(d1), provides that for purposes of determining the experience modification factor (EMF), a utility must achieve either (a) an actual system-wide nuclear capacity factor in the test year that is at least equal to the national average capacity factor for nuclear production facilities based on the most recent 5-year period available as reflected in the most recent North American Electric Reliability Corporation's (NERC) Generating Availability Report,

appropriately weighted for size and type of plant or (b) an average system-wide nuclear capacity factor, based upon a two-year simple average of the system-wide capacity factors actually experienced in the test year and the preceding year, that is at least equal to the national average capacity factor for nuclear production facilities based on the most recent 5-year period available as reflected in the most recent NERC Generating Availability Report, appropriately weighted for size and type of plant. If a utility does not achieve either standard, a rebuttable presumption is created that the utility incurred the increased cost of fuel and fuel-related costs imprudently, and a disallowance of the increased costs is appropriate.

As stated by Company witness Duncan on page 7 of his direct testimony, the most recent NERC five-year average, weighted for size and type of reactor in DEC's nuclear generation system, was 89.79%. Since the Company's nuclear generation system achieved an overall actual capacity factor of 91.85% during the test period, no presumption of imprudence or disallowance of increased fuel costs was created under Rule R8-55(k). However, the rule states that the burden of proof as to the correctness and reasonableness of any charge shall be on the utility.

In particular, the Company's proposed EMF reflects increased fuel costs resulting from the purchase of replacement power during the Catawba Unit 1 forced outage in April of 2012, the extension of the Catawba Unit 2 refueling outage during that same time period, and the extension of the McGuire Unit 2 refueling outage in the fall of 2012. Therefore, the Public Staff undertook to determine what caused these outages and outage extensions, whether the additional costs were reasonable and prudently incurred, and, if not, what adjustment to the Company's proposed EMF is appropriate.

Q. PLEASE DESCRIBE THE RESULTS OF YOUR INVESTIGATION INTO THE CATAWBA AND MCGUIRE OUTAGES.

A. The Public Staff's investigation of the Catawba and McGuire outages revealed the following information.

Catawba Units 1 and 2

In the spring of 2012, Catawba Unit 1 was operating at full power, while Catawba Unit 2 was in a scheduled refueling outage that had begun on March 10, 2012. On April 4, 2012, Catawba Unit 1 tripped following a trip of a reactor coolant pump. When generator power circuit breakers opened, the Zone G protective relaying system unexpectedly actuated, opening the switchyard breakers,

isolating Unit 1 and resulting in a Loss of Offsite Power (LOOP). Because Unit 2's essential busses were aligned to Unit 1's offsite power at the time, those busses lost power when the LOOP occurred. The Company investigated the causes behind both the trip of the reactor coolant pump and the actuation of the Zone G protective relaying system.

The Company found that the trip of the reactor coolant pump occurred as a result of a phase to ground fault in the Y phase conductor (a power cable) for the pump motor. In 2000, this reactor coolant pump experienced a similar trip as a result of the pump motor Y phase Elastimold bushing fault to ground, which likely caused thermal damage to the cable and ultimately led to the cable failure that occurred in the spring of 2012.

With respect to the unexpected actuation of the Zone G relaying system that resulted in the LOOP, the Company determined that during Catawba Unit 1's scheduled outage in 2011, the generator protective relaying was upgraded. The modification (Zone G relay modification) was intended to maximize the reliability of the protective relaying function while minimizing the likelihood of spurious relay actuation. The modification consisted, in part, of

adding a redundant train of protective relays for each function and adding two additional functions. The Zone G relaying system trips the switchyard unit tie breakers in the event of a generator underfrequency, separating the turbine generator from the grid. The modification was supposed to include a blocking logic. This blocking logic was not fully incorporated into the Zone G digital relay upgrades.

The omission of the blocking logic from the relay programming was not discovered during the testing phase of the modification because the testing procedures were based upon a calculation that was generated during the vendor's design portion of the modification rather than upon the original design specifications. Consequently, the programming error propagated through the rest of the implementation phase and was undetected during design, review, approval, implementation, and post-modifiication testing.

As a result of the omission of the blocking logic, when the reactor trip occurred due to the coolant pump trip, the relay mistakenly detected a generator underfrequency and unexpectedly opened, separating the generator from the grid and causing a LOOP.

Catawba Unit 1 was in a forced outage until April 17, 2012, a total of 13 days as result of the above-described events.

The faulty Zone G relay design error was also present in the relay system for Catawba Unit 2. If Unit 2 had been restarted and operated at power, a turbine trip may have resulted in a LOOP on Unit 2. Consequently, Catawba Unit 2's planned outage was extended an additional 10 days, until April 17, 2012, in part to correct the relay sequence design error.

McGuire Unit 2 Outage Extension

The McGuire Unit 2 outage involved not only the refueling of the unit, but also the replacement of the generator stator and high pressure turbine rotor. While the Company had experience with replacing this type of equipment, this was a significant project for McGuire and was one of the largest projects of its kind in Duke's nuclear history. The contract to perform this work was awarded to Siemens USA (Siemens), which manufactured the stator. The outage started on September 15, 2012.

Soon after the outage began, vendor-related human performance issues emerged. Duke and Siemens management repeatedly reminded workers to return to appropriate behaviors to minimize hazards. In a letter to Siemens dated October 4, 2012, Company

management expressed dissatisfaction with Siemens' implementation performance, which included not only injuries and dropped objects, but also issues with foreign material in the generator stator and foreign material exclusion (FME) control issues.

FME controls are developed and utilized to ensure that all tools and personnel entering in a FME area are logged in and checked for loose items, and checked again when exiting the FME area. Tools are checked for loose or missing parts, and workers are checked for loose items, such as coins or pens.

On October 14, 2012, during the course of the replacement of the main generator stator, it was discovered that a 5/16" nut and washer were missing from a tool (known as a "come along") that was used during the stator rebuild. The tool had been inspected and logged before being brought into the FME area. At the time it was discovered that the nut and washer were missing, the generator rotor had already been reinstalled, and the turbine end and exciter end of the generator were being built. Due to the risks associated with leaving the parts in the generator, Company management decided to undertake a search for the nut and washer

by removing the generator rotor to ensure all foreign materials were in fact removed. The nut and washer were never found, but the Company did find metallic drill tailings from initial fabrication and installation, one of which was four inches long, which could have caused significant damage had they not been removed.[1] The search for the nut and washer, removal of the foreign material found, and reinstallation of the turbine rotor extended the outage for an additional 10 days.

On October 17, 2012, the Company again sent Siemens a letter expressing dissatisfaction with Siemens' performance. The Company requested a face to face meeting to discuss a recovery plan for the project.

On October 26, 2012, Siemens began to undertake final generator alignment. In undertaking this activity, it is important that the weight of the generator is evenly distributed on its four corners; otherwise, an unacceptable and unsustainable amount of vibration can result. Siemens recommended performing Frame Foot Loading (FFL)

[1] A loose metallic part left in the main generator (especially the windings or stator core) can result in damage to the windings, fault of the stator, subsequent generator, turbine and reactor trip, the potential for a complicated trip (e.g. a LOOP) due to protective relay actuations, the potential for release of hydrogen from the generator, the risk of explosive gas and fire, catastrophic failure, and personal injury.

using strain gauges to ensure that the weight of the generator was evenly distributed on the four corners of the generator. Although the FFL method is commonly used in the industry, the Company's experience with aligning generators had been to use the step shimming method, which steps down the shim configuration from the four corners of the generator to ensure the load is distributed appropriately. The Company agreed, however, with the use of FFL to accomplish this task.

Alignment using FFL progressed well at first, but early on October 29, 2012, Siemens personnel began to note inconsistent and unexpected readings from the gauges. The Company's review of the FFL data indicated that the data was unpredictable and unreliable. In reviewing the details of the data on various moves made, Duke questioned the adequacy of Siemens' process controls and verification of key data points. Ultimately, the Company stopped the FFL process and resorted to using the manual validation of step shimming, but the poor execution of the FFL resulted in a delay of almost 5 days.

The McGuire Unit 2 outage ended on November 30, 2012, approximately 38 days longer than originally scheduled.

Q. WHAT CONCERNS DID THE PUBLIC STAFF IDENTIFY CONCERNING THESE OUTAGES?

A. The causes and events leading up to the Catawba Unit 1 forced outage and the extensions of the Catawba Unit 2 and McGuire Unit 2 refueling outages led to concerns that the increased costs of fuel necessary for replacement power during some of the outage days in question were attributable, at least in part, to events that could have been prevented by DEC under efficient management. Since the fuel costs incurred to serve DEC's customers and the corresponding EMF proposed in this case would have been lower but for these delays, the Public Staff believes that a portion of these costs should not be charged to ratepayers.

Although the Public Staff understands that the Company had in place oversight processes beyond those typically required for non-safety-related modifications and should have detected the programming error, it believes that omission of the blocking logic from the Zone G protective relaying system, resulting in a LOOP at Catawba 1 and an extension of the Catawba 2 outage could have been avoided under the exercise of efficient management. With respect to the McGuire Unit 2 outage, the Public Staff believes that DEC is ultimately responsible for the performance of all personnel

involved in performing work related to the outage, including contracted vendors tasked with specific projects. Although the Company provided project management oversight to Siemens that identified issues and directed the implementation of corrective actions, the Public Staff also believes that DEC's ratepayers should not be charged rates that include the increased cost of fuel necessary for replacement power due to the outage extension resulting from Siemens' poor performance.

However, notwithstanding the circumstances surrounding the Catawba and McGuire outages, and the delays and increased fuel costs involved, the Public Staff recognizes that reasonable persons with knowledge and experience in nuclear operations can disagree as to the prudence of specific actions or inactions that caused delays and resulted in increased fuel costs during an outage, particularly an outage that included major upgrades to a unit in a nuclear fleet that met the NERC five-year average. Moreover, the Public Staff acknowledges that the Company made efforts to mitigate the effects of the delays at McGuire caused by Siemens' performance and developed recovery plans for the project in conjunction with Siemens, and believes that DEC's decision to remove the rotor to conduct further searches for a potential missing nut and washer were reasonable and prudent under the

circumstances. Likewise, the Company developed corrective action plans for the Catawba LOOP event aimed at preventing future such events. Considering all of these factors, the Public Staff believed it appropriate to engage in settlement discussions with DEC regarding an adjustment to test period fuel costs that would be fair to the Company and to its ratepayers. These discussions resulted in a stipulated adjustment of $5.3 million on a North Carolina retail basis, including interest, of which $4,542,857 represents the cost of replacement power. In addition, the Company agrees to return to ratepayers in a future fuel case, one-half of the net amount it ultimately recovers from Siemens, up to $257,143. The Public Staff believes these provisions represent a fair and reasonable resolution of the issue of the performance of the Company's nuclear plants in this proceeding.

Q. WHAT ABOUT THE OTHER NUCLEAR OUTAGES THAT OCCURRED DURING THE TEST YEAR?

A. Oconee Unit 1 completed a spring 2012 refueling outage which required a five-day extension based on vent valve replacement. Oconee Unit 2 completed a refueling outage in the fall of 2012. However, the Public Staff considers these outages and associated extensions to be within the scope of expected plant operations,

and, therefore, not to warrant any replacement power cost disallowance. Overall, except for Catawba Units 1 and 2 and McGuire Unit 2, the DEC nuclear fleet performed well during the test year as discussed by Duke witness Duncan in his prefiled testimony.

Q. WHAT ARE THE PUBLIC STAFF'S CONCLUSIONS REGARDING THE COMPANY'S PROJECTED FUEL COSTS?

A. Based upon its investigation, the Public Staff has determined that the projected fuel prices set forth in the application were calculated appropriately for this proceeding. The projected cost for fuel and fuel-related costs were affected by a small projected increase in the price of natural gas as evidenced by the Henry Hub projected forward prices. In addition, nuclear fuel costs also increased from the test year. The increases in natural gas and nuclear costs are offset by a slightly lower delivered price of coal, as well as merger related fuel savings and joint dispatch savings. DEC's projected fuel and fuel-related costs are based on a 92.84% nuclear capacity factor, which is what DEC anticipates for the twelve months from September 1, 2013, through August 31, 2014, the period the new rates will be in effect.

Q. DID THE PUBLIC STAFF REVIEW THE CALCULATIONS OF THE VARIOUS FUEL FACTOR COMPONENTS?

A. Yes. The prospective components of the total fuel factor have been calculated in accordance with the requirements of G.S. 62-133.2. The Public Staff has reviewed the calculations of the various fuel factor components and agrees with them.

Q. DID THE PUBLIC STAFF REVIEW THE EMF CALCULATIONS?

A. Yes. Public Staff witness Edwards has reviewed the revised calculation of DEC's revenue overcollection of $51,555,143 set forth in the Stipulation and agrees with it.

Q. WHAT IS THE PUBLIC STAFF'S RECOMMENDATION?

A. The Public Staff recommends approval of the following components and total fuel factors (excluding GRT) documented in Table 1 effective for the twelve months beginning September 1, 2013:

TABLE 1 – Total Proposed Fuel and Fuel-Related Cost Factors Excluding GRT

Rate Class	Base & Prospective Component	EMF Component	Total Fuel Factor
Residential	2.2306 ¢/kWh	(0.0534) ¢/kWh	2.1772 ¢/kWh
General Service/Lighting	2.3566 ¢/kWh	(0.1371) ¢/kWh	2.2195 ¢/kWh
Industrial	2.3980 ¢/kWh	(0.1510) ¢/kWh	2.2470 ¢/kWh

(Excluding Currently Approved Base Fuel Factor and GRT)
(Note Base Fuel Factor = 2.3935¢/kWh as approved in Docket E-7, Sub 989)

Rate Class	Prospective Component	EMF Component	Total Fuel Factor
Residential	(0.1629) ¢/kWh	(0.0534) ¢/kWh	(0.2163) ¢/kWh
General Service/Lighting	(0.0369) ¢/kWh	(0.1371) ¢/kWh	(0.1740) ¢/kWh
Industrial	0.0045 ¢/kWh	(0.1510) ¢/kWh	(0.1465) ¢/kWh

In addition, for comparison with the previously approved rates, the Public Staff submits the following table (Table 2) to summarize the impact of the proposed changes including GRT.

TABLE 2 – Fuel and Fuel Related Cost Factors (Including GRT)
(Note Base Fuel Factor = 2.3935¢/kWh as approved in Docket E-7, Sub 989, and with the application of GRT, this base fuel factor would result in a revenue amount of 2.4762 ¢/kWh.)

With GRT approved in the last Docket E-7, 1002

Rate Class	Prospective Component	EMF Component	Total Fuel Factor
Residential	(0.1770) ¢/kWh	0.0372 ¢/kWh	(0.1398) ¢/kWh
General Service/Lighting	(0.1523) ¢/kWh	0.0334 ¢/kWh	(0.1189) ¢/kWh
Industrial	(0.1387) ¢/kWh	0.0329 ¢/kWh	(0.1058) ¢/kWh

Proposed in this Docket E-7, Sub 1033 (including GRT)

Rate Class	Prospective Component	EMF Component	Total Fuel Factor
Residential	(0.1685) ¢/kWh	(0.0552) ¢/kWh	(0.2237) ¢/kWh
General Service/Lighting	(0.0382) ¢/kWh	(0.1418) ¢/kWh	(0.1800) ¢/kWh
Industrial	0.0047 ¢/kWh	(0.1562) ¢/kWh	(0.1515) ¢/kWh

Summary of Differences Sub 1033 – Sub 1002 (including GRT)

Rate Class	Prospective Component	EMF Component	Total Fuel Factor
Residential	0.0085 ¢/kWh	(0.0924) ¢/kWh	(0.0839) ¢/kWh
General Service/Lighting	0.1141 ¢/kWh	(0.1752) ¢/kWh	(0.0611) ¢/kWh
Industrial	0.1434 ¢/kWh	(0.1891) ¢/kWh	(0.0457) ¢/kWh

Q. DOES THIS COMPLETE YOUR TESTIMONY?

A. Yes, it does.

APPENDIX A

KENNIE D. ELLIS

I am a graduate of North Carolina State University with a Bachelor of Science Degree in Engineering with a concentration in nuclear power.

I began my employment with the Public Staff Electric Division in May of 2003. While with the Electric Division, my primary responsibilities have been fuel factor computation and inventory, generation adequacy, small power and utility generator Certificates of Public Convenience and Necessity, investigation of inquiries and complaints, and management of various tracking databases. I have also worked in the areas of rate analysis and design, revenue analysis and design, nuclear decommissioning, power plant performance, utility service rules and regulations, cost of service, analysis and review of conservation and load management programs, least-cost integrated resource planning, avoided cost, electromagnetic fields, electrical safety, customer growth analysis and validation, unbundling of service, review of wheeling and rates and depreciation analysis.

From October of 1984 until April of 2002, I was employed by Carolina Power & Light Company (Progress Energy Carolinas) primarily at the Shearon Harris Nuclear Power Plant in various capacities including Regulatory Specialist, Operating Experience Coordinator, Corrective Action Program Specialist, Pressure Test Engineer, and Health Physics Technician.

From 1978 until 1984, I was employed by the United States Navy in the Naval Nuclear Power Program. I was an instructor at the Navy's Nuclear Power Program S5G prototype providing instruction in the areas of Chemistry, Radiochemistry, Radiation Protection and Monitoring, Mechanical Systems, Mechanical Watchstanding, and Integrated Plant Operations. I also served aboard the SSBN-644 (USS Lewis & Clark) as Leading Engineering Laboratory Technician. I was qualified Engine Room Supervisor and all subordinate watchstations.

I have previously filed testimony before the Commission in new certificate applications for generating facilities, fuel proceedings, general rate cases, renewable energy portfolio standards recovery proceedings, and participated in several special investigations.

DUKE ENERGY CAROLINAS, LLC
DOCKET NO. E-7, SUB 1033

TESTIMONY OF JAMES G. HOARD
ON BEHALF OF THE PUBLIC STAFF
NORTH CAROLINA UTILITIES COMMISSION

June 3, 2013

Q. PLEASE STATE FOR THE RECORD YOUR NAME, ADDRESS, AND PRESENT POSITION.

My name is James G. Hoard. My business address is 430 North Salisbury Street, Raleigh, North Carolina. I am the Director of the Public Staff – Accounting Division.

Q. WHAT ARE YOUR DUTIES?

A. I am responsible for the organization, planning, and performance of the work of the Public Staff Accounting Division, which includes, among other things, the following activities: (1) the examination and analysis of testimony, exhibits, books and records, and other data presented by utilities and other parties involved in Commission proceedings; and (2) the preparation and presentation to the Commission of testimony, exhibits, and other documents in those proceedings.

Q. PLEASE DISCUSS YOUR EDUCATION AND EXPERIENCE.

A. A summary of my education and experience is attached as Appendix A.

Q, WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A. The purpose of my testimony is provide comments on the merger-related fuel savings reported by Duke Energy Carolinas, LLC (DE Carolinas) in its monthly fuel reports (MFRs) filed with the Commission and explain how those fuel savings have been reflected in the Company's actual total fuel and fuel-related costs in this proceeding during the test period ended December 31, 2012.

Q. PLEASE EXPLAIN THE REQUIREMENTS THAT PERTAIN TO THE TRACKING OF MERGER-RELATED FUEL SAVINGS.

A. Pursuant to the Commission's June 29, 2012 Order, in Docket No. E-2, Sub 998 and E-7, Sub 986 (Merger Order), the North Carolina retail customers of DE Carolinas and DE Progress (Utilities) have been guaranteed receipt of their allocable share of $650 million[1] in fuel and fuel-related cost savings resulting from the merger over a five-year period through the annual fuel charge proceedings of the Utilities. The five-year period may be extended by 18 months if ratepayers have not received their allocable share of the guaranteed savings at the end of the five-year period and the decline in natural gas prices has resulted in the delivery of less coal to certain DE Carolinas coal-fired plants. In addition, DE Carolinas and DE Progress are required to file monthly reports of tracked fuel savings with their MFRs filed under Commission Rule R8-52. These

[1] A settlement agreement approved by the Commission on December 3, 2012, in Docket No.E-7, Sub 1017, requires an additional $25 million in fuel and fuel-related savings for North Carolina retail ratepayers. The Company has grossed-up the $25 million additional guarantee amount to $36.8 million to include amounts due to South Carolina retail ratepayers and wholesale customers in both states. The total amount of guaranteed savings is now $686.8 million.

reports of tracked fuel savings must show fuel savings broken down by the following categories: (a) total system, (b) DE Carolinas, (c) DE Carolinas North Carolina retail, (d) DE Progress, and (e) DE Progress North Carolina retail. If at the end of the guaranteed savings period the North Carolina retail customers of the Utilities have not received their allocable shares of the guaranteed fuel savings, the remaining amount shall be reflected as an adjustment in the first fuel cost proceedings of DE Carolinas and DE Progress following the end of the guaranteed savings period.

Q. HAVE DE CAROLINAS AND DE PROGRESS FILED THE TRACKED FUEL SAVINGS REPORTS AS REQUIRED BY THE MERGER ORDER?

A. Yes. The Utilities filed these reports as Schedule 11 of their respective MFRs. Through December 31, 2012, the Utilities have reported cumulative combined fuel savings of $51,869,687.

Q. PLEASE DESCRIBE THE FUEL SAVINGS THAT THE UTILITIES HAVE ACHIEVED THROUGH THE END OF THE TEST PERIOD AND HOW THEY ARE ACCOUNTED FOR AND REFLECTED IN THE MONTHLY FUEL REPORTS.

Presented below is a chart that shows details of the fuel savings reported by the Utilities.

TABLE 1

Item	DE Carolinas	DE Progress	Combined
	(a)	(b)	(c)
Joint Dispatch	$11,328,001	$2,820,299	$14,148,300
Coal Blending	23,524,131		23,524,131
Coal Procurement	1,624,630	2,475,010	4,099,640
Coal Transportation	2,181,451	1,805,939	3,987,390
Reagent Procurement & Transportation	450,300	689,849	1,140,149
Natural Gas Supply & Capacity	4,754,353		4,754,353
Avoided Trading Desk	215,724		215,724
Total	$44,078,590	$7,791,097	$51,869,687

The combined amounts shown in column (c) above are the sum of the savings that originated in each utility. These fuel savings are reflected in the actual expenses reported by the originating utility; the amount of the combined fuel savings is allocated between DE Carolinas and DE Progress each month based on the Utilities' relative mWh generation. As a result, an accounting entry has been recorded each month since the merger closed to transfer savings that exceed the allocated share of the originating utility to the other utility. TABLE 2 below shows the amount of fuel savings that were transferred by DE Carolinas to DE Progress during the test period.

TABLE 2

Item	DE Carolinas Gross Amount	DE Carolinas Allocated Share	DE Carolinas Transferred
	(a)	(b)	(c)
Joint Dispatch	$11,328,001	$8,316,083	$3,011,918
Coal Blending	23,524,131	17,514,516	6,009,615
Coal Procurement	1,624,630	2,399,044	(774,414)
Coal Transportation	2,181,451	2,165,421	16,030
Reagent Procurement & Transportation	450,300	560,574	(110,274)
Natural Gas Supply & Capacity	4,754,353	2,807,572	1,946,781
Avoided Trading Desk	215,724	127,539	88,185
Total	$44,078,590	$33,890,749	$10,187,841

The total amount shown in column (c) is the difference between the gross amount originating with DE Carolinas and its allocated share of combined savings. The Joint Dispatch amount shown above is composed of the savings transferred to DE Progress of $3,558,502 that is included in Schedule 3 of the MFRs as Purchased Power, less the savings transferred from DE Progress of $546,584 that is included as Intersystem Sales. The increase in DE Carolinas' Purchased Power (debit) represents the DE Progress portion of Joint Dispatch savings that DE Carolinas realized on Joint Dispatch transactions, including energy transfers provided by DE Progress. The increase in DE Carolinas' Intersystem Sales (credit) represents the DE Carolinas' portion of Joint Dispatch savings that DE Progress realized on Joint Dispatch transactions, including energy transfers provided by DE Carolinas.

The Coal Blending, Coal Procurement, and Coal Transportation fuel savings amounts transferred between DE Carolinas and DE Progress are

reflected in the Steam Generation section, Account 0501016, of MFR Schedule 2, page 1 of 2. All of the Coal Blending savings originate in DE Carolinas, because they result from the implementation of coal blending at the DE Carolinas coal-fired plants. DE Progress, which implemented coal blending at its coal-fired plants in 2006, already has considerable experience with coal blending. Because DE Progress fully implemented coal blending before the merger, there are no merger-related coal blending savings for the DE Progress coal-fired plants. DE Carolinas, however, began some coal blending activities at its Marshall Steam Plant prior to the merger, so the Utilities have excluded a portion of these savings from the computation of merger-related Coal Blending savings. The Coal Procurement and Coal Transportation savings result from renegotiated and new contracts that the Utilities have entered into with coal and coal transportation services providers, and thus savings originate in both Utilities.

Similarly, the Reagent Procurement and Transportation savings amounts result from renegotiated and new contracts that the Utilities have entered into with reagent and reagent transportation services providers. The net Reagent Procurement and Transportation savings amount transferred to DE Carolinas of $110,274 is reflected as a credit to Account 502160 – Reagent Procurement Merger Savings on Schedule 2, page 1 of 2, of the MFR. All of the savings related to coal and reagent procurement and transportation reported through December 31, 2012, result from contract

negotiations and renegotiations with fuel supply and transportation vendors that were premised upon the merger, but undertaken by the Utilities prior to its closing.

The Natural Gas Supply and Capacity savings amount is composed of savings on purchases of gas supply, pipeline capacity costs, and purchases of oil. MFR Schedule 2, Account 0547123 reflects $1,946,781 for the transfer of savings from DE Carolinas to DE Progress.

The Avoided Trading Desk savings amount is a non-fuel and fuel-related cost item that is reflected on MFR, Schedule 2, page 2 of 2, in Account 0547127. Due to the merger, only one natural gas trading desk is needed by the Utilities. As a result, the Utilities have avoided the personnel and related costs for a second trading desk that would have been needed had the Utilities not merged. The Avoided Trading Desk savings have been counted towards the fuel savings guarantee, but do not flow through the fuel clause.

Q. HAVE ANY ADDITIONAL FUEL SAVINGS TRANSFERS BEEN REFLECTED BY THE COMPANY IN THIS PROCEEDING?

A. Yes. Company witness Smith has reflected an adjustment to her Experience Modification Factor (EMF) computation for pre-merger savings that DE Carolinas believes should be shared with DE Progress. DE Carolinas has not yet reflected the transfer of these savings from DE Carolinas to DE Progress in fuel and fuel-related expenses. The North

Carolina retail amount of these savings, which total $2,282,619,[2] is reflected on Smith Exhibit 3, pages 1 through 4, and decreases the over-collection that Company witness Smith has reflected in the EMF computation for the test period. The computation of this amount is shown on Smith Workpaper 18. Company witness Smith states in her testimony, at page 12, lines 18-22, that "[U]pon approval by the Commission to adjust the over-collection for calendar year 2012 to reflect the sharing of merger fuel related savings achieved during the period prior to the merger close, the Company will make the appropriate entries on its books to reflect the sharing of the savings."

Both Utilities benefit from the merger-related fuel savings, and the Company's proposal to share pre-merger fuel savings between the two Utilities is consistent with the treatment of post-merger fuel savings. Consequently, the Public Staff does not oppose this entry as long as DE Progress reflects the full offsetting amount in its upcoming fuel proceeding. The test period for DE Progress in its upcoming fuel proceeding begins April 1, 2012, so some of the pre-merger period pre-dates the DE Progress test period. To ensure that ratepayers receive the full benefit of the savings, the offsetting entry made in the DE Progress proceeding should include savings for the January through March 2012, period that occurs prior to the beginning of the fuel proceeding test period.

[2] The total system DE Carolinas amount of transferred savings is $3,348,031.

Q. DO YOU HAVE ANY COMMENTS ON THE AMOUNTS OF FUEL SAVINGS THAT HAVE BEEN REPORTED BY THE COMPANIES?

A. The Public Staff has reviewed the tracked fuel savings computations but has not yet confirmed the validity of the amounts. The Public Staff will continue to review these fuel savings with due diligence. Should the Commission approve adjustments to the cumulative amount of reported fuel savings in a future proceeding, the Public Staff recommends that the accounting and ratemaking treatment of the adjustments be addressed at that time.

Q. DO YOU HAVE ANY COMMENTS ON THE COMPANY'S ACCOUNTING PRACTICES REGARDING THE FUEL SAVINGS?

A. Yes. I am concerned about the numerous true-ups that appeared in the fuel savings calculations during the test period. These true-ups resulted from a variety of computational refinements and were not limited to the month immediately following the accounting month when the activity occurs. For example, an accounting month may have contained fuel savings adjustments for several prior periods, each of which had to be allocated between the Utilities based on that prior period's mWh resource generation allocation factors. As a result, the fuel savings recorded during an accounting month had several layers, an allocation between the Utilities for the current accounting month and allocations for each prior period. The Company has investigated the cause of the prior period true-up adjustments and implemented changes in April 2013 that it believes

should reduce the number and amount of the adjustments. My understanding, however, is that the Utilities will continue to have minimal Joint Dispatch true-ups each month due to a pumped storage timing issue.

Q. DOES THIS COMPLETE YOUR TESTIMONY?

A. Yes, it does.

JAMES G. HOARD

Qualifications and Experience

I graduated from the University of Rhode Island in 1979 with a Bachelor of Science degree in Business Administration. Subsequent to graduation I have completed various economics, statistics, and regulatory courses. I am a Certified Public Accountant and a member of the American Institute of Certified Public Accountants.

I joined the Public Staff as a Staff Accountant in October, 1979, and was promoted to Supervisor of the Electric Section in January 1984. At the end of 1985, I assumed the position of manager in a small regional certified public accounting firm. In September 1987 I rejoined the Public Staff. On August 1, 2000, I was promoted to Assistant Director of the Accounting Division, and on October 2, 2012, I was promoted to Director of the Accounting Division. In my present position, I am responsible for the organization, planning, and performance of the work of the Public Staff Accounting Division, which includes, among other things, the following activities: (1) the examination and analysis of testimony, exhibits, books and records, and other data presented by utilities and other parties involved in Commission proceedings; and (2) the preparation and presentation to the Commission of testimony, exhibits, and other documents in those proceedings. I have testified before the Commission on many occasions addressing a wide range of topics and issues.

DUKE ENERGY CAROLINAS, LLC
DOCKET NO. E-7, SUB 1033

TESTIMONY OF RANDY T. EDWARDS
ON BEHALF OF THE PUBLIC STAFF

NORTH CAROLINA UTILITIES COMMISSION

June 3, 2013

Q. WILL YOU STATE FOR THE RECORD YOUR NAME, ADDRESS, AND PRESENT POSITION?

A. My name is Randy T. Edwards. My business address is 430 North Salisbury Street, Raleigh, North Carolina. I am a Staff Accountant with the Accounting Division of the Public Staff – North Carolina Utilities Commission.

Q. HOW LONG HAVE YOU BEEN EMPLOYED BY THE PUBLIC STAFF?

A. I have been employed by the Public Staff since October 1998.

Q. WHAT ARE YOUR DUTIES?

A. I am responsible for the performance 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.

Q. WOULD YOU BRIEFLY STATE YOUR EDUCATIONAL BACKGROUND AND EXPERIENCE?

A. A summary of my education and experience is set forth in Appendix A to my testimony.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A. The purpose of my testimony is to present the results of the Public Staff's investigation of the Experience Modification Factor (EMF) billing factors proposed by Duke Energy Carolinas, LLC (DEC or the Company), in this proceeding. The EMF billing factors are utilized to "true-up" the recovery of fuel and fuel-related costs incurred during the test year. DEC's test year in this fuel and fuel-related cost proceeding is the twelve months ended December 31, 2012.

Q. DID DEC INCLUDE IN THE EMF CALCULATION ACTUAL FUEL AND FUEL-RELATED COSTS AND REVENUES INCURRRED FOR THE PERIOD JANUARY THROUGH APRIL 2013, AS PERMITTED BY G.S. 62-133.2(d)?

A. No. The Company notified the Public Staff that it has decided not to file an update to include January through April 2013 fuel and fuel-related costs and revenues in this proceeding.

Q. WHAT EMF INCREMENT/(DECREMENT) BILLING FACTORS IS DEC REQUESTING IN THIS PROCEEDING?

A. In its application filed on March 7, 2013, the Company proposed an overall EMF decrement billing factor of (0.0852) ¢/kWh based on its calculated and reported North Carolina retail fuel and fuel-related cost overrecovery for the test year of $47,306,484. This factor was calculated by dividing the fuel and fuel-related cost overrecovery by DEC's test year North Carolina retail sales, adjusted for customer growth and weather, of 55,534,610 MWH. The Company's proposed EMF decrement billing factors for each North Carolina retail customer class, excluding gross receipts tax (GRT) and the North Carolina regulatory fee, are as follows:

Customer Class	EMF Decrement Factors
Residential	(0.0382) ¢/kWh
Commercial	(0.1099) ¢/kWh
Industrial	(0.1216) ¢/kWh

These EMF decrement billing factors are based on DEC's calculated and reported North Carolina retail fuel and fuel-related cost overrecoveries for the test year of $8,086,940 for the

residential customer class, $24,292,108 for the commercial customer class, and $14,927,436 for the industrial customer class. The factors were calculated by dividing the fuel and fuel-related cost overrecoveries by DEC's test year North Carolina retail sales, adjusted for customer growth and weather, of 21,143,695 MWH for the residential customer class, 22,112,646 MWH for the commercial customer class, and 12,278,269 MWH for the industrial customer class. The Company's proposed EMF decrement billing factor calculations are presented on Company witness Ms. Smith's Exhibit 3, pages 1 through 4.

Q. DID THE COMPANY INCLUDE ANY ADJUSTMENTS IN THE PROPOSED EMF DECREMENT BILLING FACTORS?

A. Yes. As shown on Smith Exhibit 3, pages 1 through 4, the EMF decrement billing factors include a correction for renewable purchased power and an adjustment for merger savings to be shared with Progress Energy Carolinas, Inc., now Duke Energy Progress, Inc. These adjustments are discussed on pages 12 and 13 of Ms. Smith's direct testimony.

Q. IS INTEREST APPLICABLE TO THE TEST YEAR OVERRECOVERIES?

A. Yes. Pursuant to G.S. 62-130(e) and Commission Rule R8-55(d)(6),

any overcollection of fuel and fuel-related costs to be refunded to DEC's customers through operation of the EMF rider must include interest, at such rate as the Commission may determine to be just and reasonable, not to exceed ten percent (10%) per annum.

In the Company's application filed on March 7, 2013, DEC proposed an overall EMF interest decrement billing factor of (0.0142) ¢/kWh based on $7,884,411 interest calculated on the overall $47,306,484 overrecovery of fuel and fuel-related costs. This factor was calculated by dividing the $7,884,411 by DEC's test year North Carolina retail sales, adjusted for customer growth and weather, of 55,534,610 MWH. The Company's proposed EMF interest amounts for the customer classes are: $1,347,823 for the residential customer class, $4,048,683 for the commercial customer class, and $2,487,905 for the industrial customer class. These interest amounts were divided by Duke's test year North Carolina retail sales, adjusted for customer growth and weather, of 21,143,695 MWH for the residential customer class, 22,112,646 MWH for the commercial customer class, and 12,278,269 MWH for the industrial customer class resulting in the following EMF interest decrement billing factors:

Customer Class	EMF Interest Decrement Factors
Residential	(0.0064) ¢/kWh
Commercial	(0.0183) ¢/kWh
Industrial	(0.0203) ¢/kWh

The EMF interest decrement billing factor calculations are also presented on Ms. Smith's Exhibit 3, pages 1 through 4.

Q. PLEASE DESCRIBE THE PUBLIC STAFF'S INVESTIGATION OF THE EMF DECREMENT BILLING FACTORS.

A. The Public Staff's investigation of the proposed EMF decrement billing factors consisted of procedures intended to enable the Public Staff to evaluate whether the Company properly determined its per books fuel and fuel-related costs and revenues during the test period. These procedures included a review of prior Commission orders, the Company's application in this proceeding, Monthly Fuel Reports filed with the Commission, and other Company data provided to the Public Staff. Additionally, the investigation included review of certain specific types of expenditures impacting the Company's test year fuel and fuel-related costs, including nuclear fuel disposal costs and payments to non-utility generators. Also, the Public Staff's investigation included review of source documentation of fuel costs for certain selected Company generation resources.

Performing the Public Staff's investigation required the review of numerous responses to written and verbal data requests, as well as site visits to the Company's corporate offices.

Q. DID YOU MAKE ANY ADJUSTMENTS TO THE COMPANY'S PROPOSED EMF DECREMENT BILLING FACTORS?

A. Yes. Pursuant to the Joint Agreement and Stipulation of Settlement (Stipulation) between the Public Staff and the Company, I have increased the Company's proposed North Carolina retail test year overrecovery amount by $4,542,857. This amount represents replacement power costs the Company incurred related to the performance of its nuclear plants during the test year. Public Staff witness Ellis discusses the reasons for the adjustment in his testimony.

Q. ARE THERE ANY OTHER ADUSTMENTS THAT SHOULD BE MADE THAT IMPACT THE COMPANY'S PROPOSED EMF DECREMENT BILLING FACTORS?

A. Yes. The Public Staff has recently learned that the Company's North Carolina retail fuel and fuel-related costs should be increased by $294,198 for purchases from qualifying facilities. According to the Company, $294,198 of fuel and fuel-related costs was inadvertently omitted from the fuel and fuel-related costs included in

this proceeding when DEC filed its March 6, 2013 application. This adjustment is discussed in the Stipulation.

It should be noted that the Public Staff agreed to allow the Company to include the $294,198 in this proceeding because it was incurred in the fuel proceeding test year. However, because the adjustment was included so late in the proceeding and because the Public Staff has not had time to audit it, the Company and Public Staff agreed that the $294,198 would be reviewed in next year's fuel proceeding.

Q. HOW DO THESE TWO ADJUSTMENTS IMPACT THE EMF DECREMENT BILLING FACTORS BEING PROPOSED BY DEC IN THIS FUEL PROCEEDING?

A. The net of the two adjustments increased the overall overrecovery of North Carolina retail fuel and fuel-related costs to $51,555,143, producing an overall EMF decrement billing factor of (0.0928) ¢/kWh. This factor was calculated by dividing the fuel and fuel-related cost overrecovery by DEC's test year North Carolina retail sales, adjusted for customer growth and weather, of 55,534,610 MWH. The adjustment increased the overrecovery for the residential customer class to $9,676,332, the commercial customer class to $25,992,843, and the industrial customer class to $15,885,968. The adjusted EMF decrement billing factors were calculated by dividing the adjusted fuel and fuel-related cost

overrecoveries by Duke's test year North Carolina retail sales, adjusted for customer growth and weather, of 21,143,695 MWH for the residential customer class, 22,112,646 MWH for the commercial customer class, and 12,278,269 MWH for the industrial class, resulting in the following adjusted EMF decrement billing factors.

Customer Class	Adjusted EMF Decrement Factors
Residential	(0.0458) ¢/kWh
Commercial	(0.1175) ¢/kWh
Industrial	(0.1294) ¢/kWh

The calculations for the adjusted EMF decrement billing factors are shown on Stipulation Exhibit 2, Schedules 1 through 4, attached to the Stipulation.

Q. DID THESE ADJUSTMENTS INCREASE THE EMF INTEREST DECREMENT BILLING FACTORS?

A. Yes. The net of the two adjustments increased the overall interest amount to $8,592,520, producing an overall EMF interest decrement of (0.0155) ¢/kWh. The adjusted interest for the residential customer class is $1,612,721, for the commercial customer class it is $4,332,139, and for the industrial customer class it is $2,647,660. The adjusted EMF interest decrement billing factors were calculated by dividing the adjusted interest amounts by Duke's test

year North Carolina retail sales, adjusted for customer growth and weather, of 21,143,695 MWH for the residential customer class, 22,112,646 MWH for the commercial customer class, and 12,278,269 MWH for the industrial class, resulting in the following adjusted EMF interest decrement billing factors.

Customer Class	Adjusted EMF Interest Decrement Factors
Residential	(0.0076) ¢/kWh
Commercial	(0.0196) ¢/kWh
Industrial	(0.0216) ¢/kWh

The calculations for the adjusted EMF interest decrement billing factors are shown on Stipulation Exhibit 2, Schedules 1 through 4, attached to the Stipulation.

Q. WHAT EMF DECREMENT BILLING FACTORS DOES THE PUBLIC STAFF RECOMMEND?

A. The Public Staff recommends approval of the following adjusted EMF decrement billing factors as presented in the Stipulation.

Customer Class	Adjusted EMF Decrement Factors
Residential	(0.0458) ¢/kWh
Commercial	(0.1175) ¢/kWh
Industrial	(0.1294) ¢/kWh

The Public Staff also recommends approval of the following adjusted EMF interest decrement billing factors as presented in the Stipulation.

Customer Class	Adjusted EMF Interest Decrement Factors
Residential	(0.0076) ¢/kWh
Commercial	(0.0196) ¢/kWh
Industrial	(0.0216) ¢/kWh

I have provided this information to Public Staff witness Kennie Ellis for incorporation into his recommended final fuel factor and testimony.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes, it does.

Appendix A

Randy T. Edwards

I am a graduate of Barton College (formerly Atlantic Christian College), at Wilson, N. C., with a Bachelor of Science degree in Accounting. Prior to joining the Public Staff, I was employed by Carolina Power & Light Company. My duties involved supervising accounting activities, preparing financial reports, and marketing energy services. I joined the Public Staff as a Staff Accountant in October 1998.

I am responsible for analyzing testimony, exhibits and other data presented by parties before this Commission. I have the further responsibility of performing examinations of books and records of utilities involved in proceedings before the Commission, and summarizing the results into testimony and exhibits for presentation to the Commission.

Since joining the Public Staff, I have filed testimony or affidavits in fuel rate cases of Duke Power, PEC, and DNCP, as well as in water and sewer general rate cases.

I have also been involved in several other matters that have come

before this Commission, including the review and investigation of the electric utilities' funding practices for nuclear decommissioning cost (Docket No. E-100, Sub 56), the Nantahala Power & Light Purchased Power Cost Rider (Docket No. E-7, Sub 717), and several other applications related to electric utilities.