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PLACE: Dobbs Building, Raleigh, North Carolina

DATE: March 15, 2011

DOCKET NO.: E-7, Sub 819

TIME IN SESSION: 2:30 P.M. TO 5:03 P.M.

BEFORE: Chairman Edward S. Finley, Jr., Presiding
Commissioner Lucy T. Allen
Commissioner Bryan E. Beatty
Commissioner ToNola D. Brown-Bland
Commissioner William T. Culpepper, III
Commissioner Lorenzo L. Joyner

IN THE MATTER OF:

Duke Energy Carolinas, LLC Application for Approval of Decision to Incur Nuclear Generation Project Development Costs.

VOLUME 2

A P P E A R A N C E S :

FOR DUKE ENERGY CAROLINAS:

Robert W. Kaylor
Law Office of Robert W. Kaylor, P.A.
3700 Glenwood Avenue, Suite 330
Raleigh, North Carolina 27612

Timika Shafeek-Horton
Duke Energy
EC03T/P.O. Box 1006
Charlotte, North Carolina 28201-1006

Charles A. Castle
Duke Energy
EC03T/P.O. Box 1006
Charlotte, North Carolina 28201-1006

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FOR NCWARN, ET AL.:

John Runkle
P.O. Box 3793
Chapel Hill, North Carolina 27515

FOR THE USING AND CONSUMING PUBLIC:

Gisele Rankin
Public Staff
North Carolina Utilities Commission
4326 Mail Service Center
Raleigh, North Carolina 27699-4326

Len Green
Margaret Force
NC Department of Justice
P.O. Box 629
Raleigh, North Carolina 27602-0629

T A B L E O F C O N T E N T S

E X H I B I T S

P R O C E E D I N G S

CHAIRMAN FINLEY: Ladies and gentlemen, if you'll have a seat, we'll resume the hearing. Mr. Runkle, would you like to have your cross examination exhibits admitted?

MR. RUNKLE: Yes, sir. I would.

CHAIRMAN FINLEY: All right. Without objection, Public Advocacy Groups' Rogers Cross Examination Exhibits 1 and 2 are admitted into evidence.

(PUBLIC ADVOCACY GROUPS' ROGERS CROSS EXAMINATION EXHIBIT NOS. 1 AND 2 WERE ADMITTED INTO EVIDENCE.)

MR. RUNKLE: And if they haven't been admitted into evidence, Mr. Bradford's exhibits. I think they were, but --

CHAIRMAN FINLEY: All right. To the extent they were not, we will admit those.

MS. SHAFEEK-HORTON: Duke Energy Carolinas calls Dhiaa Jamil.

(WHEREUPON, DHIAA JAMIL WAS CALLED AS A WITNESS, DULY SWORN, AND TESTIFIED AS FOLLOWS:)

DIRECT EXAMINATION BY MS. SHAFEEK-HORTON:

Q. Please state your name for the record.

A. Dhiaa Jamil.

Q. And by whom are you employed and what is your title?

A. I am employed by Duke Energy, and my title is the Chief Generation Officer and Chief Nuclear Officer.

Q. Did you cause to be filed in this docket 12 pages of direct testimony and six pages of rebuttal testimony?

A. Yes, I did.

Q. If I were to ask you the same questions today while you are on the stand that are asked in your testimony, would your answers be the same?

A. Yes.

MS. SHAFEEK-HORTON: I would ask that the testimony, as prefiled, be entered into the record as given orally from the stand.

CHAIRMAN FINLEY: Mr. Jamil's direct and rebuttal testimony shall be copied into the record as if given from the stand.

(THE PREFILED DIRECT AND REBUTTAL TESTIMONY OF DHIAA JAMIL WILL BE COPIED INTO THE RECORD AS IF GIVEN ORALLY FROM THE WITNESS STAND.)

I. INTRODUCTION AND PURPOSE

Q. PLEASE STATE YOUR NAME, ADDRESS, AND POSITION.

A. My name is Dhiaa M. Jamil. My business address is 526 South Church Street, Charlotte, North Carolina. I am Group Executive and Chief Generation Officer for Duke Energy Corporation ("Duke Energy") and Chief Nuclear Officer ("CNO") for Duke Energy Carolinas, LLC ("Duke Energy Carolinas" or the "Company").

Q. WHAT ARE YOUR PRESENT RESPONSIBILITIES AT DUKE ENERGY CAROLINAS?

A. As Group Executive and Chief Generation Officer and Chief Nuclear Officer, I am responsible for the safe, reliable, and efficient operation of the Company's nuclear, fossil and hydro fleets.

Q. PLEASE SUMMARIZE YOUR EDUCATIONAL BACKGROUND AND PROFESSIONAL EXPERIENCE.

A. I graduated from the University of North Carolina at Charlotte with a Bachelor of Science degree in electrical engineering. I am a professional engineer in North Carolina and South Carolina and have completed the Institute of Nuclear Power Operations' ("INPO") senior nuclear plant management course and received my Duke Energy technical nuclear certification. I served as a senior member of the Institute of Electrical & Electronics Engineers ("IEEE") and as a member of the Council of the National Academy for Nuclear Training. I was also a member of Dominion Energy Management Safety Review Advisory Committee, the Tennessee Valley Authority Nuclear Safety Review Board, and currently serve on the INPO Executive Advisory Group and the Nuclear Strategic Initiative Advisory Committee of the Nuclear Energy Institute. I am currently the chairman of the Energy Production and Infrastructure Center ("EPIC") Advisory Board for the University of North Carolina at Charlotte.

I began my career at Duke Energy Carolinas in 1981 as a design engineer in the design engineering department. After a series of promotions, I was named Oconee Nuclear Station Electrical Systems Engineering Supervisor in 1989; Electrical Engineering Manager in 1994; Maintenance Superintendent, McGuire Nuclear Station, in 1997; Station Manager of McGuire in September 1999; and Vice President of McGuire Nuclear Site in September 2002. I was named Vice President of Catawba Nuclear Station in July 2003, with responsibility for all aspects of the safe and efficient operation of the nuclear site. In December 2006, I was named Senior Vice President of Nuclear Support, where I was responsible for plant support, major projects and fuel management for the nuclear fleet. I was also responsible for regulatory support, nuclear oversight and safety analysis functions. I was named Group Executive and Chief Nuclear Officer in January 2008. In July 2009, I was named to my current role as Group Executive and Chief Generation Officer for Duke Energy and I continue in the role of Chief Nuclear Officer for Duke Energy Carolinas.

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

A. The purpose of my testimony is to support Duke Energy Carolinas' Amended Application for Approval of Decision to Incur Nuclear Generation Project Development Costs by discussing the Company's development work performed and costs incurred to date for the William States Lee, III Nuclear Station to be located in Cherokee County, South Carolina ("Lee Nuclear Station"), as well as to describe the completed and anticipated development work and related costs that have been and will be incurred during the period January 1, 2010, through December 31, 2013. In addition, I provide a brief overview of the Company's current nuclear generation portfolio and operational performance.

II. DUKE ENERGY CAROLINAS' NUCLEAR GENERATION

Q. PLEASE DESCRIBE DUKE ENERGY CAROLINAS' EXISTING NUCLEAR GENERATION PORTFOLIO.

A. Duke Energy Carolinas' nuclear generation portfolio consists of approximately 5,200 megawatts ("MWs") of generating capacity, made up as follows:

Oconee Nuclear Station - 2,538 MWs

McGuire Nuclear Station - 2,200 MWs

Catawba Nuclear Station - 435 MWs (Duke Energy Carolinas' 19.2% ownership of the Catawba Nuclear Plant)

Oconee Nuclear Station, located in Oconee County, South Carolina began commercial operation in 1973 and was the first nuclear station designed, built and operated by the Company. It has the distinction of being the second nuclear station in the country to have its license, originally issued for 40 years, renewed for an additional 20 years by the U.S. Nuclear Regulatory Commission ("NRC").

McGuire Nuclear Station, located in Mecklenburg County, North Carolina began commercial operation in 1981 and Catawba Nuclear Station, located on Lake Wylie in York County, South Carolina began commercial operation in 1985. In 2003, the NRC renewed the licenses for McGuire and Catawba for an additional 20 years each. The Catawba Nuclear Station is jointly owned with North Carolina Municipal Power Agency Number One, North Carolina Electric Membership Corporation ("NCEMC"), and Piedmont Municipal Power Agency. On September 30, 2008, the Company and NCEMC closed on the purchase of Saluda River Electric Cooperative, Inc.'s ownership interest in Unit 1 of Catawba Nuclear Station. Following the close of the purchase, Duke Energy Carolinas' ownership interest in the Catawba Nuclear Station increased from 12.5% to 19.2%.

Q. PLEASE DISCUSS DUKE ENERGY CAROLINAS' NUCLEAR OPERATIONAL PERFORMANCE.

A. The Company continues to be a leader in nuclear performance, but, is not alone in its excellence. The nuclear industry as a whole has been making great strides in improving operating performance. This improvement is reflected in benchmarking data, such as the North American Electric Reliability Council's ("NERC") Generating Availability Report, which is considered by the Commission in establishing fuel factors in proceedings such as this. This effort further supports the Company's commitment to providing safe, clean, reliable and cost effective electricity to our customers.

As in years past, the Company's nuclear plants have operated very well this year. Through September 30, 2010, the Company's seven nuclear units have operated at a system average capacity factor of 96.25%, which is on track to be among the highest capacity factors the Company has experienced. In addition, when its outage began on September 18, 2010, Catawba's Unit 2 completed a 517 day breaker-to-breaker run, the second longest run for the Company's fleet; and on April

24, 2010, Oconee's Unit 2 completed a 497 day breaker-to-breaker run when it shut down for refueling. The system average nuclear capacity factor has been above 90% for over ten consecutive years. This demonstrated operational skill and experience will serve the Company well during the development and operation of the Lee Nuclear Station.

III. LEE NUCLEAR STATION DEVELOPMENT ACTIVITIES

Q. PLEASE DESCRIBE THE PROPOSED LEE NUCLEAR STATION.

A. As I previously testified in this Docket, the Lee Nuclear Station would be constructed in Cherokee County, South Carolina at the Company's former Cherokee Nuclear Station site. Duke Energy Carolinas has selected the Westinghouse AP1000 reactor technology, which is an advanced nuclear power generation technology that uses a simplified design and passive features such as the force of gravity and natural circulation to enhance plant safety and operations, and reduce construction costs. The plant utilizes the best components of currently deployed technologies, providing a high confidence that the facility will operate at high levels of safety and reliability. Each unit has an anticipated generation capacity of 1,117 MW, and the projected annual capacity factor of the Lee Nuclear Station is expected to exceed 90% based upon current Duke Energy Carolinas' nuclear fleet performance.

Q. WHAT IS THE STATUS OF THE NRC'S CERTIFICATION OF THE AP1000 REACTOR DESIGN?

A. The AP1000 design was certified by the NRC in 2005. Subsequently, Westinghouse filed for an amendment to the design certification to address various design changes. These changes included coordination with Duke Energy and other AP1000 combined license applicants to close out a number of items identified in the original design certification as requiring action by the Combined Construction and Operating License ("COL") applicants. The design certification amendment has been under review by the NRC for several months, and that review is presently on schedule for approval by October 2011. This schedule would support issuance of the first two COLs for AP1000 design facilities (Units 3 and 4 at Alvin W. Vogtle Electric Generating Plant in Georgia and Units 2 and 3 at V.C. Summer Nuclear Station in South Carolina) within a few months thereafter, and issuance of the COL for Lee Nuclear Station in 2013.

Q. WHAT IS THE DEVELOPMENT PLAN FOR LEE TO REMAIN ON SCHEDULE FOR A COMMERCIAL OPERATION DATE IN 2021?

A. The regulatory approval and development process for the Lee Nuclear Station is lengthy and complex, and the Company continues to work toward securing all necessary regulatory approvals. Duke Energy Carolinas filed its Combined Construction and Operating License Application ("COLA") for Lee Nuclear Station on December 13, 2007.

The NRC's review of the COLA involves several major steps including inspections and audits, public meetings requests for additional information ("RAIs"), review of the Company's responses to RAIs, and documentation of NRC review conclusions. These review activities are currently ongoing; for example, the Company has responded to over 800 RAIs to date. The NRC is currently in the process of documenting its review conclusions by way of preparing a draft Environmental Impact Statement ("EIS") and draft Safety Evaluation Report

("SER"), which are necessary to support the decision to issue the COL to Duke Energy Carolinas for construction of a plant on the Lee Nuclear Station site. The NRC's issuance of these documents for public comment, which is expected in mid-2011, represents the next significant step in the licensing process. The NRC will also hold a public meeting in South Carolina to present its draft findings and to solicit additional comments on the draft EIS and SER documents. The Commission is scheduled to hold a mandatory evidentiary hearing in the second half of 2012, as required by the Atomic Energy Act, to review the sufficiency of the NRC staff's decision-making with respect to the COL. If the decision making is deemed sufficient, the NRC will issue Duke Energy Carolinas a COL for Lee Nuclear Station. In addition to the NRC license, the Company is pursuing all other relevant environmental permits necessary to support plant construction and operation.

Finally, Duke Energy Carolinas anticipates filing its application for a Certificate of Environmental Compatibility and Public Convenience and Necessity ("CPCN") and a Base Load Review Order ("BLRO") with the Public Service Commission of South Carolina ("PSCSC"), as well as the accompanying application for cost recovery of an out-of-state generating facility with this Commission, closer in time to receipt of the COL and execution of the contract for engineering, procurement and construction ("EPC") services at Lee Nuclear Station.

Q. HOW DID THE DELAY OF THE COMMERCIAL OPERATION DATE AFFECT THE PROGRESS OF DEVELOPING LEE NUCLEAR STATION?

A. Due to the decision to delay the commercial operation date ("COD") of Lee Nuclear Station Unit 1, expenditures for transmission right-of-way purchases, long-lead material reservations and the training simulator were postponed. These expenditures are expected to occur during the 2011-2013 timeframe.

Q. PLEASE DESCRIBE THE DEVELOPMENT ACTIVITIES, AND ASSOCIATED COSTS, THAT WILL BE COMPLETED PRIOR TO THE COMPANY'S ANTICIPATED RECEIPT OF THE COL IN 2013.

A. The following general categories of pre-construction work have been performed and are anticipated to be performed to continue the development of the Lee Nuclear Station through the Company's anticipated receipt of the COL for the project in 2013:

COLA Preparation – Labor, expenses, and contract support for preparation of the COLA tendered to the NRC on December 13, 2007. The NRC determined the application was suitable for review and docketed the application on February 25, 2008.

NRC Review and Hearing Fees – Labor, expenses, and contract support for activities required as a follow-up to submittal of the NRC COLA including NRC review fees and costs associated with responding to NRC RAIs regarding the COLA, which include revisions and periodic updates required to the COLA. Also included are costs associated with development and regulatory review of various required permits and labor and expenses required for periodic updates to Duke Energy Carolinas' application to the Department of Energy for a Loan Guarantee for Nuclear Power Facilities.

Land and Right of Way Purchases – Cost of purchasing approximately 4000 acres for construction of Lee Nuclear Station, the make-up ponds, and rights of way for railroads. The original site purchase was completed in late 2005; however, additional property has been acquired for the land needed to construct a supplemental pond for make-up water for the plant in the event of an extended drought and for railroad rights of way. Additional land rights may be acquired to complete the desired buffer zone around Make-Up Pond C. Acquisition of transmission rights of way has not yet begun.

Pre-construction and Site Preparation – Costs associated with remediation and demolition of onsite structures. Other site preparation activities include the engineering required for bringing water, sewer, transmission, and railroads to and from the site, as well as engineering for traffic improvements around the site. This category also includes ongoing industrial 24 by 7 security and miscellaneous site maintenance, such as mowing, utilities, maintenance of excavation dewatering pumps, perimeter fence repairs, repairs to site drainage system and erosion repairs.

Supply Chain, Construction Planning and Detailed Engineering – Costs and activities associated with working with the supplier to define a complete project scope and estimate and subsequent costs for negotiating an EPC agreement in 2008. This category also includes site specific engineering activities from 2011 to 2013 that to date have been limited to conceptual design necessary to support licensing and permitting activities. These items include: the raw water system, including river intake structures, pumps and piping designs; a conceptual site drainage plan; physical site security features; routing and material types for condenser circulating water systems, cooling tower basins; make-up pond A, B and C intake structures; and, waste water retention basins. Looking forward, detailed design engineering of the site specific structures, systems, and components will begin. A key Duke Energy risk mitigation strategy is to complete engineering work prior to site deployment, which is currently scheduled for 2014. Completing site specific engineering is a three to four year activity and therefore needs to begin in 2011 to support the Company's current schedule. Site specific systems, structures and components include: e.g., storm drainage system; sanitary drain system; yard fire protection system; waste water system; potable water system; circulating water; raw water system; liquid radwaste water system; retail onsite power; chilled water plant system; meteorological system; utilities; security; commercial and temporary buildings; and, site specific support buildings.

Operational Planning – Continued activities associated with development of plant procedures and programs, as well as training material. Duke Energy is working in concert with other AP1000 utilities to develop these procedures, programs and training materials in a cost efficient manner. Development of these items using shared resources from across the member utilities leverages the resources and expertise of the member utilities and should ensure that the cost of completing this work is substantially lower than the cost that a single utility would incur to complete.

Duke Energy Carolinas anticipates spending up to $459 million for this necessary project development work through the anticipated receipt of the COL in 2013. Duke Energy Carolinas anticipates additional updates to the estimate and schedule as the Company moves forward with the Lee Nuclear Station project, and will continue to update the Commission accordingly.

Q. WHY DOES THE COMPANY'S AMENDED APPLICATION SEEK APPROVAL FOR DEVELOPMENT COSTS TO BE INCURRED THROUGH 2013?

A. As testified to by Witness Hager, the Company's Integrated Resource Plan ("IRP"), filed with this Commission in Docket No. E-7, Sub 128, continues to support a COD for Lee Nuclear Station in the 2021 timeframe. Duke Energy Carolinas seeks to continue to preserve the option to have the Lee Nuclear Station available to serve customers in the 2021 timeframe by continuing the development efforts without interruption or delay. The development work described herein is necessary to ensure that the Company can secure a COL in 2013 and keep the project on pace for commercial operation in 2021.

IV. <u>CONCLUSION</u>

Q. DOES THIS CONCLUDE YOUR PRE-FILED DIRECT TESTIMONY IN SUPPORT OF THE COMPANY'S AMENDED APPLICATION?

A. Yes, it does.

Q. PLEASE STATE YOUR NAME, ADDRESS, AND POSITION.

A. My name is Dhiaa M. Jamil. My business address is 526 South Church Street, Charlotte, North Carolina. I am Group Executive, Chief Generation Officer for Duke Energy Corporation ("Duke Energy") and Chief Nuclear Officer for Duke Energy Carolinas, LLC ("Duke Energy Carolinas" or the "Company").

Q. HAVE YOU PREVIOUSLY FILED DIRECT TESTIMONY IN SUPPORT OF DUKE ENERGY CAROLINAS' APPLICATION IN THIS DOCKET?

A. Yes.

Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?

A. My rebuttal testimony addresses the Joint Testimony of Michael C. Maness and Kennie D. Ellis on behalf of the Public Staff North Carolina Utilities Commission ("Public Staff") filed in this docket on February 24, 2011. Specifically, I explain why the Commission should not change the limit of the time period for the Company's pursuit of project development activities to January 1, 2011, through June 30, 2012, or change the limit of the dollar amount spent on such activities to the North Carolina allocable share of $120 million. I believe that imposing such limitations is unwarranted and could unduly hamper the Company's efforts to preserve the nuclear option for its customers in the 2021 time frame. I urge the Commission to approve the Company's application as filed.

Q. WHAT IS THE PUBLIC STAFF'S POSITION WITH RESPECT TO THE REQUESTED TIME AND MAXIMUM DOLLAR LIMITS?

A. On Page 13 of their pre-filed Joint Testimony, Public Staff witnesses Maness and Ellis state their recommendation that "the Commission should limit its approval of Duke's decision to incur additional project development costs to a lower dollar amount and shorter time period than requested in Duke's application." They go on to state that the Commission should limit the time period to January 1, 2011, through June 30, 2012 and set a maximum expenditure level of the North Carolina allocable portion of $120 million. They also state that although they do not consider the Company's decision to continue to incur development costs in 2010 to be unreasonable, "the Commission should not include in its decision a specific amount of dollars already spent." Public Staff Testimony at 14.

Q. PLEASE COMMENT ON THE PUBLIC STAFF'S POSITIONS.

A. Initially, let me say that the Company appreciates the Public Staff's support of its Application. However, Duke Energy Carolinas respectfully disagrees with the Public Staff's preference for a shorter project development period and the correspondingly lower maximum amount of $120 million. We also disagree with its position with respect to the expenditures made by Duke Energy Carolinas during calendar year 2010 to continue to develop Lee Nuclear Station. As I explained in my direct testimony, the development work to be conducted through 2013 is necessary to ensure that the Company can secure a Combined Construction and Operating License ("COL") in 2013 and to continue to preserve the option to have Lee Nuclear Station available to serve customers in the 2021 timeframe. The Company has completed significant development work to date and has a correspondingly significant amount planned over the next three years. A great deal of the development work planned for 2011, 2012 and 2013 is an extension of the work commenced in 2008, and Commission approval of Duke Energy Carolinas' decision to incur development costs through the Company's receipt of its COL from the U.S. Nuclear Regulatory Commission will be more efficient and reduce the likelihood of possible delay or interruption.

Q. PLEASE EXPLAIN WHY THE PUBLIC STAFF'S RECOMMENDED COST AND TIMING LIMITATIONS ARE NOT REASONABLE?

A. The Public Staff bases its position on the "current uncertainty with respect to carbon legislation, the need for Duke to conduct a comprehensive reserve margin study, the potential for further delay in the need for nuclear generation, the high costs associated with nuclear construction, and the need for in-depth exploration of sharing the costs and risks of nuclear construction, whether with respect to SCE&G/Santee Cooper Summer plant or otherwise." Public Staff Testimony at 14. Duke Energy Carolinas Witnesses Rogers and Hager address aspects of the Public Staff's concern in his and her respective testimony, and I believe it is important to note that many of these uncertainties have existed for some time now and may continue to exist beyond June 30, 2012.

Duke Energy Carolinas' analysis, as described by Company Witness Hager, is based on the facts as they exist at present and taking into account the dynamic planning environment in which we are operating. It shows that new nuclear generation is the right resource for our customers in the 2021 timeframe. June 30, 2012 appears to be an arbitrary point in time selected by the Public Staff; it does not relate in any meaningful way to the Company's COL or project development schedule. Also, if the Commission were to limit its approval to the time period recommended by the Public Staff, the Company would need to file another project development application this year to attempt to receive approval of its decision to incur the additional costs to be incurred through its projected receipt of COL in 2013. Several, if not all, of the factors listed by the Public Staff will likely remain uncertain through the end of this year and beyond. The Company has every incentive to cease its project development efforts if it determines that such development is no longer in the best interest of its customers.

Based on the information currently available to the Company, allowing the Company to incur project development costs through December 31, 2013, as requested in the its amended application provides the Company with the necessary flexibility to continue the development of Lee Nuclear Station to its next significant milestone: issuance of a COL. As explained in our Application, my direct testimony and the testimony of other Company witnesses, we believe it is prudent to incur the requested project development costs to continue to preserve Lee Nuclear Station as an option to serve our customers' needs in the 2021 timeframe.

Q. PLEASE EXPLAIN WHY THE COSTS INCURRED BY DUKE ENERGY CAROLINAS IN 2010 TO CONTINUE TO DEVELOP LEE NUCLEAR STATION SHOULD BE COVERED BY A COMMISSION APPROVAL OF THE COMPANY'S PRESENT APPLICATION.

A. As the Company's analyses have continued to support new nuclear generation to meet our customers' energy needs in the future, we have continued our development efforts without interruption or delay so as to stay on schedule for the projected receipt of the COL and to keep Lee Nuclear Station available as a potential resource to serve customers in the 2021 timeframe. Public Staff witnesses Maness and Ellis themselves state that this was not unreasonable, and do not contest the Company's decision to incur such costs. Importantly, the Commission has approved the Company's Integrated Resource Plans ("IRPs") filed in 2008 and 2009 in Docket Nos. E-100, Sub 118 and E-100, Sub 124[1], respectively, that selected new nuclear generation as the appropriate resource to meet Duke Energy Carolinas' customer's needs in the future. The Company's decision to incur development costs during 2010 was consistent with the results of its planning analyses, which have been deemed to be reasonable by both the Public Staff and the Commission for planning purposes. As such, I believe the Commission should find that the Company's decision to continue to incur development costs in 2010 was reasonable and prudent under the circumstances, and such costs should be included in any order approving the Company's decision to incur project development costs in this regard.

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

A. Yes, it does.

[1] *Order Approving Integrated Resource Plans and REPS Compliance Plans*, issued in Docket Nos. E-100, Sub 118 and E-100, Sub 124 on August 10, 2010.

Q. Have you prepared a summary of your testimony?
A. Yes, I have.
Q. With the Commission's approval, I would ask you to read the summary of your testimony.
CHAIRMAN FINLEY: Go ahead.
A. Thank you. The purpose of my testimony is to support the Company's Amended Application for Approval of Decision to Incur Nuclear Project Development Costs by discussing the Company's development work performed and costs incurred to date for the Lee Nuclear Station, as well as to describe the completed and anticipated development work and related costs that have been, and will be, incurred during the period January 1, 2010 through December 31st, 2013. In addition, I provide a brief overview of the Company's current nuclear generation portfolio and operational performance.
As in years past, the Company's nuclear plants have operated very well this year. Through September 30th, 2010, the Company's seven nuclear units have operated at a system average capacity factor of 96.25, which is on track to be among the highest capacity factors the Company has experienced. The system average capacity factor

has been above 90 percent for over ten consecutive years. This demonstrated operational skill and experience will serve the Company well during the development and operation of the Lee Nuclear Station.

Duke Energy Carolinas has selected the Westinghouse AP1000 reactor technology, which is an advanced nuclear power generation technology that uses simplified design and passive features to enhance plant safety and operations and reduce construction costs. The plant utilizes the best components of currently deployed technologies, providing high confidence that the facility will operate at high levels of safety and reliability.

The AP1000 design was certified by the NRC in 2005. Subsequently, Westinghouse filed for an amendment of the design certification to address various design changes. The design certification amendment is under review by the NRC, and the review is presently on schedule for approval by October 2011. This schedule supports issuance of the license for Lee Nuclear Station in 2013.

The regulatory approval and development process for the Lee Nuclear Station is lengthy and complex, and the Company continues to work toward securing all necessary regulatory approvals. Duke Energy Carolinas filed its Combined Construction and Operating License Application for the Lee Nuclear Station on December 13, 2007.

The NRC's review of the Combined Construction and Operating License Application involves several major steps. The NRC is currently in the process of documenting its review by way of preparing a draft Environmental Impact Statement and the draft Safety Evaluation Report. The NRC's *issuance of these documents for public comments*, which is expected in mid-2011, represents the next significant step in the licensing process. The Commission is scheduled to hold mandatory evidentiary hearings in the second half of 2012 to review the sufficiency of the NRC staff's decision making, and if deemed sufficient, the NRC will issue Duke's license for the Lee Nuclear Station.

In addition to the license, the Company is pursuing all other relevant environmental permits necessary to support plant construction operation. Finally, Duke anticipates filing its application for a Certificate of Environmental

Compatibility and Public Convenience and Necessity and a Base Load Review Order with the Public Service Commission of South Carolina, as well as the accompanying application for cost recovery of an out-of-state generating facility with this Commission, closer in time to receipt of the license and execution of the contract for engineering, procurement and construction services for that facility.

Due to the decision to delay the commercial operation date of the Lee Nuclear Station, expenditures for transmission right-of-way purchases, long-lead material reservations and the training simulator were postponed. These expenditures are expected to occur during the 2011 to 2013 time frame.

The Company anticipates spending up to $459 million, which is inclusive of the development costs covered by the prior Commission order in this docket, for all of the development work through the anticipated receipt of the license in 2013.

The Company seeks to continue to preserve the option to have the Lee Nuclear Station available to serve customers in 2021 time frame by continuing the development effort.

This concludes the summary of my direct testimony.

Q. And your rebuttal?

A. I also have a rebuttal. The purpose of the rebuttal testimony is to address the joint testimony of Public Staff witnesses Michael Maness and Kennie Ellis filed on February 24th, 2011, as it relates to limiting the time period for predevelopment expenditures to January 1, 2011 to June 30, 2011, and limiting the expenditure amount to $120 million. I also address the witness -- I also address the witnesses' position that any Commission order should not include approval of a specific amount of dollars that have already been spent.

Initially, let me say that the Company appreciates the Public Staff's support for the decision to continue to incur development costs for Lee Nuclear Station. However, Duke respectfully disagrees with the Public Staff's recommendation regarding the spending and the timing limitations of any Commission approval of this application. A great deal of development work planned for 2011, '12 and '13 is an extension of the work commenced in 2008. The Commission's approval of Duke Energy Carolinas' decision to incur development costs through the Company's receipt of its license in 2013 will be more efficient and reduce the likelihood of possible delays or interruptions. Also, if the Commission were to limit its approval to the time period recommended by the Public Staff, the Company would need to file another project development application this year to attempt to receive approval of the additional cost to incur -- to be incurred through 2013.

As the Company's analyses have continued to support new nuclear generation to meet our customers' energy needs in the future, we have continued our development efforts without interruption or delay so as to stay on schedule for the 2021 time frame. The Company's decision to incur development costs during 2010 was consistent with the results of its planning analyses, which have been deemed to be reasonable by both the Public Staff and the Commission for planning purposes.

As such, I believe the Commission should find the Company's decision to incur additional predevelopment costs through the 2013 time period is reasonable and prudent to continue to preserve the Lee Nuclear Station as an option to serve our customers' needs in the 2021 time frame. We also request the Commission specifically to include in its order a finding that the decision to include costs in 2010 was reasonable and prudent. Thank you.

MS. SHAFEEK-HORTON: I would tender Mr. Jamil for cross exam.

CHAIRMAN FINLEY: Mr. Runkle, do you have questions?

CROSS EXAMINATION BY MR. RUNKLE:

Q. *Good afternoon, Mr. Jamil.*

A. Good afternoon.

Q. Have you ever seen the movie The Abyss?

A. Yes, I have, actually.

Q. And, in fact, that movie is centered around using a big hole in the ground that somebody had put there for a nuclear power plant, and they flooded it and filmed the move in it, didn't they?

A. I'm aware of that.

Q. And that was what was called at that time the

Cherokee reactor, was it not?
A. That is correct.
Q. And that nuclear project was canceled by Duke, was it not?
A. Yes. That's correct.
Q. When did Duke cancel that project?
A. I believe in the early '80's. I don't have the specific year, though.
Q. And that's the site where the Lee Station is now proposed, is it not?
A. That is correct.
Q. Okay. Now, as part of the predevelopment costs, did you have to spend any money making any changes to the earlier construction that happened at the Cherokee site?
A. Yes. We had to demolish some of the structures to make room for the new structure.
Q. And what structures did you have to demolish?
A. The unfinished containment was one specifically I'm aware of.
Q. And did you have to do anything with the flooded parts of that site?
A. I'm not aware of anything that was done with the flooded part, but we did preserve many of the

structures that were built for the previous Cherokee site and incorporated those into good use with the new design for the AP1000, particularly the two ponds that existed before, Pond Alpha and Bravo.

Q. And how much additional land did you need to purchase at the Lee site?

A. We did have to purchase additional land. I'm sorry, I do not have the specific acreage, but it was -- I can get that information. I don't have it on the top of my head.

Q. I think in your testimony you said 4,000 acres by 2005 of the additional acres needed?

A. That must be right.

Q. And is that predevelopment cost, the purchase of the additional land at that site?

A. Yes, it is.

Q. Now, looking to the end of 2013, your estimate is that the $459 million will be spent on predevelopment costs. Is that correct?

A. That is total, yes.

Q. And if you received your COLA in 2013 from the Nuclear Regulatory Commission, your combined operating license, would you require any additional development costs?

A. I don't anticipate any additional development costs. The way that we've got the schedule laid out, the receipt of the COLA is the last activity in the predevelopment costs, but I would have to say that the demarcation line for what's considered predevelopment versus construction is the filing of the CPCN that I referenced in my testimony, so that's the significance of the 2013.

Q. And so there would be both a filing in North and South Carolina?

A. Yes. Different filings, but essentially, yes.

Q. And what is your order? You would do the South Carolina first and then North Carolina?

A. I am probably not the best person to ask that question, but my understanding is that in South Carolina you do the CPCN and the Base Load Review Order together, and somewhere around the same time frame, but probably after that we'd come to North Carolina very shortly to file the out-of-state base load filing.

Q. And looking at some of your long-term procurements, what are the kind of equipment or structures that you need to file long-term procurement agreements with?

A. In the predevelopment stage?

Q. Yes, sir.

A. Actually, we have been very methodical and very deliberate about that specific issue. We don't want to -- we want to make sure that we are not committing cash commitment prior to some of the significant risk activities. One major risk activity is the COLA. Without a license, you're not going to be building anything. So unless that COLA is in hand, the schedule that we've laid out is such that no large commitments of long-lead items are made prior to that time. What we have, however -- that was particularly true in the 2008 filing, when we were projecting a COD of 2018 at the time. And looking at the orders that are coming in, particularly with AP1000, it was believed at the time that it would be -- the time would be -- would come where it would become necessary to reserve your spot in line not for all equipment, but certain equipment there are very limited suppliers globally for. One particular area is the ultra large, ultra heavy foragings, which there's only one, potentially now another one, in the world. So we have included in the project development request a small category that allows us to reserve our place, spot in line. That is still there, and we may still need it, but that's a decision that we will be making in negotiation with Westinghouse Shaw.

Q. And what are those really heavy items, the heavy forged items? One would be a turbine?

A. No, not the turbine. They would be primarily on the primary side of the facility. The reactor vessel would be one that specifically would require that type of place in line.

Q. And in 2008, I think you testified that there was only one, potentially two, manufacturers, and both in Japan, that could make that?

A. That is correct.

Q. Now, looking at the AP1000 design, so which revision of the AP1000 design are you planning on following?

A. Well, the current revision is Revision 18. There's a proposed rulemaking on that currently, that it's in the Federal Register in the comment area, so that would be the revision that would apply to the Lee site.

Q. And so in your Combined Operating License Application, you're still looking at the Revision 17 from the AP1000 design, are you not?

A. That is correct. So what happens on the process is that we submit an application, but the application is predicated on the reference plant, and the reference plant currently is Vogtle. Vogtle's application depends on the design certification. The design certification, the one that we're all shooting for right now is 18. We don't have to do 18, mind you, because we could submit our application on the current Revision 17. All that means is when it's our turn for the NRC to review our application, we'd have to do more work on our own, as opposed to go as a group. There's a tremendous amount of effort to make this a common design, a common approach. That way we can share in the savings. So we're trying to demonstrate discipline and stick with the latest revision that the whole pack will go for.

Q. Are you aware that Westinghouse is proposing a Revision 19?

A. Okay. Revision 19 would simply be the reconciliation. It's a process and, you know, when you follow the process, Revision 19 would be a reconciliation of the things that were agreed to with the NRC in Revision 18, so it's a clean-up rev.

Q. And I think Mr. Rogers referenced some Chinese construction of the AP1000 design, and there we're looking at Revision 15? Is that correct?

A. So the revision is what will your regulator expect in there. Revision 15 is not materially different than Revision 18 or 19, when taken in totality. The level of detail in Revision 15 would be lacking in the licensing process relative to Revision 18 or 19.

Q. But the difference between Revision 15, what's in Revision 15 and Revision 18 or 19 would be a substantial amount, would it not?

A. Let me try to explain. When we say revision, things are revised for many reasons. I can think of four reasons why things are revised. For example, Westinghouse decides that there's a better way of doing a particular design. The owners could ask I need more space in the turbine building, for example. I recall specifically one of those. More lay-down space. Now, we can put that in our application or we can deal with it as a group. We could decide to use the high density polyethylene pipe, for example, that we all now have experience with. There's more details about the exact layout of the control board where that did not exist before. Eventually, that will need to be in our standards in the U.S. That will need to be in our application. In China, that may not be necessary in their regulatory application and, therefore, it's not a change -- necessarily a change in the design, rather, a change in the amount of details in the application that they use.

Q. Now, I understand that the Revision 18 has gone up for rulemaking for the approval with that revision. Is that correct?

A. The proposed rulemaking is already out.

Q. Yes.

A. So it's in comment period.

Q. Yes. And that's on Revision 18.

A. That is correct.

Q. And there are some unresolved issues with Revision 18, are there not?

A. I don't understand. If it's going to be approved, then that would be the -- that would be the rev that would -- everyone would use. I don't understand the question.

Q. My understanding was that there were some serious matters with shield building that had not been resolved by NRC staff. In fact, there was a nonconcurrence issue on the Revision 18 on the shield building.

A. That's not an accurate statement.

Q. Okay. One of the engineers of NRC, John Maw [phon.], do you know him?

A. I don't know him personally.

Q. Okay.

A. But I'm familiar with, I think, the issue that you're talking about.

Q. And he filed a nonconcurrence because of the concrete that was used in -- that was in Revision 18 on the shield building.

A. Okay. If you would like me to comment on that, I'd be happy to.

Q. Okay.

A. Yes, I am familiar with that issue. The issue deals with the shield building. I will tell you that the fact that one individual with NRC can share their opinion so openly is a testament to the transparency of that agency and the manner that it does its work. And I take comfort in that, personally, because in this business we need diverse views. And that particular issue that was raised by Dr. Maw was thoroughly reviewed by Westinghouse experts, by the brightest minds in the industry on the issue, by the NRC staff, by a subcommittee of an independent group, by the full committee of the Advisory Committee of Reactor Safety and by the full Commission. So with all this expertise weighing in on that particular issue that's described in a note that was sent by Congressman Markey to the Chairman of the NRC, that in the view of the industry and the NRC, that that issue was fully considered and vetted out, and the conclusion of the NRC is that the design of the AP1000 design with the current shield building is safe.

Q. May I suggest that you need to look at that a little bit further.

Now, another issue that may be unresolved in the Revision 18 is the ongoing sump pump problem.

MS. SHAFEEK-HORTON: Objection. I'm

sorry. I would object to the first part of that question.

CHAIRMAN FINLEY: Grounds? Grounds for objection?

A. I'm familiar with the issue. It's not a sump pump problem.

Q. Well, that's the way I've heard it called.

MR. RUNKLE: I don't know what the objection is, so...

MS. SHAFEEK-HORTON: I'm sorry. The objection was to the first part of that when you asked him to -- you asked him to consider looking at that further.

MR. RUNKLE: Oh. I would move to strike that if that's...

CHAIRMAN FINLEY: All right. And I think that's moot testimony. That's no question, so proceed, Mr. Runkle.

Q. So my question was about the recirculation of the -- from the sump pump. That's probably a better explanation.

A. Yeah. I can help you out on it. So there are several technical issues that are routinely reviewed. What you're referring to is a postulation of a very specific accident scenario that the design has to address. And the design addressed it in a manner that the -- currently, the manner that the utilities, member utilities, accept, and that is to limit the amount of debris that is introduced into the containment building. And we find that as an industry to be an acceptable approach. There are other approaches that you could solve the same issue with. And if individual licensees choose to address the same issue a different way, they have the regulatory means to do that.

Q. Now, the NRC does an annual evaluation report card, per se, on the different reactors, do they not?

A. I believe so.

Q. In fact, they rate these reactors based on meeting safety requirements, the amount of violations, you know, different kinds of warnings and those kinds of things.

A. You're talking about operating reactors.

Q. Yes.

A. Yes. That's called the reactor oversight process, yes.

Q. Right, right. And one was just recently released *in the last month?*

A. Yes.

Q. In effect, the three Oconee reactors that Duke operates were on the bottom tier?

A. That's not correct.

Q. How did the -- how did the Oconee reactors rate on the annual rating at the NRC?

A. The current ratings for all seven units of Duke are in the licensee response column, which is the best column. All of our units are in the green area. And that is the current status. I invite you to go the NRC's web page and review that.

MR. RUNKLE: I've got no further questions.

CHAIRMAN FINLEY: All right. Mr. Green?

MR. GREEN: I have no questions.

CHAIRMAN FINLEY: Ms. Rankin?

MS. RANKIN: I have no questions.

CHAIRMAN FINLEY: Redirect?

MS. SHAFEEK-HORTON: Just a couple.

REDIRECT EXAMINATION BY MS. SHAFEEK-HORTON:

Q. Mr. Jamil, what's the difference between the development at the Cherokee site in the early '80's versus the current Lee development?

A. Well, the technology of the site is completely different, which dictates that the floor mat, the requirements for building an AP1000 is considerably different. The ponds that are needed are no longer required to be safety related like they once were. There are significant design differences between the old units and this one. There are some benefits in the fact that we could reuse some of the structures, maybe not in the way that they were intended, but essentially that would reduce the cost of the project.

Q. Even if the Chinese plants are based on Rev. 15 as opposed to Rev. 18, do you expect them to be significantly different from the U.S. reactors?

A. No.

MS. SHAFEEK-HORTON: I have nothing further.

CHAIRMAN FINLEY: Questions by the Commission?

EXAMINATION BY COMMISSIONER BROWN-BLAND:

Q. Good afternoon, Mr. Jamil.

A. Good afternoon. A little bit ago -- well, actually, it's in your summary of your direct testimony, the second page. In terms of filing an application for cost recovery with this Commission, you indicated it would be closer in time to receiving a license. Would that be before or after the license is received?

A. I'm trying to remember the schedule that we've got laid out. It is very close to the same -- I believe we will have the COLA in hand and then -- the way we've got it on the schedule, we show it on the same month as both, so it's -- it could be one before the other very close, but we will not move forward with a CPCN unless there's high confidence or the license itself is in hand.

Q. All right. And earlier, when Mr. Rogers was on the stand, I think he deferred this question to you, but would Duke be willing to cap the development costs at the $459 million figure?

A. Yeah. So, of course, if my boss says we're willing to, of course, we're willing to, but I think it's important for me to explain the process that we've got. We came here a couple of years ago and asked for development costs to be ruled as prudent. We laid out a schedule with specific activities. It was not intended to be this is the amount of project development costs that will get us to the

COLA. We were clear, that is the amount that will get us to the CPCN, and from thereon, this work that we're continuing to do would need to continue to be done, except it will be done under a different regulatory process. It would no longer be called predevelopment costs. So it's not a case of more work got added, the scope got changed; it's a case of a timing of when you draw that line.

At the time that Lee got $230 million -- this is what we said we would need through 2009 -- when we recognized that that line is going to shift and the construction line is going to be somewhere different, we managed those dollars very prudently. We shifted work activities in order to not overspend the amount of dollars. We've really shown a great amount of discipline in making sure those dollars -- I wouldn't call them approved, but ruled as prudent -- were used very wisely. We fully intend to use the same approach going forward. We've demonstrated we're not going to spend a dollar unless it's needed, and we will continue to do that going forward.

But the nature of the activities that remain, some of it is, frankly, out of the control of the licensee. I'll give you one example, that is if -- for example, the hearings, the mandatory hearings that will come with the NRC application, the COLA. After the safety evaluation review and after the environmental impact statement, there needs to be a mandatory hearing, we assume six to nine months, this cost amount with hearings. If those hearings happen significantly longer, there's going to be cost involved with that, and we do not have that included in the project development costs. So those are the types of things that could fall outside of the control of the licensee, so the only reason I would hedge is because of those uncertainties.

COMMISSIONER BROWN-BLAND: All right. That's all I have right now. Thank you.

CHAIRMAN FINLEY: Other questions by any commissioner?

EXAMINATION BY CHAIRMAN FINLEY:

Q. Mr. Jamil, I'm looking at page 10 of your direct testimony, lines 7 through 13, where you discuss preconstruction and site preparation costs.

A. Yes, sir.

Q. I'm just curious if you can tell us approximately what percentage of those costs have been completed and what percentage remains left undone?

A. In the category of -- is it the Supply Chain Construction and Planning and Detailed Engineering category?

Q. No. It's the category above that, lines 7 through 13.

A. Oh, I'm sorry. Preconstruction and Site Preparation. Yeah. I have that. In the preconstruction category, we are a third of the way through that, so we've spent $20 million in that category. We project to need $44 million more in that category.

Q. All right, sir. I am looking at a document that has been filed on Duke's behalf on February 1, 2011, which is a letter submitting Duke's report of nuclear development activities, expenditures for the period July 1, 2010 through December 31, 2010, and it's a chart. A lot of this information is --

MS. SHAFEEK-HORTON: Excuse me. I hate to interrupt. May the attorneys approach the bench?

CHAIRMAN FINLEY: Sure.

(OFF-THE-RECORD DISCUSSION)

CHAIRMAN FINLEY: Let's take about a two-minute recess.

(RECESS TAKEN FROM 3:06 P.M. UNTIL 3:08 P.M.)

Q. Okay, Mr. Jamil.

A. Yeah. I don't have it with me, but I am certainly familiar with those.

Q. And I'm looking at the public version that has most of the columns -- all the columns marked confidential, except for total at the bottom.

A. Yes.

Q. And my question is, can you explain to us why Duke deems it appropriate to designate those costs confidential? I'm not asking you what the numbers are, but just if you could give us -- we have some question as to why that needs to be confidential. If you could just enlighten us on that, please.

MS. SHAFEEK-HORTON: I apologize one more time. If I could approach the witness with a copy of the chart that you're holding.

CHAIRMAN FINLEY: Sure.

A. Yeah. The question came up -- now I'm remembering -- the last time we came here. And if I recall, the reason we requested that to be confidential is at that time, we were on the faster track of a 2018

COD. We were approaching potentially an EPC with Westinghouse Shaw. And at that time, some of the information reflected in here could have been -- someone could have put together the data and gotten a clue into some of the proprietary agreements that we had with them. So that was a motive, as I remember it. I had not anticipated this question, Mr. Chairman, so the recollection was we needed to -- the breakdown to be confidential because it was a trade --

Q. Secret.

A. -- secret at the time. So reflecting back on it now, while those categories reveal some planning activities, the EPC has been pushed till 2013, so I would need to contemplate whether that is still a factor or not.

Q. Well, we would ask Duke to take another look at that exhibit, and you can determine whether you think it still needs to be confidential and, if not, let us know and --

A. We will do that.

Q. -- we could make the information public as opposed to confidential.

A. Yes. Thank you.

CHAIRMAN FINLEY: Other questions? All right. I believe that Commissioner Brown-Bland has determined that she wants to ask a question that she thinks is confidential, and so that being the case, based on our practice, we're going to have to request momentarily that people who have not signed some confidentiality agreement in this case that would enable them to hear or see confidential information to temporarily leave the hearing room through the back door there, and we will briefly ask these questions, and when we're finished, we'll invite members of the public back into the hearing room.

Q. Mr. Jamil, --

A. Yes, ma'am.

Q. Wait just a minute. My question comes from the direct testimony that's been filed by the Public Staff. And I don't know if you have copies of that in front of you, if you want to look, but I'm on page 11.

A. I do not have it with me.

Q. Page 11 there in the middle where you can see -- where it says begin and end confidential?

A. Uh-huh.

Q. I just have a question about that, in that it indicates that if JEA exercises the option, but Duke later terminates, there's been a conditional obligation made to provide alternative resources to JEA. So I was wondering if you can shed light on the nature and extent of those alternative resources.

A. They have the option to --

CHAIRMAN FINLEY: Just a minute. I would request that the court reporter indicate at this point in the testimony that this part of the transcript will be confidential and proprietary and so designated in the transcript and will not be made public. And when we're finished with this line of questioning, I'll indicate to you where we can stop that indication.

(BECAUSE OF THE PROPRIETARY NATURE OF THE TESTIMONY CONTAINED ON PAGES 51 THROUGH 53, IT WAS FILED UNDER SEAL.)

CHAIRMAN FINLEY: Are there further Commission questions?

(No response.)

CHAIRMAN FINLEY: Questions on the Commission's questions?

MS. RANKIN: I have one.

CROSS EXAMINATION BY MS. RANKIN:

Q. In response to Chairman Finley, I believe, when he was asking you questions -- and this won't be confidential -- you referenced $230 million and stated that the Commission had ruled the dollars as prudent in the last proceeding? Do you recall?

A. Yeah.

Q. Is it not an actual fact that the Commission imposed a $160 million cap in the last proceeding? And I can show you the order or you can take it subject to check.

A. No. I believe you.

Q. Is it not also true that that order says the Commission isn't approving any dollars as prudent, that it can be only approved in the decision to incur?

A. That is correct.

MS. RANKIN: I have no further questions.

CHAIRMAN FINLEY: Any other questions for Mr. Jamil?

(No response.)

CHAIRMAN FINLEY: All right. Thank you, Mr. Jamil.

MS. SHAFEEK-HORTON: May he be excused?

CHAIRMAN FINLEY: He may. Your next witness.

MR. CASTLE: I would call Janice Hager.

(WHEREUPON, JANICE HAGER WAS CALLED AS A WITNESS, DULY SWORN, AND TESTIFIED AS FOLLOWS:)

DIRECT EXAMINATION BY MR. CASTLE:

Q. Good afternoon, Ms. Hager. Can you please state your name and business address for the record?

A. My name is Janice Hager. My business address is 526 South Church Street, Charlotte.

Q. And by whom are you employed and in what capacity?

A. I'm employed by Duke Energy, and I am in the capacity of Vice President of Integrated Resource Planning and Regulated Analytics for Duke Energy.

Q. Did you cause to be prefiled in this docket 17 pages of direct testimony, along with four accompanying exhibits?

A. Yes.

Q. Do you have any changes to that testimony or those exhibits at this time?

A. Yes, I do. I have two small changes to my testimony. The first is on page 3 of my direct testimony on line 1. And I'm replacing in the sentence that says "I assumed my position" -- it currently says "I assumed my current position in January 2007." It should say instead, "In January 2007, I became Manager-Director of Integrated Resource Planning for the Regulated Jurisdictions, including Duke Energy Carolinas. Since that time, several groups involved in Regulated Analytics were added to my responsibility. I was named in my current role in October 2009."

And then I have another change on page 10 of my direct testimony. I'm replacing the sentence that begins on line 13 and goes partway through line 16. That sentence should now read "Renewable portfolio standard requirements were applied to all retail load and to wholesale customers who have contracted with Duke Energy Carolinas to meet their REPS" -- that's R-E-P-S -- "requirements."

CHAIRMAN FINLEY: Why don't you go over that one more time, Ms. Hager.

THE WITNESS: Both of them or just the second one?

CHAIRMAN FINLEY: The last one.

A. Okay. The sentence that now begins on line 13 of page 10, "These requirements," would be replaced with one that says "Renewable portfolio standard requirements were applied to all retail load and to wholesale customers who have contracted with Duke Energy Carolinas to meet their REPS requirements."

Q. Is that all the changes you have to your direct testimony?

A. It is.

Q. And if I asked you the same questions posed to you in your prefiled testimony today on the stand, would the answers remain the same?

A. Yes.

MR. CASTLE: Mr. Chairman, I would ask to have Ms. Hager's direct testimony entered into the record as if given orally from the stand, and then her four direct exhibits be marked for identification for the record as prefiled.

CHAIRMAN FINLEY: Ms. Hager's direct prefiled testimony shall be copied into the record as if given orally from the stand, and her four exhibits to her direct testimony shall be marked as premarked in the filing.

(THE PREFILED DIRECT TESTIMONY OF JANICE HAGER, AS CORRECTED, WILL BE COPIED INTO THE RECORD AS IF GIVEN ORALLY FROM THE WITNESS STAND.)

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I. INTRODUCTION AND PURPOSE

Q. PLEASE STATE YOUR NAME, ADDRESS AND POSITION WITH DUKE ENERGY CORPORATION.

A. My name is Janice D. Hager. My business address is 526 South Church Street, Charlotte, North Carolina. I am Vice President, Integrated Resource Planning and Regulated Analytics for Duke Energy Business Services LLC, the service company subsidiary of Duke Energy Corporation (collectively "Duke Energy") and an affiliate of Duke Energy Carolinas, LLC ("Duke Energy Carolinas" or the "Company").

Q. WHAT ARE YOUR JOB RESPONSIBILITIES?

A. As Vice President, Integrated Resource Planning and Regulated Analytics, I am responsible for planning for the long-term capacity and energy needs of the Duke Energy operating utilities, including the Duke Energy Carolinas system. My responsibilities include supervising the preparation and filing of integrated resource plans ("IRPs") in accordance with state regulations.

Q. PLEASE SUMMARIZE YOUR EDUCATIONAL BACKGROUND AND PROFESSIONAL EXPERIENCE.

A. I am a civil engineer, having received a Bachelor of Science in Engineering from the University of North Carolina at Charlotte. I began my career at Duke Power Company (now known as Duke Energy Carolinas) in 1981 and have had a variety of responsibilities across the Company in areas of piping analyses, nuclear station modifications, new generation licensing, and rates and regulatory affairs, including serving as Vice President, Rates and Regulatory Affairs for Duke

Energy Carolinas. I assumed my current position in January 2007. I am a registered Professional Engineer in North Carolina and South Carolina.

Q. DID YOU PREVIOUSLY CAUSE TESTIMONY TO BE FILED IN THIS PROCEEDING?

A. Yes. I previously filed testimony in support of the Company's original Application for Approval of Decision to Incur Nuclear Generation Project Development Costs (the "Application") on January 11, 2008.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony on the Company's Amended Application is to discuss how the 2010 Duke Energy Carolinas IRP, filed in Docket No. E-100, Sub 128, supports the Company's decision to continue the development of the Lee Nuclear Station.

Q. PLEASE DESCRIBE THE EXHIBITS TO YOUR TESTIMONY.

A. My testimony includes four exhibits: Hager Exhibit A shows Duke Energy Carolinas' existing resources and resource requirements to meet the load obligation, plus the 17% target planning reserve margin, over the planning period of the IRP. Hager Exhibit B illustrates the capacity and energy mix of the Company's existing resources for 2011, and Hager Exhibit C provides the capacity and energy mix for the Company's projected future resources for 2030. Hager Exhibit D provides a cost comparison of the future resource portfolios analyzed under the 2010 IRP.

Q. WERE HAGER EXHIBITS A-D PREPARED BY YOU OR UNDER OUR SUPERVISION AND DIRECTION?

A. Yes.

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II. 2010 IRP SUPPORT FOR LEE NUCLEAR STATION

Q. PLEASE PROVIDE AN OVERVIEW OF THE COMPANY'S INTEGRATED RESOURCE PLANNING PROCESS.

A. As I have previously testified in this Docket, the integrated planning process begins with a 20-year load forecast. The forecast includes projections of summer and winter peak demands, as well as energy use. Information is gathered for Duke Energy Carolinas' existing resources, including Company-owned generation, purchased power agreements, and demand-side/energy efficiency resources. The information includes items such as capacity rating, heat rate, fuel costs and emission allowance costs. Data is gathered on the costs of additional resource options to meet customer needs. Such data includes lead times for construction, capacity costs, fixed and variable operating and maintenance costs and emissions costs for generation, as well as the costs of demand-side options. Quantitative analyses are conducted to identify combinations of options that will meet customer energy needs (plus reserve margin) while minimizing the costs to customers. The 2010 IRP incorporates a target planning reserve margin of 17%, which Duke Energy Carolinas' historical experience has shown to be sufficient based on the prevailing expectations of reasonable lead times for the development of new generation, siting of transmission facilities and procurement of purchased capacity. These quantitative analyses enable the Company to identify potential portfolios that can be tested under base assumptions, and for sensitivities and scenarios around those base assumptions.

Q. WHAT ARE THE OBJECTIVES OF THE IRP?

A. Duke Energy Carolinas' resource planning process seeks to inform the Company's decision-making over the short and long term to ensure there is a safe, reliable, reasonably-priced supply of electricity to meet customer needs regardless of how these uncertainties unfold. The comprehensive planning process considers a wide range of assumptions, including those required to comply with statutory and regulatory mandates, and uncertainties and develops an action plan that preserves the options necessary to meet customers' needs.

Q. ARE DECISIONS REGARDING RESOURCE PLANNING MADE ON THE BASIS OF QUANTITATIVE ANALYSES ALONE?

A. No. Consistent with the responsibility to meet customer energy needs in a reliable and economic manner, the Company's resource planning approach includes both quantitative analysis and qualitative considerations. Quantitative analysis provides insights on the potential impacts of future risks and uncertainties associated with fuel prices, load growth rates, capital and operating costs, and other variables. Qualitative perspectives such as the importance of fuel diversity, the Company's environmental profile, the stage of technology deployment, and regional economic development are also important factors to consider as long-term decisions are made regarding new resources.

Company management uses all of these perspectives and analyses to ensure that Duke Energy Carolinas will meet near-term and long-term customer needs, while maintaining flexibility to adjust to evolving economic, environmental, and operating circumstances in the future. The environment for planning the Company's system continues to present significant challenges from a fuel, regulatory and legislative perspective. As a result, the Company believes prudent planning for customer needs requires a plan that is robust under many possible future scenarios. At the same time, it is important to maintain a number of options to respond to many potential outcomes of major planning uncertainties (e.g., federal greenhouse gas emission legislation/regulation, changes in fuel pricing, etc.).

Q. WHAT ADDITIONAL SYSTEM RESOURCE NEEDS DID THE 2010 IRP IDENTIFY OVER THE PLANNING HORIZON?

A. Before the impact of energy efficiency programs is included, the current load forecast reflects a 1.8% average annual growth in both summer and winter peak demands, and a 2.0% average annual increase in total energy usage over the twenty year planning horizon. These percentages equate to an average annual growth rate of approximately 360 megawatts ("MWs") per year of peak demand and 2,100,000 megawatt-hours per year. In addition, there are some existing resources that will no longer be available to meet our customers' needs. Each MW of capacity that is no longer available must be replaced with new capacity, either from supply-side or demand-side resources. Hager Exhibit A shows the existing resources and resource requirements to meet the load obligation, plus the 17% target planning reserve margin.

The need for additional capacity grows over time due to load growth, unit capacity adjustments, unit retirements, and expirations of purchased-power contracts. The need grows to approximately 2,200 MW by 2020 and to 6,000 MW by 2030. As I discuss later, the plan is to meet that projected need with a diverse array of resources – traditional and renewable generation, as well as demand response and energy efficiency resources.

Q. WHAT IMPACT DOES THE PRICE OF NATURAL GAS HAVE ON THE COMPANY'S ANALYSIS FOR THE IRP?

A. The projected costs of natural gas are a key input assumption into the Company's analysis. The projected cost of natural gas has dropped significantly over the past year or so, primarily due to expectations regarding shale gas availability. The projection of natural gas prices used in the 2010 analysis are 23% lower on average and 35% lower by 2025 than those used in Duke Energy Carolinas' 2009 IRP analysis.

As noted by Duke Energy Carolinas Witness Jim Rogers, questions remain regarding access to the new domestic reserves of shale natural gas that are driving the new supply estimates. Consequently, uncertainty exists regarding natural gas availability and pricing over the long term. However, Duke Energy Carolinas' resource plans reflect Mr. Rogers' testimony that natural gas resources, like new nuclear resources, are only a part of the diversified future energy mix necessary for Duke Energy Carolinas to provide affordable, reliable and clean electricity to its customers over the coming decades.

Q. DID DUKE ENERGY CAROLINAS CONSIDER A RANGE OF POSSIBLE CARBON ALLOWANCE PRICES IN THE 2010 IRP?

A. Yes. As with projected fuel pricing, projected carbon allowance pricing is a key input assumption in the Company's IRP analysis. As Mr. Rogers references in his testimony, Duke Energy Carolinas is planning for a carbon-constrained future and must plan to meet customer needs under a variety of scenarios. For its 2010 IRP analysis, the Company considered a range of CO_2 prices as sensitivities in its evaluation of each potential resource portfolio. The ranges were based upon the various federal legislative "cap and trade" proposals, and also included a sensitivity for potential federal "clean energy" legislation that does not have a CO_2 allowance "cap and trade" mechanism, but instead is based on a federal clean energy standard, which includes an energy efficiency and renewable portfolio standards with allowances for new nuclear generation. The Company's 2010 fundamental CO_2 allowance price forecast is lower than its 2009 forecast primarily due to projection of lower natural gas prices, increased coal retirements, lower loads and increased projections with regard to the ability to use international and domestic offsets to meet CO_2 reduction mandates.

As Duke Energy Witness Jim Rogers states in his testimony, new nuclear resources are a necessary piece of the puzzle for Duke Energy Carolinas to meet its customers' electricity needs over the long term regardless of the uncertain future of carbon legislation. He notes the significant benefits of base load, emissions free nuclear generation from a system planning perspective. As Mr. Rogers notes, even in the absence of carbon legislation, Duke Energy Carolinas must modernize and de-carbonize its resource options over the coming decades to retain its ability to provide affordable, reliable and clean electricity to all of its customers.

Q. DID DUKE ENERGY CAROLINAS CONSIDER ENERGY EFFICIENCY AND DEMAND-SIDE RESOURCES IN THE 2010 IRP?

A. Yes. Projected load impacts for energy efficiency ("EE") and demand-side management ("DSM") resources were developed for the base case based on the settlement in the Commission proceeding for approval of the Company's Energy Efficiency Plan (Docket E-7, Sub 831). The conservation impacts were assumed at 85% of the target impacts from the proposed settlement. The Company assumes total efficiency savings will continue to grow on an annual basis through 2021, however, the components of future programs are uncertain at this time and will be informed by the experience gained under the current plan. This level of DSM/EE accomplishments was cost-effective in the screening stage of the analysis and thus was included in all portfolios.

In addition, a high case scenario was developed which uses the full target impacts of the save-a-watt bundle of programs for the first five years and then increases the load impacts at 1% of retail sales every year after that until the load impacts reach the economic potential identified by the 2007 market potential study. This level of DSM/EE accomplishments was also cost-effective if there is equal participation among residential, commercial and industrial customers.

Q. DID DUKE ENERGY CAROLINAS CONSIDER RENEWABLE ENERGY RESOURCES?

A. Yes. Because of North Carolina's enactment of the Renewable Energy and Energy Efficiency Portfolio Standard ("REPS"), Duke Energy Carolinas modified its consideration of renewable energy resources. In the 2010 IRP, the level of renewable resources necessary for compliance with the REPS statute (N.C. Gen. Stat. § 62-133.8) and North Carolina Utilities Commission Rules was included in each portfolio. The assumptions for planning purposes are as follows:

Overall Requirements/Timing
- 3% of 2011 retail load by 2012
- 6% of 2014 retail load by 2015
- 10% of 2017 retail load by 2018
- 12.5% of 2020 retail load by 2021

A portion of the REPS requirements was assumed to be provided by EE, co-firing biomass in some of Duke Energy Carolinas' existing units, and by purchasing Renewable Energy Certificates from out of state, as allowed in the statute and rules. These requirements were applied to all native loads served by Duke Energy Carolinas (i.e., both retail and wholesale, and regardless of the location of the load) to take into account the potential that a Federal Renewable Portfolio Standard may be imposed that would affect all loads. The 2010 IRP includes 125 MW of on peak contribution from renewable energy by 2012 and approximately 520 MW by 2030.

Q. PLEASE DESCRIBE DUKE ENERGY CAROLINAS' EXISTING GENERATION RESOURCE PORTFOLIO MIX.

A. Duke Energy Carolinas' generation portfolio is composed of over 21,000 MWs of generation capacity. As shown on the charts below in Hager Exhibit B, although Duke Energy Carolinas' capacity mix is roughly one-third coal, one-third nuclear, and one-third hydroelectric and gas-fired, the energy mix is roughly 50% nuclear and 40% coal-fired generation.

Q. WHAT ASSUMPTIONS DOES DUKE ENERGY CAROLINAS MAKE IN ITS 2010 IRP RELATIVE TO RETIREMENT OF EXISTING GENERATION?

A. The 2010 IRP assumes the retirement of 370 MWs of our oldest (1960's vintage) combustion turbines, as well as the retirement of 1667 MWs of coal-fired generation, representing all of the Company's coal-fired generation resources without installed flue gas desulfurization facilities (also known as "SO2 scrubbers"), by 2015. The projected coal retirements are driven by the conditions set forth in the North Carolina Utilities Commission's *Order Granting Certificate of Public Convenience and Necessity With Conditions* in Docket No. E-7, Sub 790 (March 21, 2007)("Cliffside Order")[1] and the anticipated impact of a series of new proposed U.S. Environmental Protection Agency ("EPA") rules regulating multiple areas relating to generation resources, such as mercury, SO2, NOx, coal combustion by-products and fish impingement/entrainment. These new EPA rules, if implemented, will increase the need for the installation of additional environmental control technology or retirement of coal fired generation in the 2014 to 2018 timeframe. Although the Company has not made a firm decision as to when this generation will be retired, in anticipation of these increased control requirements, the Duke Energy Carolinas 2010 IRP incorporates a planning assumption that all coal-fired generation that does not have an installed SO2 scrubber will be retired by 2015.

[1] The Cliffside Order requires the retirement of the existing Cliffside Units 1-4 no later than the commercial operation date of the new unit, and retirement of older coal-fired generating units (in addition to Cliffside Units 1-4) on a MW-for-MW basis, considering the impact on the reliability of the system, to account for actual load reductions realized from the new EE and DSM programs up to the MW level added by the new Cliffside Unit 6.

Q. HOW DOES BUILDING ADDITIONAL NUCLEAR GENERATION AFFECT THE DIVERSITY OF THE PORTFOLIO?

A. As noted above, Duke Energy Carolinas is planning on adding significant amounts of renewable and DSM/EE resources over the next 20 years. These efforts, even when considered in combination with the additions of the 825 MW new advanced clean coal Cliffside Unit 6 and the 620 MW (each) Buck and Dan River combined cycle facilities, will still not provide enough resources to meet future customer demands. Given the pending retirements of the Company's coal-fired generation assets, the projected load growth over time, and the expiration of purchased power contracts, additional generating capacity will be required to ensure a reliable supply of power.

Current options other than renewable and DSM/EE resources for meeting resource needs are coal, nuclear and natural gas. Due to current environmental standards for new coal generation resources, and the likelihood of a carbon price or clean energy standard, new coal resources are not a cost-effective long term resource option at this time. Thus, we are left with natural gas-fired generation as a possible generation alternative to new nuclear resources. As Witness Rogers describes in his testimony, the Company considers natural gas to be a component piece of the long term supply solution, but it is not, by itself, the answer. A diverse portfolio of resources, including both natural gas and nuclear resources, will allow the Company to balance the risk of fuel volatility and minimize costs to customers over the long term. Thus, the continued development of Lee Nuclear Station would allow for continued diversification of resources, and less dependence on greenhouse gas-emitting resources, which is a benefit to all customers. This is illustrated in Hager Exhibit C which shows that the percentage of nuclear capacity and energy in 2030 remains the same as in 2011, even with the addition of Lee Nuclear Station.

Q. WHY IS DIVERSITY OF RESOURCES IMPORTANT FROM A RESOURCE PLANNING PERSPECTIVE?

A. Resource diversity is important in ensuring a reliable and cost-effective supply of electricity for the Company's customers. Duke Energy Carolinas' customers' use of electricity varies widely from day to night and season to season. It is therefore important to have resources with different operating characteristics. The Company's baseload units, such as the current nuclear fleet, are designed to operate continually except for occasional outages for maintenance or refueling. Others resources, like natural gas-fired combustion turbines, are designed to be ready to meet the Company's peak loads on short notice. Duke Energy Carolinas must have a spectrum of resources that can ramp up and down as load varies, resources that can start with seconds or minutes notice, and resources that can start from a battery in case of a loss of power (black start capability). There is no one resource type that can meet all of these needs.

Additionally, resource diversity helps to ensure cost-effectiveness of the Company's resource mix. Resource planning isn't about predicting the future, it is about being prepared for whatever the future holds. Although the Company diligently seeks to project future fuels and emission allowance costs and future regulatory and legislative actions that could impact the operation of our resources, the actual outcome is uncertain. Resource diversity serves as a risk mitigant; it serves to ensure that all of our resource "eggs" are not in one basket, such that Duke Energy Carolinas' future operations, and the ultimate cost borne by its customers, are not specifically tied to one particular fuel source.

Q. GIVEN THE ANALYSIS CONDUCTED WITH THESE CONSIDERATIONS IN MIND, WHAT WERE THE CONCLUSIONS OF THE 2010 IRP?

A. The results of the quantitative and qualitative analyses suggest that a combination of additional baseload, intermediate, and peaking generation, renewable resources, and EE and DSM programs are required to meet customer needs over the next 20 years. The near-term resource needs can be met with new EE and DSM programs, completing construction of the Buck, Dan River, and Cliffside Projects, as well as pursuing nuclear uprates and renewable resources.

In each IRP, the Company chooses one portfolio as "the plan" for showing that customer needs can be met over the 20 year planning period. Over the duration of the planning period, the portfolio chosen for the 2010 IRP is made up of 1,780 MW of new natural gas simple cycle capacity, 1,300 MW of combined cycle capacity, 2,234 MW of new nuclear capacity, 1,267 MW of Demand-Side Management, 633 MW of Energy Efficiency, and 520 MW of renewable resources. The portfolio also includes the Cliffside Unit 6 and Buck and Dan River CC Projects.

Q. SPECIFICALLY, WHAT DOES THE 2010 IRP CONCLUDE AS TO THE NEED FOR AND TIMING OF NEW NUCLEAR GENERATION?

A. Duke Energy Carolinas' 2010 IRP supports new nuclear generation as the best option to meet our customers' needs for future baseload generation. The IRP continues to show new nuclear generation as the best option for meeting Duke's long term baseload generating needs in both North Carolina and South Carolina under all scenarios analyzed. The need for new baseload generation, in particular, is demonstrated by the lower cost to customers of the portfolios that include new nuclear capacity than than those portfolios that included only new natural gas-fired generation, which would be dispatched as peaking and intermediate units.

The results for all these analyses, and descriptions of the subject resource scenarios, are included in Hager Exhibit D. As the Exhibit shows, the results of the IRP analysis show the benefits to customers of either full ownership of the Lee Nuclear Station or shared ownership. The conclusions of the IRP demonstrate that the 2020 time frame for new nuclear generation remains beneficial for Duke Energy Carolinas' customers; it creates the optimal result in meeting the Company's obligation to supply power at the least cost to its customers and builds in the opportunity to develop partners and pursue legislation to ensure Lee Nuclear is brought on line at the lowest possible cost.

Q. HOW DO THE CONCLUSIONS FROM THE 2010 IRP COMPARE TO THOSE OF THE 2007 PLAN WHICH WAS THE BASIS OF YOUR EARLIER TESTIMONY?

A. The 2007 and 2010 IRPs, as well as the 2008 and 2009 IRPs, strongly supported the need for the Lee Nuclear Station as a critical part of Duke Energy Carolinas' future resource mix. Each plan was based on the best information available at the time. As we have included updated information in each IRP, the basic conclusion of the Company's analysis is the same; the continued development ofLee Nuclear Station as a future resource option is in the best interest of Duke Energy Carolinas and its customers.

III. CONCLUSION

Q. IN CONCLUSION, WHY IS THE CONTINUED DEVELOPMENT OF THE LEE NUCLEAR STATION IMPORTANT TO DUKE ENERGY CAROLINAS' FUTURE RESOURCE PLANNING?

A. The Lee Nuclear Station would provide needed, reliable and greenhouse gas emission-free base load generation for Duke Energy Carolinas. Given the uncertainties posed by future economic, environmental, regulatory and operating circumstances, continuing to develop new nuclear generation as a resource option in the 2020 timeframe is prudent. The Company's IRP analysis demonstrates that the Lee Nuclear Station has significant value for customers under multiple scenarios. For all the reasons stated previously, I believe that Duke Energy Carolinas' decision to incur continued development costs for the Lee Nuclear Station is reasonable.

Q. DOES THIS CONCLUDE YOUR PRE-FILED DIRECT TESTIMONY?

A. Yes.

(HAGER DIRECT EXHIBITS A THROUGH D WERE
MARKED FOR IDENTIFICATION.)

Q. Do you have a summary of your direct testimony?

A. I do.

Q. Can you please read it at this time?

A. Yes. The purpose of my testimony on the Company's Amended Application is to discuss how the 2010 Duke Energy Carolinas IRP, filed in Docket Number E-100, Sub 128, supports the Company's decision to continue the development of the Lee Nuclear Station. Duke Energy Carolinas 2010 IRP identifies a need for additional capacity over the planning horizon of approximately 2,200 MW by 2020 and 6,000 MW by 2030. This capacity need incorporates the resources necessary to meet the future load obligations, plus the Company's 17 percent target planning reserve margin.

Consistent with its responsibility to meet customer energy needs in a reliable and economic manner, the Company's resource planning approach includes both quantitative analysis and qualitative considerations. Quantitative analysis provides insights on the potential impacts of future risks and uncertainties associated with fuel prices, load growth rates, capital and operating costs and other variables. Qualitative perspectives, such as the importance of fuel diversity, the Company's environmental profile, the stage of technology development -- deployment -- excuse me -- and regional economic development are also important factors to consider as long-term decisions are made regarding new resources.

The 2010 IRP reflects load growth of 1.8 percent average annual growth in both summer and winter peak demands, and a 2% average annual increase in total energy use over the 20-year planning horizon. The 2010 IRP also assumes the retirement of 370 MWs of our oldest, 1960's vintage, combustion turbines, as well as the retirement of 1,667 MWs of coal-fired generation. The 2010 IRP accelerated the projected retirement to 2015 of all of the Company's coal-fired generation resources without installed flue gas desulfurization facilities, also known as SO2 scrubbers, to reflect the anticipated impact of known and expected environmental regulations. The Company's 2010 analysis also includes a lower projection of natural gas prices than those used in

Duke Energy Carolinas' 2009 IRP analysis reflecting expectations of shale gas availability. The Company's 2010 fundamental CO2 allowance forecast was also lower than its 2009 forecast, primarily due to projections of lower natural gas prices, increased coal retirements, lower coal loads and increased projections with regard to the ability to use international and domestic offsets to meet CO2 reduction mandates. The 2010 IRP also incorporates projected load impacts for base levels and a high case sensitivity for energy efficiency and demand-side management resources and a level of renewable resources that is expected to provide 125 MW of on-peak contribution from renewable energy by 2012 and 520 MW by 2030.

The results of the quantitative and qualitative analyses suggest that combination of additional base load, intermediate, and peaking generation, renewable resources, and energy efficiency and DSM programs are required to meet customer needs over the next 20 years. The near-term resource needs can be met with new energy efficiency and demand-side management programs, completing construction of the Buck Combined Cycle, Dan River Combined Cycle, and Cliffside Unit 6 projects, as well as pursuing nuclear uprates and renewable resources. Over the duration of the planning period for the 2010 IRP, the portfolio chosen for the 2010 IRP is made up of 1,780 MW of new natural gas simple cycle capacity, 1,300 MW of combined cycle capacity, 2,234 MW of new nuclear capacity, 1,267 MW of demand-side management, 633 MW of energy efficiency, and 520 MW of renewable resources, in addition to Cliffside Unit 6 and Buck and Dan River CC projects.

Lee Nuclear Station would provide needed, reliable and greenhouse gas emission-free base load generation for Duke Energy Carolinas. Given the uncertainties posed by future economic, environmental, regulatory and operating circumstances, continuing to develop new nuclear generation as a resource option in the 2020 time frame is prudent. The Company's IRP analysis demonstrates that the Lee Nuclear Station has significant value for customers under multiple scenarios. For all the reasons stated previously, I believe that Duke Energy Carolinas' decision to incur continued development costs for the Lee

Nuclear Station is reasonable.

This concludes the summary of my direct testimony.

Q. Ms. Hager, did you also cause to be prefiled 14 pages of rebuttal testimony, along with four accompanying exhibits?

A. I did.

Q. Do you have any changes to your rebuttal testimony or exhibits at this time?

A. No.

Q. If I asked you the same questions within your prefiled rebuttal testimony today on the stand, would your answers remain the same?

A. Yes.

MR. CASTLE: Mr. Chairman, at this time I'd ask that Ms. Hager's prefiled rebuttal testimony be entered into the record as if given orally from the stand, and that her four rebuttal exhibits be marked for identification as prefiled.

CHAIRMAN FINLEY: All right. It looks like to me that a lot of this testimony is marked confidential. Is that correct?

MR. CASTLE: There's a portion of the testimony that's confidential and the first exhibit is confidential.

CHAIRMAN FINLEY: All right. Those designations, the prefiled rebuttal testimony of Witness Hager is copied into the record as if given orally from the stand, and her rebuttal exhibits are marked for identification as premarked in the filing.)

(THE PREFILED REBUTTAL TESTIMONY OF JANICE HAGER WILL BE COPIED INTO THE RECORD AS IF GIVEN ORALLY FROM THE WITNESS STAND.)

I. INTRODUCTION AND PURPOSE

Q. **PLEASE STATE YOUR NAME, ADDRESS AND POSITION WITH DUKE ENERGY CORPORATION.**

A. My name is Janice D. Hager. My business address is 526 South Church Street, Charlotte, North Carolina. I am Vice President, Integrated Resource Planning and Regulated Analytics for Duke Energy Business Services LLC, the service company subsidiary of Duke Energy Corporation (collectively "Duke Energy") and an affiliate of Duke Energy Carolinas, LLC ("Duke Energy Carolinas" or the "Company").

Q. **DID YOU PREVIOUSLY FILE DIRECT TESTIMONY IN THIS CASE?**

A. Yes.

Q. **PLEASE SUMMARIZE YOUR REBUTTAL TESTIMONY.**

A. In my rebuttal testimony, I address issues raised by Public Staff witnesses Michael Maness and Kenneth Ellis and by the Public Advocacy Group's witness, Peter Bradford. In my rebuttal, I reaffirm the need for and cost-effectiveness of the Lee Nuclear Project even in light of changing circumstances and a number of uncertainties.

II. NEED FOR THE PROJECT

Q. **MR. BRADFORD CLAIMS ON PAGE 5 OF HIS TESTIMONY THAT THE NEED FOR POWER HAS DROPPED DRAMATICALLY SINCE THE 2008 PROCEEDING. PLEASE ADDRESS HIS CLAIM.**

A. Mr. Bradford is not making an "apples-to-apples" comparison. For example, the 7000 megawatts ("MWs") of resources needed by 2018 referenced in the 2008 proceeding includes the needs that are being met by Cliffside Unit 6 and the Buck and Dan River combined cycle plants. Because these are now committed resources, they are excluded in the 2200 MW need in 2020 and 6000 MW need in 2030 referenced by Mr. Rogers in this proceeding. This alone accounts for 2100 MWs in the reduction of need.

As noted by Mr. Bradford, the load forecast is lower in the analyses used in this proceeding as compared to the forecast used in the 2008 proceeding. Specifically, the load forecast incorporated into the 2010 Integrated Resource Plan ("IRP") is lower by about 2000 MWs in the 2018 to 2021 timeframe than reflected in the 2007 IRP (the basis for the 2008 proceeding).

Despite Mr. Bradford's allegations to the contrary, based on the Company's analysis, Duke Energy Carolinas has a definite need for capacity that Lee Nuclear Station could satisfy. There is no question of whether there is a need for additional resources; the question is what is the best mix of resources to meet that need. Our analyses, as reflected in my direct testimony and the 2010 IRP, demonstrate that a portfolio made up of Lee Nuclear Station and the addition of a mix of renewable resources, energy efficiency, and natural-gas fired resources is the best portfolio for meeting customers' energy needs in a reliable, economical manner.

Q. THE PUBLIC STAFF ALSO EXPRESSES CONCERN ABOUT THE COMPANY'S 17% RESERVE MARGIN. PLEASE SPEAK TO THE CONCERN.

A. Duke Energy Carolinas has used a 17% target reserve margin for its resource planning for well over 10 years. The Company's rationale for its target reserve margin is presented in each IRP, in accordance with the requirements of the North Carolina Utilities Commission's ("the Commission") rules regarding the contents of the IRP and past Commission orders in utilities' IRPs. In its August 10, 2010 *Order Approving Integrated Resource Plans and REPS Compliance Plans* in NCUC Docket Nos. E-100, Sub 118 and 124, the Commission found that the reserve margins of the utilities, including that used by Duke Energy Carolinas, "are reasonable and should be approved." See Order at 9.[1] In the context of the currently pending IRP proceeding in Docket No. E-100, Sub 128, the Public Staff recommended that the Company be required to conduct a reserve margin study. The Company noted in its reply comments that it did not believe a comprehensive study was appropriate at this time. Duke Energy Carolinas' reply comments requested that if the Commission were to determine such a study is required that allow the study be conducted to consider the impact of the proposed merger between Duke Energy and Progress Energy, Inc. for a 2012 IRP filing. Such a study would incorporate the resource planning impacts of the planned joint dispatch of resources for Duke Energy Carolinas and Progress Energy Carolinas following the close of the merger of the holding companies of the two utilities. At present, however, the Company remains confident based on its historical experience that its target planning reserve margin of 17% is reasonable and appropriate under the circumstances.

[1] This finding is verbatim from the Public Staff's proposed order in that docket.

Q. WOULD AN INCREASE OR DECREASE IN THE RESERVE MARGIN AS A RESULT OF A STUDY HAVE AN IMPACT ON THE NEED FOR THE LEE NUCLEAR PROJECT?

A. A change in the level of the reserve margin would have little, if any, impact on the need for and economics of Lee Nuclear Station. For example, if the conclusion of a comprehensive reserve margin study referenced above was that Duke Energy Carolinas should raise or lower its reserve margin,[2] the likely impact to ALL portfolios considered in the Company's IRP would relate to the amount and timing of peaking capacity. Such a change would have a similar impact on the capacity costs of all portfolios and have no appreciable impact on the production costs of the portfolios. Thus, hypothetical changes to the Company's target reserve margin would simply not have a material impact on the need for or economic analyses of Lee Nuclear Station.

III. OTHER ISSUES

Q. IS THE PUBLIC STAFF CONCERN THAT DUKE ENERGY CAROLINAS HAS NOT PROVIDED A NO- OR LOW-CARBON REGULATION SCENARIO IN ITS IRP WARRANTED?

A. No. Duke Energy Carolinas provided three carbon scenarios in its 2010 IRP – a base carbon case, a high carbon sensitivity, and a Clean Energy Standard sensitivity. In each of these cases, portfolios with nuclear generation were more cost-effective than those without nuclear resources. While I think most would

[2] *It is unlikely that a study would result in a significant change in Duke Energy Carolinas' target planning* reserve margin. The target planning reserve margins for utilities are typically in the teens. A reserve margin below this level would increase the likelihood of exceeding the industry accepted standard 1 day in 10 years loss of load probability.

agree that carbon cap-and-trade legislation is not likely in the next few years, we believe carbon regulation or legislation over the life of the proposed Lee Nuclear Station remains likely. The U.S. Environmental Protection Agency ("EPA") has authority to regulate carbon emissions and is moving forward with doing so. Clean Energy Standard legislation has been proposed by President Obama and is currently being discussed in Congress. While a "no carbon" future is a possibility, the Company did not include a no carbon case in our 2010 IRP because we firmly believe it is a matter of how and when, not if, carbon emissions will be regulated.

Finally, it is important to remember that Duke Energy Carolinas is seeking to preserve the option for Lee Nuclear Station through this proceeding. The Company is not seeking a Certificate of Public Convenience and Necessity ("CPCN") in the present application. It certainly does not seem reasonable to stop the pre-construction or project development activities because of the uncertainties related to the legislation/regulation of carbon emissions.

Q. DID YOU PERFORM A NO CARBON SENSITIVITY?

A. Yes. Based on the Public Staff's interest in the "no carbon" possibility, the Company recently analyzed a "no carbon" sensitivity to its base case portfolio. We removed carbon emission prices from our production costing model and compared the portfolio with nuclear resources to the portfolio without new nuclear resources under the Base EE assumptions. The Public Staff interpreted this analysis as showing "that under a no carbon regulation scenario, the [portfolio made up of combustion turbines ("CTs") and combined cycle ("CC"), the CT/CC

Portfolio,] was [BEGIN CONFIDENTIAL [redacted] – END CONFIDENTIAL] more cost effective than the two nuclear unit portfolio." (Public Staff Testimony at page 10, lines 10 through 12). The Public Staff has misunderstood the results. In the no-carbon analysis, the CT/CC Portfolio is actually [BEGIN CONFIDENTIAL] [redacted] [END CONFIDENTIAL] more cost-effective than the 2 Nuclear portfolio. However, it is important to note that if we were truly in a "no carbon future," new coal generation may be cost effective and would likely replace the natural gas combined cycles in the CT/CC portfolio.

Q. THE PUBLIC STAFF SAYS THAT A MID CARBON, LOW FUEL COST SCENARIO WOULD "SUBSTANTIALLY" DELAY NEW NUCLEAR. DO YOU AGREE?

A. No. The Public Staff's conclusions appear to be based upon our System Optimizer ("SO") model results. We use the SO model to aid in the creation of portfolios for more detailed analyses. For each set of assumptions, SO will create the optimal resource portfolio. We perform analyses with SO using base assumptions and many sensitivities. Each analysis creates a unique portfolio. From these analyses, we create representative portfolios for analysis in our more detailed production costing model, Planning and Risk ("PAR"). The SO model selected varying amounts of nuclear between 2016 and 2030 depending upon the assumptions used. The Public Staff has highlighted one set of results. The Company looks at all of the results and then creates portfolios to represent the reasonable range of potential portfolios that could be beneficial to customers under a wide variety of potential future outcomes. Based on the SO results, we created five portfolios for analysis in the 2010 IRP. One of those was a portfolio with nuclear delayed until the 2026 – 2028 timeframe. Our analysis included consideration of delay in the completion of Lee Nuclear Station, but the results did not lead to a conclusion that delay was in the best interests of customers.

Q. HOW DO THE PROPOSED MERGER WITH PROGRESS ENERGY, THE OPTION WITH JEA, AND THE ACKNOWLEDGEMENT OF DISCUSSIONS WITH SANTEE COOPER ON THE SUMMER NUCLEAR PLANT IMPACT THE NEED FOR LEE NUCLEAR STATION?

A. As discussed by Mr. Rogers, Duke Energy Carolinas views regional nuclear generation as a prudent way to manage risk and provide benefits to customers. Thus, we agree with the Public Staff that there are great potential benefits to regional nuclear generation that can be realized by sharing costs and risks with other entities. The proposed merger with Progress Energy, the option with JEA, and the discussions with Santee Cooper all have the potential to further the goal of regional nuclear generation. But none of these are certainties today. At this point, our assumptions related to ownership of Lee Nuclear Station in the 2010 IRP reflect the current situation. As the items noted in the question become more concrete, future analyses can address their impact.

Again, I note that we are seeking a determination that it is prudent for Duke Energy Carolinas to preserve the Lee Nuclear Station option. We are not seeking a CPCN. Yes, uncertainties exist, but based on what we know at this time, I believe that going forward with project development is the most prudent course of action.

Q. HOW HAVE PROJECTIONS OF NATURAL GAS PRICES AND CARBON ALLOWANCE PRICES CHANGED SINCE THE PREVIOUS PROCEEDING?

A. Mr. Bradford states that natural gas prices are significantly lower than they were in 2008, citing a December 2010 EIA report. Duke Energy updates its projections of market fundamental prices (natural gas, power, etc.) on an annual basis. Interestingly, the projected long-term natural gas prices used in the 2010 IRP and the 2007 IRP, which served as the basis for the 2008 proceeding, are remarkably similar. The same is true of projected carbon allowance. As shown in Hager Confidential Rebuttal Exhibit A and Hager Rebuttal Exhibit B,[3] the values have been higher in the intervening years for both natural gas and carbon allowance projected prices, but the 2010 and 2007 prices are similar.

Although the fact of these price projections is interesting, it is not important. What is important is the results of our most recent analyses based on our current assumptions. *Duke Energy Carolinas' analyses do not bear out Mr. Bradford's opinion that new nuclear is not likely to be cost-effective due to low natural gas prices.* The Company's analyses for the 2010 IRP clearly show the portfolio with new nuclear generation is projected to be cost-effective for customers even in light of prices that take into account the relatively low projection for natural gas prices.

Q. MR. BRADFORD DISMISSES YOUR CONCERN ABOUT NATURAL GAS VOLATILITY. HOW DO YOU RESPOND?

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[3] The Company considers natural gas projections to be market sensitive since the Company is in the market for natural gas on a regular basis. The Company has not considered the carbon allowance price projections confidential since there is no current market.

A. I continue to be concerned about an over-reliance on natural gas because of the volatility of natural gas and the uncertainty of natural gas price projections. Historically, the market price for natural gas has always exhibited a high degree of price volatility, and long-term price forecasts have been equally fraught with uncertainty. In the historical period between January 1, 2000 and June 2010, the daily spot price at Henry Hub, LA, has fluctuated between $1.69/MMBtu and $18.48/MMBtu, with those two price extremes occurring just 16 months apart. Furthermore, although the spot price has averaged $5.77/MMBtu over that time span, it has closed above $10/MMBtu on 148 separate trading days.

Hager Rebuttal Exhibit C shows the resource mix in 2030 under the CC/CT portfolio as contrasted to the 2 Nuclear Units portfolio. The graphs show that without the addition of the Lee Nuclear Station, the percentage of energy generated from nuclear drops from 51% to 38% and the percentage of energy generated from natural gas increases from 10% to 21%.

To put into perspective the impact of volatility of natural gas on customers versus impact of the volatility of nuclear fuel prices, I looked at the impact of doubling the cost of natural gas versus the impact of doubling the nuclear fuel cost on each portfolio. See Table 1 for the impact of doubling natural gas prices and Table 2 for the impact of doubling nuclear fuel cost below.

Table 1 - Impact on Fuel Cost if Natural Gas Price Doubles			
Fuel Costs in Millions (2030)			
	Base Fuel Costs	Natural Gas X 2	% Increase
CC/CT Port	$6,300	$8,900	41%
2 Nuc Port	$4,900	$6,200	27%
% Delta	27%	44%	

Table 2 - Impact of Fuel Cost if Nuclear Fuel Price Doubles			
Fuel Costs in Millions (2030)			
	Base Fuel Costs	Nuclear X 2	% Increase
CC/CT Port	$6,300	$6,900	10%
2 Nuc Port	$4,900	$5,800	18%
% Delta	27%	19%	

The first interesting item of note is the projected Base fuel costs in 2030 for the two portfolios. The projected fuel costs for the portfolio with no new nuclear (CC/CT Portfolio) is 27% higher in 2030 than the portfolio with nuclear (2 Nuclear Portfolio). As shown in Table 1, if the price of natural gas were to be twice as high in 2030 as our current projections, the projected fuel costs for the portfolio with no new nuclear costs is 44% higher than the portfolio with new nuclear. As shown in Table 2, if the price of nuclear fuel costs were to be twice as high in 2030 as our current projections, the fuel cost for the portfolio with new nuclear is still projected to be 19% less than the portfolio without new nuclear. Betting on long-term low natural gas prices does not appear to be the best course of action.

Q. IS THE COMPANY ANTI-NATURAL GAS?

A. Certainly not. Duke Energy Carolinas is delighted to be adding its first combined cycle plants to its fleet as part of its fleet modernization. All portfolios analyzed for the 2010 IRP include new natural gas generation. The 2 Nuclear Units portfolio includes 1,780 MWs of new CTs and 1,300 MWs of new CCs, whereas the CC/CT portfolio includes 2,050 MWs of new CT generation and 3,250 MWs of new CC generation.

Duke Energy Carolinas believes the best portfolio for customers includes increases in nuclear generation as well as increases in natural gas, renewable, and energy efficiency. It is "both/and," not "either/or."

Q. MR. BRADFORD OFFERS A CENT/KWH PRICE OF NUCLEAR AND NATURAL GAS FIRED GENERATION ON PAGE 8 OF HIS TESTIMONY. *WHAT IS YOUR VIEW OF HIS FIGURES?*

A. First, I note that he does not say that the cost of new nuclear is 12 cents/kwh and natural gas is four to eight cents/kwh; he calls these an example. Therefore, I am not certain if he is saying that he believes that is the cost of these resources. Second, regardless of his calculations, levelized bus bar costs such as these are meaningless in resource planning. Sophisticated models such as those we use at Duke Energy Carolinas are needed to develop the most cost-effective portfolio of resources for customers.

Q. MR. BRADFORD CRITICIZES THE COMPANY FOR NOT DOING A COMPETITIVE SOLICITATION FOR POSSIBLE POWER SUPPLY RESOURCES. *PLEASE RESPOND.*

A. As discussed in the 2010 IRP, although Duke Energy Carolinas evaluates the competitive wholesale market for peaking and intermediate resources, the Company's purchased power philosophy does not currently include soliciting purchased power bids for baseload capacity. Duke Energy Carolinas views baseload capacity as fundamentally different from peaking and intermediate capacity. Currently, there are two key concerns with relying upon the wholesale market for baseload capacity. First, generation outside the control area could be subject to *interruption due to transmission issues more so than generation within the control* area. Second, supplier default could jeopardize the ability to provide reliable service. The Company therefore believes that Duke Energy Carolinas-owned baseload resources are the most reliable means for Duke Energy Carolinas to meet its service obligations in a cost-effective and reliable manner.

Q. MR. BRADFORD SAYS THAT NUCLEAR POWER IS NOT AN EFFECTIVE STRATEGY FOR FIGHTING CLIMATE CHANGE. DO YOU AGREE?

A. I do not agree. I note that even Mr. Bradford hedges his statement by saying that "*if nuclear power can be built cost effectively, this contribution would make the* climate change task easier" (Bradford at 17). As we state in our 2010 IRP, we believe that "to make real system reductions in CO_2 emissions additional nuclear generation is needed" (2010 Carolinas IRP at 94). Hager Rebuttal Exhibit D shows that without the addition of new nuclear generation, carbon emissions in 2030 will be substantially higher than in 2010, even with aggressive energy efficiency efforts and while meeting the North Carolina renewable energy and energy efficiency portfolio standard.

If we are serious in this country about reducing CO_2 emissions, we must be serious about making new nuclear generation a reality.

Q. MR. BRADFORD SAYS THAT NEW NUCLEAR GENERATION WILL RESULT IN A LOSS OF JOBS DUE TO INCREASE IN ELECTRICITY PRICES. PLEASE RESPOND TO THIS ALLEGATION.

A. Our IRP analyses are designed to measure the impact of various plans on customer rates. We use the metric of "present value of revenue requirements," with revenue requirements representing impact on customers. Thus, by selecting portfolios with the best potential to minimize the present value of revenue requirements, we are seeking to minimize the rate impacts on customers. Our analyses show that it is in customers' best interests for us to continue to pursue the development of Lee Nuclear Station, given its potential to minimize the impact to customers.

Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?

A. Yes.

(HAGER REBUTTAL EXHIBITS A THROUGH D
WERE MARKED FOR IDENTIFICATION.)

Q. Did you prepare a summary of your rebuttal testimony?

A. Yes.

Q. Would you please read it at this time?

A. Yes. The purpose of my rebuttal testimony is to address aspects of the joint testimony of Public Staff witnesses Michael C. Maness and Kennie D. Ellis, and the testimony of Peter Bradford filed on behalf of the Public Advocacy Groups on February 24th, 2011.

To begin, I would like to express the appreciation of Duke Energy Carolinas for the Public Staff's support of the Company's decision to continue to incur costs to develop Lee Nuclear Station. In their testimony, Public Staff's witnesses expressed concerns about the Company's 17 percent target reserve margin and the Company's failure to include no- or low-carbon scenarios as part of it's 2010 IRP. The Company has used a 17 percent target planning reserve margin for well over 10 years, and the Commission has found it reasonable in its past orders approving the

Company's IRP, including its most recent order approving the Company's 2008 and 2009 IRPs in Docket Numbers E-100, Sub 118 and Sub 124. Even if a study were to lead to a change in the Company's reserve margin, it would not impact the need for Lee Nuclear.

With regard to the failure to include a no- or low-carbon scenario in the IRP, the Company included three carbon regulation scenarios in its IRP. In each of these cases, portfolios with nuclear generation were more cost effective than those without nuclear resources. Notwithstanding, the Company created a no-carbon sensitivity that removed carbon emission prices from our analysis. This analysis demonstrated a portfolio of combustion turbines and combined cycle generation was more cost effective than nuclear. However, in such a future state with no carbon legislation, coal-fired generation, instead of CTs and CCs, would likely be selected as the most cost effective base load generation.

I also speak in my rebuttal testimony to the impact on the need for Lee Nuclear Station of the proposed merger with Progress Energy, the JEA option and the ongoing discussions with other partners. These all have the potential to further the goal of regional nuclear generation. However, these are not certain to occur at this time; the 2010 IRP reflects the current situation. As events become more concrete, future analyses can address their impact. Based on what we know at this time, I believe going forward with project development is the most prudent course of action.

Mr. Bradford, on behalf of the Public Advocacy Groups, suggests that low natural gas prices and a lower load forecast signal a diminished need for nuclear generation. However, the Company's IRP, which incorporates reduced load and natural gas prices, clearly shows the need for additional generation resources, including new nuclear. Although Mr. Bradford dismisses my concern about natural gas price volatility, I remain concerned. I note that since 2000, the spot price of natural gas has ranged from $2.00 to $18.00 per million BTUs, with those two extremes just 16 months apart. I provide information on the impact on the volatility of natural gas prices versus nuclear fuel prices, demonstrating that customer fuel rates are much more vulnerable to natural gas variances than nuclear fuel variances.

I also dispute Mr. Bradford's statement that nuclear generation is not part of an effective strategy for fighting climate change. In fact, without the addition of new nuclear generation, Duke Energy Carolinas' carbon emissions in 2030 will be substantially higher than in 2010. I note that if we are serious in this country about reducing CO2 emissions, we must be serious about making new nuclear generation a reality.

Finally, my rebuttal testimony discusses how nuclear generation is in customers' best interest due to its potential to minimize future rate impacts relative to other generation portfolios.

For these reasons, I believe the Commission should find the Company's decision to incur additional project development costs through the 2013 time period is reasonable and prudent in order to continue to preserve Lee Nuclear Station as an option to serve our customers' needs in the 2020 time frame.

This concludes the summary of my rebuttal testimony.

MR. CASTLE: We would tender Ms. Hager for cross examination at this time.

CHAIRMAN FINLEY: All right. Questions, Mr. Runkle?

CROSS EXAMINATION BY MR. RUNKLE:

Q. Good afternoon, Ms. Hager. How are you doing today?

A. I'm doing well. And you?

Q. All right. And in your testimony, you say that for your planning purposes, you're looking at energy efficiency and renewal energy to meet the REPS requirement of 3 percent of the 2010 retail sales in the year 2012?

A. Can you point me to that place in my testimony, please?

Q. I'm having computer troubles. Just a minute.

A. Can you try the question again? I'll look.

Q. Here it is. On page 10 of your prefiled testimony, looking at overall requirements of time for planning purposes of your basic assumptions about what's needed to meet your REPS.

A. Okay.

Q. And looking at how the -- just pick one -- the 12.5

percent in the 2020 retail load by
2021, --
A. Yes.
Q. -- and looking at a breakdown by energy efficiency, what percentage of the 12.5 percent of the energy efficiency?
A. Five percent can be energy efficiency. You can count up to -- you can meet up to 5 percent of that requirement with energy efficiency.
Q. And what does -- running out the IRP, what percentage does Duke propose to have in 2020?
A. I don't know that we are quite to the five percent in that time frame. Maybe, I think in 2021 we are. Can you give me just a second and I'll look?
Q. Yes, ma'am.
A. I think we're very close that in 2021.
Q. And so the 5 percent of the REPS requirement in 2021.
A. Yes, but I think it's important to note that that was not a limit to our energy efficiency. It just happens to be where our -- the energy efficiency accomplishments we're projecting fit with our ability to count those towards the REPS requirement.

Q. And so in the definition of energy efficiency, do you include the demand-side management options?

A. No, I don't for the purposes of counting them toward meeting a REPS requirement because they typically have virtually no energy associated with them.

Q. And then looking at the 2020 time period, you also talk about biomasses in the existing units. How much biomass are you planning to -- for planning purposes to have in 2020?

A. I don't believe I have that information.

Q. What about purchasing the renewable energy certificates from out of state?

A. We do plan within our resource planning for meeting our REPS requirement, we are planning to -- planning on the fact that we believe that it will be cost effective to take advantage of that ability to meet 25 percent of that requirement with out-of-state RECs. That has certainly been our case than what we've experienced so far.

Q. *And some of those out-of-state RECs are projects* that Duke owns and operates?

A. Not to my knowledge.

Q. Were any of the RECs on Duke's wind projects in

Texas and Colorado?

A. I know that we have bought wind RECs. I do not know that they were associated with our projects.

Q. Let me, then, look at your Exhibits B and C. And Exhibit B is 2011 Duke Energy Carolinas Capacity and Energy, and C is the Year 2030.

A. Yes.

Q. Now, looking at the -- for capacity, looking at demand-side management of 4.6 percent and .2 percent renewables, so that would be where Duke is now?

A. I think I flipped too far, maybe. Yes.

Q. And then with energy, it's 4. -- .4 percent DSM and energy efficiency combined and .2 percent renewables?

A. Yes.

Q. And then by 2030, those numbers increase to, for a capacity of DSM 5 percent and renewables 2 percent?

A. Yes.

Q. And then for energy is the 3 percent for renewables and 4 percent is for DSM and EE?

A. Yes.

Q. Now, I'm trying to reconcile that with the earlier planning goals of 12-1/2 percent to meet the REPS requirements that you use in planning. I'm trying to -- for planning purposes you have a certain -- you know, 12 percent by 2020, and then looking at 2030, it appears to be in your actual capacity energy, seems to be far less than that.

A. I have an explanation for that.

Q. Okay.

A. So if you look at the 12-1/2 percent requirement in 2021, and it will be the same 12-1/2 percent in 2030, that is a North Carolina requirement. So the first thing you've got to recognize is that it's not applicable to all of our load. We did make an assumption that our South Carolina retail load would be subject to a similar renewable portfolio standard. We essentially took the renewable energy piece of that standard, so the -- it's about 7 -- 6 percent or so, once you've taken off the amount that can be met with energy efficiency and the amount that could be met with out-of-state RECs. You'd have a percentage left over to be met with renewable energy, so we've simply assumed that that applies to South Carolina retail as well, even though there is no REPS standard in South Carolina. And then we've also included meeting a portion of our wholesale customers REPS requirements as well. But there's another portion of our wholesale customers for whom we do not need the renewable portfolio standard. Either they've chosen to meet it themselves or they're not -- or they're not subject to a standard. So that would dilute that number somewhat. In addition to that, we -- in the 2010 plan for the first time, we anticipate that we would hit the cost cap on the REPS rider, and that that would limit how much renewable energy we would be including in our plan. And so that's what pushed that number down from an expected -- what should have been about 6 percent down to about 4 percent.

Q. And on the renewable side or the DSM energy efficiency side?

A. That would be on the renewable side.

Q. Now, looking at the 2030 renewables, it's down to 3 percent energy and 2 percent capacity. What percentage of that is solar energy?

A. It would be the amount of the carve-out, and I'm not sure what that -- I don't know what percentage that is.

Q. That would be the allocation under Senate Bill 3 for solar energy?

A. Yes. It's .2 percent.

Q. And is Duke proposing to have any additional solar than the carve-out? Is that your restriction right now?

A. We do not have any additional reflected in our IRP based on its cost. It's one of the more costly renewable resources that we consider and, therefore, we have -- our method of meeting our renewable portfolio standard is to meet our carve-outs and then to look at the best options we have for the general RECs. Landfill gas has been a very good option for us, but that's limited. Beyond that, biomass has good potential. And that would make up the vast majority of what we would project we would be using to meet our renewable obligations.

Q. And so in the -- by 2030, is there any part of the renewable obligation that is wind?

A. One moment. Yes. And Mr. Runkle, I direct you to page 81 of our 2010 IRP. You may not have it with you. But we do show having wind, solar and biomass as available to meet our resource needs, and we're showing that on a MW basis as opposed to a MWh basis, so it doesn't translate quite as easily.

Q. Excuse me. What page was that?

A. Page 81.

Q. Page 81.

A. So by 2030 we show 147 MW of wind -- that's nameplate -- 74 MW of solar, 461 MW of biomass, for a total of 683 MW.

Q. And so I understand from some of the federal studies that offshore wind in North Carolina has a fairly large potential. Are you familiar with those studies?

A. Yes. I wouldn't say I'm terribly familiar with them, but I'm generally familiar with them.

Q. And yet by -- looking at 2030, it's 147 MW, and MW contribution is 22 MW for wind. So is there any what's called offshore wind in the IRPs?

A. I don't know.

Q. Now, on your rebuttal testimony on page 13, you make a case that nuclear is good for air quality, for clean air, it should be used in carbon reduction?

A. Yes.

Q. In your opinion, how many nuclear plants are needed in the United States to have an impact on carbon dioxide?

A. I don't know.

Q. How many, in your opinion, would be needed in North Carolina to have any real impact on carbon dioxide?

A. I could speak to our system, and I think that's what my Exhibit D speaks to. What we show there is that with doing all of the cost effective energy efficiency that we have been able to identify or planning to do, and even going beyond that with doing renewable to meet renewable portfolio standards even in South Carolina where they don't exist to date, we would show that unless you add nuclear to the mix, you are going to see an increase in carbon dioxide emissions over the -- above our 2010 levels without the addition of a Lee nuclear.

Q. Now, in your summary of your direct testimony on the second page, the first full paragraph, you talk about your near-term resource needs can be met by the Buck Combined Cycle plant?

A. Yes.

Q. Now, was the schedule for the Buck Combined Cycle plant delayed from when it received its certificate?

A. Yes.

Q. How long is it delayed?

A. I think about things from a peak perspective. I think we definitely moved it such that it was moved away from one peak to the next year, so it may not have been a full year delay, but it was -- from my planning standpoint, it looked like a year delay.

CHAIRMAN FINLEY: Mr. Runkle, is this a time that you could allow us to take a break for 15 minutes?

MR. RUNKLE: I have three more questions. We can take a break and come back, if you want to.

CHAIRMAN FINLEY: Well, just save your three questions. We'll take a break until 4:00.

(RECESS TAKEN FROM 3:47 P.M. UNTIL 4:00 P.M.)

CHAIRMAN FINLEY: All right. Let's have a seat, and we'll come back on the record, and Mr. Runkle has some more questions.

Q. I just asked you about the Buck Combined Cycle. Now, on the Dan River Combined Cycle, is that still on schedule?

A. We are planning to finish that at the end of 2012, yes. I don't recall the original schedule, but that is the schedule now.

Q. And how about the Cliffside 6? Is that still on schedule?

A. Yes, it is.

Q. All right. Now, your reference to the 2010 IRP, that's filed in Docket E-100, Sub 128, is it not?

A. Yes.

Q. And that hasn't been approved by the Commission yet, has it?

A. That's correct.

MR. RUNKLE: No further questions.

CHAIRMAN FINLEY: Ms. Force?

CROSS EXAMINATION BY MS. FORCE:

Q. Good afternoon, Ms. Hager.

A. Good afternoon.

Q. I'm pinch hitting for Mr. Green, and I have a few questions for you. In this proceeding, Duke is requesting approval in part for costs of $36 million that were incurred for development costs during 2010. Isn't that right?

A. I believe that is --

Q. I should say approval of a decision to incur those costs.

A. I'm really not sure.

Q. You're not sure of the amount?

A. No.
Q. And would you agree with me that you're looking for approval with respect to the decision to incur some costs from 2010?
A. Yes.
Q. Okay. But there was a proceeding that was filed, I think, in 2006 requesting prior approval to incur costs in 2007. Isn't that right?
A. I just don't know.
Q. You don't know?
A. No.
Q. Do you have any recollection whether it was -- the proceeding for approval of the decision took place before the year in which those costs were incurred, and the filing was made before that?
A. No.
Q. Okay. At the end of 2007, in December of 2007, Duke requested prior approval to incur costs for 2008. Does that sound familiar to you?
A. I am really not trying to be difficult.
Q. Did I say that right?
A. I just was -- I just don't recall. I know that we had a hearing in 2008. I know that the proceeding was based on our 2007 IRP. The reference to the

timing and the amounts, it's just not my area of expertise.

Q. I'll submit to you that the order in E-7, Sub 819, that's the Order Approving Decision to Incur Project Development Costs, it says in the first sentence, "On December 7, 2007, Duke Energy filed an Application for Approval to Incur Continued Costs."

A. Okay.

Q. Could you explain why Duke did not file in 2009 or a proceeding concerning costs in 2009?

MR. CASTLE: I would object to this line of questioning. Mr. Rogers was here earlier today, Mr. Jamil was here earlier today. Ms. Hager is offered as a witness with respect to our integrated resource planning process, not about the company's ultimate decision whether to file applications or not.

CHAIRMAN FINLEY: In this state we have unlimited cross. The cross examination is not limited to the direct examination. If Ms. Hager knows the answer, she must answer. If she doesn't know, she can say so.

A. Would you ask the question again?

Q. Sure. Could you comment on why Duke did not file in advance to request for prior approval of its decision to incur nuclear development costs in 2010?

A. No.

Q. Okay. Do you know and could you comment on the decision to ask for four years of costs in this case, from 2010 to 2013, and why it is that there's the decision to seek prior approval of four years' worth of cost in this proceeding? Do I have that --

A. What I do know is that the -- I believe Mr. Jamil touched on this, that we were -- our original filing was intended to get us to a point where we thought we would be through having a CPCN in hand, and that that would end the predevelopment cost, period. Now we've extended that because we have delayed our thinking on when we will need a CPCN, therefore, the 2013 date is tied to receipt of the COL and likely filing for the CPCN and related filing in North Carolina.

Q. Would you agree that where the Commission projects costs out into the future as far as 2013, that that makes it more difficult for the Commission to decide whether the decision to incur those costs, it's more difficult to make that decision that they are reasonable and prudent today?

MR. CASTLE: I'm going to object to that question. I'm a little bit confused about what you're asking. Could you rephrase it?

MS. FORCE: Sure.

Q. The fact that the Commission projects out into the future, such as 2012 and 2013, would you agree that it's more difficult for the Commission to decide whether the decision to incur those costs are reasonable and prudent?

A. I would agree that the further out in time you go, the more difficult it is. We're really talking about from here going forward, a period of 21 months, perhaps. Is that right, or is it longer? It's more than that. It's 2-1/2 years. But I think that's the whole nature of the idea of seeking approval for predevelopment, that it's prudent to incur predevelopment costs, that they have to be projections of costs.

Q. Would you agree that the farther the Commission projects those costs out into the future, such as 2012 and 2013, the more the risk of such costs from abandoned plan gets shifted to consumers? Would you like me to say it again?

A. Yes.

Q. Okay. The farther the Commission projects out into the future, such as 2012 and 2013, would you agree that the more the risk of such costs from abandoned plan will be shifted to consumers?

A. I don't think so, and I think the reason I don't think so is simply having approval doesn't mean we go forward blindly without taking into consideration whatever is happening. And, therefore, if we were -- whether we were a month in or a year or two years into the process, if we determined it was time to -- that it was in the customers' best interest to abandon this plan, then I think we would do so regardless of where we were in terms of how far into the predevelopment cost time period that would work. One of the issues I think you run into -- you know, I know that the Public Staff has talked about a June 12 date as a potential cutoff, well, I think that would lead us to be filing by the end of this year for a request that would tag on to a request that would end June 30th, and I think the concern is you won't know a whole lot more by the end of 2011 than you know now, so I think there's a balance there. It's a balance between not getting too far ahead of your headlights, but also not being in here on a, you know, every few months, and making sure that there's enough information available to really help make a decision.

Q. *Do Duke's IRP projections show that all of the Lee* Nuclear Station's capacity will be needed by Duke when the plant is completed?

A. Our IRP shows that in the majority of the scenarios that we looked at, that having both units dedicated to Duke Energy Carolinas' customers was the lowest cost to customers. Did I answer your question? If you'll ask it again, I'll try it again.

Q. Yeah. I'm trying to think of -- and are you saying, then, that the projection for the capacity -- I think we're talking now about 2021, that you are showing a need for the capacity at the time that the plant would be completed?

A. Yes. We do have a need for capacity in the 2021 time frame. If you look at our reserve margins that we show in 2021, we're above our 17 percent planning reserve margin. What our models would show is that you are willing to be a little above that for the short period of time, for a year or two because of the benefits you would get by having that generation available in 2021. We're showing that it's in the best interest of customers to have that generation available in 2021 to serve customers, even if it does because of just the lumpiness of generation. Adding a large generating unit in any one year will take you from being below your reserve margin to being high in your reserve margin. Even in that circumstance, our analysis would show that having that generation available for customers in 2021 is best.

Q. *Okay. So now you have the option that the* Jacksonville Electric Authority has acquired, I think, to purchase up to 20% of the Lee Nuclear Station. Isn't that right?

A. That's correct. They do have an option.

Q. Have you performed any quantitative analysis to determine how you would meet that additional capacity if JEA exercises its full option?

A. We do have analyses. They're not reflected in our IRP that we filed, but we do have analyses where we also looked at having one unit available instead of two units. And that's not exactly a JEA analysis. It's not -- because the JEA analysis would be 40 percent of one unit, or 20 percent of the total plant, I should say. And what those analyses would show is that it is generally not as cost effective to have less than two full units, though it does diminish purely from an IRP present value revenue requirements basis, it diminishes the cost effectiveness. But I think there's just -- there's so many benefits of regional generation for both customers and, as mentioned by Mr. Rogers, for shareholders as well, of sharing that -- of sharing the risk, sharing the cost, sharing the benefits, that we don't look at things just strictly from that present value of revenue requirements basis.

MS. FORCE: Thank you. I don't have any other questions.

CHAIRMAN FINLEY: Ms. Rankin?

MS. RANKIN: I just have a few.

CROSS EXAMINATION BY MS. RANKIN:

Q. One thing I'm curious about is why you would need to file by the end of the year if the Commission adopted our June 30th, 2012 deadline? The first time you filed in September of '06 for through

December 31st, '07. The second time you filed December 7th of '07 for '08 and '09. So why would you need to file eight months, seven months earlier this time?

A. We would -- we would do that if we did not want any lapse in the time between an order covering those expenditures. Obviously, we chose not to do that in this most recent proceeding. I believe someone was concerned about that and raised some issues about it and, therefore, if we wanted to avoid that, then we would need to make that filing. But certainly, there's no requirement, and I believe that could be your point.

Q. I have just a few questions about your rebuttal testimony on pages 7 and 8, and I'm going to try to do this without revealing confidential information. If you want to give specifics and you can because it isn't confidential, feel free, and then I'll pick up on what you say, but if you can keep it general because you need to, that's fine, also.

On page 7 you are talking about our conclusion that the CT/CC portfolio is more cost effective than the two nuclear portfolio if you use a medium C02 low fuel scenario, for lack of a better word. Is that correct? On line 12, that's what you're talking about, our conclusions relate to what we said --

A. Yes.

Q. -- in the paragraph above, correct?

A. Yes.

MR. CASTLE: Hold on one second. I think -- if I can, I would say that that deals with the no carbon sensitivity, not the medium carbon, low fuel. Is that right?

MS. RANKIN: Okay. Because we made both remarks in the same confidential place. Wait just a second and let me make sure. Okay. So this is the no carbon. Okay.

Q. That actually makes me more confused about your answer. You're saying we're highlighting one set of results, but you didn't actually do that analysis, correct? You didn't use -- you used a fairly high cost of carbon as your lowest cost, correct, compared to prior IRP proceedings?

A. Let me find the line again that you're -- when I say you highlighted one set of results.

Q. It's line --

A. I see that one. Okay.

Q. -- 20.

A. We did a system optimizer analysis, and in the system optimizer analysis you give the model a set of assumptions and you allow it to optimize exactly where -- if it just had all the freedom in the world, how it would do generation. And it will put 100 MW here and 50 MW there and 3 MW here, whatever it optimally needs, and then we step back from that and we do -- we create portfolios from that and then we test those portfolios under a wide range of assumptions. So we did that. We did that case for system optimizer. I don't recall if we ran this for planning and risk. We certainly did not report it in the IRP. We typically run a wide variety of sensitivities and then choose the ones we think are most informative for us, for senior management and for the Commission.

Q. But then you ran it at our request.

A. We ran a no carbon at your request. I don't know that we ran anything related to mid carbon, low fuel.

Q. Okay. Isn't it an actual fact that more of your optimizer -- system optimizer runs than the one that we requested you do after the fact push the nuclear off into the 2026, 2028 time period? We highlighted one result, but isn't it a fact that there were more than one?

A. There were more than one. There were also those that put generation in 2016, put nuclear generation in 2016. It was -- it was really very broad. It was -- a lot of times it put a few MW in every year.

Q. The one that put a significant amount of nuclear in the earlier time period was the Clean Energy Standard, though, is that correct, the federal law?

A. I don't have that information in front of me, but that is my recollection as well.

Q. We did that without the confidentiality problems. Let's try this one last thing. After you did your portfolios, you then compared them to each other using various sensitivities. And in the information you gave us, they were high CO_2, high fuel, low fuel and medium CO_2. IS that correct? And I can show you where I'm looking at, if it helps.

A. I will take your word for that, and if I need to look at it, I'll let you know.

Q. Okay. Isn't it true -- and you can take this subject to check, if you need to -- the four sensitivities that I just named, isn't it true that two of them showed the nuclear delay case -- the two nuclear delay case to be more cost effective than the two nuclear case?

A. Can I look at those, please?

MS. RANKIN: If I may.

CHAIRMAN FINLEY: Yes.

A. I haven't done the math here, but I would really call all of these an absolute wash. I think they are so close in results.

Q. Two are higher and two are lower. Is that correct? I did the math.

A. There's five cases here, so I'm not sure --

Q. Oh, I meant the four scenarios or whatever you call them. I hesitate to call them anything because I'm afraid I'll confuse the record.

A. I will agree with you that two are higher and two are lower, but I would also, again, say that I think they are so close that it's -- it wouldn't be meaningful to draw a distinction there.

Q. I have one last question. Mr. Rogers testified about retiring Oconee in 2030.

A. Yes.

Q. That retirement is not reflected in your 2010 IRP, is it?

A. That is correct. The actual end of the license period, I believe -- he may have said 2031, he may have said 2030. I believe it's really closer to 2032. But one of the things I would note is that as we get toward the -- I think, first of all, I don't think a firm decision has been made that we wouldn't pursue a relicensing of the Oconee Station. We still have a period of time to give that some consideration. But even -- let's presume we do not make that decision to pursue relicensing. That doesn't mean that that plant is going to run flat out at the wonderful capacity factors we've seen to date up till that time frame. One of the things that could happen is in 2025, you could have a failure of some component, that you'd sit there and look at I know I only have seven years to recoup that cost; it's not worth it to customers. I'm better off to retire that plant and replace that capacity. So it's not to say that's a -- having it -- if we were ultimately to have a 2032 date out there as the known date by which we had to retire this plant, that that means we'd be able to use it for that period of time.

Q. Thank you for that clarification.

MS. RANKIN: I have no further questions.

CHAIRMAN FINLEY: Redirect, Mr. Castle?

MR. CASTLE: I just have a few questions.

REDIRECT EXAMINATION BY MR. CASTLE:

Q. Ms. Hager, let's first go back to your direct testimony -- I think it's on page 10 -- where Mr. Runkle was referring you to the REPS portfolio requirements.

A. Yes.

Q. Now, when you referenced that 5 percent of that 12-1/2 percent requirement in 2021 could be met by energy efficiency, is that intended to take into account the limitations in REPS on the amount of energy efficiency you can use to meet that general requirement?

A. As I understand your question, I think that's all that 5 percent is, is it's how much can be counted. And ask I said, it's certainly not intended to say, well, we say once we get the 5 percent, we've arrived.

Q. Right. So the company's energy efficiency and demand-side management plans are not based on their ability to be able to be used to meet REPS compliance.

A. That is correct.

Q. You also made a statement in response to some of Mr. Runkle's questions about the use of out-of-state REC purchases to meet the company's REPS requirements?

A. That's correct.

Q. And I just wanted to -- you stated, correct me if I'm wrong -- that so long as they're cost effective, the company intended to use -- to meet up to 25 percent of its REPS requirements with out-of-state RECs.

A. That is correct. To the extent that we did not have access to cost effective out-of-state RECs, we would have to meet that requirement through the use of renewable energy that was delivered in state.

Q. Mr. Runkle also asked you, I think, in reference to your Exhibit B to your direct testimony about the amounts of renewables and energy efficiency and DSM reflected in the capacity and energy charts.

A. Yes.

Q. Does Duke Energy Carolinas screen renewables and energy efficiency and demand-side management resources against traditional supply-side resources in its IRP analysis?

A. Yes, we do. Let's talk about renewables first. We do a screening process for opportunities that we have to procure renewable energy, and we do screen them against traditional resources, against the avoided capacity and avoided energy cost that we would see if we were to take advantage of this renewable opportunity. And what we have seen time and time again is that other than the occasional landfill gas opportunity, which are typically very small, that each of these resources is more expensive than the -- than a traditional resource. And that's why what you'll see reflected in our IRP isn't going beyond that REPS requirement or an assumed renewable requirement, because we would see that that would be more costly for customers.

With regard to energy efficiency, we do screen those as well outside of the IRP models as -- against the avoided capacity and energy cost. And we have included -- all energy efficiency that passes those screens are included in our IRP, so we're not cutting off any energy efficiency. We're including all that we screen that passes those cost effectiveness tests.

Q. So is it fair to say that, you know, if renewable resources and if energy efficiency, demand-side resources were more cost effective as compared against traditional supply-side resources, more and more of those renewables energy efficiency would be reflected in future IRPs?

A. Absolutely.

Q. Ms. Force asked you a few questions around the costs incurred by the company in 2010 to develop the Lee Nuclear Station project.

A. Yes.

Q. Do you remember that?

A. Oh, yes.

Q. The Company's IRPs filed in 2008 and 2009 have been approved by the Commission, correct?

A. Yes.

Q. And that the Company's decision to continue to incur costs relating to the development of the Lee Nuclear Station project was based in part on the analysis reflected in those 2008 and 2009 IRPs, correct?

A. I presume so.

MR. CASTLE: That's all I have. Thank

you.

CHAIRMAN FINLEY: Questions of Ms. Hager by the Commission? Commissioner Brown-Bland.

EXAMINATION BY COMMISSIONER BROWN-BLAND:

Q. Ms. Hager, I'm looking at your public rebuttal testimony, I believe, --

A. Okay.

Q. -- on page 8 at the top there. This flows over from your discussion about the system optimizer model. And the last sentence at the top of that page there in that paragraph that begins that page says "Our analysis included consideration of delay in the completion of Lee Nuclear Station, but the results did not lead to a conclusion that the delay was in the best interest of customers."

A. Yes, ma'am.

Q. What was it about it that came out of the model or maybe more broadly, what do you mean there about the delay was not in the best interest?

A. What the analysis showed, and it was really what I was discussing with Ms. Rankin, is that there was really no difference from our analysis viewpoint between completing the plants in 2021, '23 time frame and in the 2026 time frame. So from a pure

IRP present value of revenue requirement standpoint, we didn't show a big difference, but I think there are a couple things to keep in mind there.

One of the things we were doing and the reason that we looked at that analysis, first of all, was because our SO analysis, our system optimizer runs, were showing that the need for the nuclear could vary, depending on what we were assuming about what the future looked like. So we wanted to look at both holding the schedule and delay.

The second thing there is that what we were really looking for was, was there -- did it make a big difference? Did it make it a lot more cost effective? Did it make it a lot more expensive? Really looking to see if there was something very definitive there, and we really didn't find anything definitive.

And the third thing to keep in mind as we did that analysis was that we simply assume that the cost would escalate at a rate of inflation, that a plant that you would have finished that was based on completion in 2021 would have escalated at a 2.3 or 5 percent escalation rate between 2021 and 2026. And I think there is -- I think it would be difficult to make that assumption without a lot more work. If what we had seen in that analysis was it really looked like there was a big benefit to customers to delay, I think we would have gone to Mr. Jamil and to his folks and said let's look at that further. We need to do a lot more work on how we think cost would come out, what we would do in the meantime, you know, thinking about how we would do regional nuclear, et cetera. But what we saw from that analysis was no reason to change from the schedule that we were on.

Q. And another question I have is what's behind Duke's fears of price volatility in terms of relying on natural gas as a fuel source? Are there factors that suggest to the company that there are issues in obtaining reliable natural gas supplies from shale opportunities?

A. There are -- I think it's just the known history of natural gas and its price volatility. As I noted in my testimony, from a spot price perspective, it has been all over the board over the past 10 years. If you'll look at our projections of gas prices which we've provided as Exhibit -- I think it's my Rebuttal Exhibit A -- it's confidential -- but you'll see that even our future projections of prices have jumped up and down, so we really have a -- we're a little reluctant to make a big bet on natural gas for fear of the unknown about what the future price is and how volatile it will be.

Now, you can enter into contracts for natural gas. I'm certainly not an expert on that. I think there are things that you can do, but there will be a premium associated with locking in a price well in advance.

So that's the key, and so as I said, we are not anti natural gas. If you look at the portfolio that includes Lee, it would have four combined cycle plants in it. It would have Buck, Dan River and two, you know, to-be-named-later plants. But it's a matter of getting a portfolio that is too dependent on natural gas.

What I have observed in fuel proceedings over the years is that -- and I used to be in the rate area and used to have to testify on fuel -- that customers don't notice a lot when their fuel rates go down, but if you have a sudden spike up, they're not very happy. And that's the sort of thing that we have really been able to avoid a lot of by having very stable fuel prices for nuclear. And as I show in my testimony, you know, the price of nuclear fuel is such that even if you double it, it is not something that would be of tremendous concern in terms of its impact on fuel rates.

I think you'll also note that adding the Lee Nuclear Station only keeps us at the same level of energy for nuclear as we have today, so that it's not a -- we're, you know, ramping that up significantly to a point where we would be, in my view, overly dependent on nuclear. It's a matter of really holding -- you know, holding our ground on nuclear. That's in the face, then, of future retirements of nuclear.

Q. Does Duke see any difficulties or, you know, have any doubts about the shale opportunity? Is there any uncertainty around the shale itself?

A. There is uncertainty. I'm not an expert on it. I think that there are concerns about -- I think you heard Mr. Rogers say whether it's a mirage or reality. I think there are concerns about its environmental impact, concerns about water usage related to it. I think we are counting on shale gas. The gas prices we reflect in our 2010 IRP are based on having availability of shale gas at a very good price, but there is concern there. It's an unknown. We certainly hope it does develop.

Q. And the last question I had is does Duke intend to recover the nuclear development costs in the upcoming rate case?

A. No. I think I can say that definitively.

COMMISSIONER BROWN-BLAND: Thank you.

CHAIRMAN FINLEY: Questions on the Commission's questions?

(No response.)

CHAIRMAN FINLEY: All right, Ms. Hager. Thank you very much.

MR. CASTLE: We'd like to have Ms. Hager's exhibits to her direct and rebuttal testimony entered into the record.

CHAIRMAN FINLEY: Ms. Hager's direct and rebuttal exhibits are admitted into evidence.

(HAGER DIRECT EXAMINATION EXHIBITS A THROUGH D AND HAGER REBUTTAL EXHIBITS A THROUGH D WERE ADMITTED INTO EVIDENCE.)

CHAIRMAN FINLEY: Does that complete your case?

MS. SHAFEEK-HORTON: It does.

CHAIRMAN FINLEY: All right. Ms. Rankin?

MS. RANKIN: The Public Staff calls Michael C. Maness and Kennie D. Ellis.

(WHEREUPON, MICHAEL C. MANESS AND KENNIE D. ELLIS WERE CALLED AS WITNESSES, DULY SWORN, AND TESTIFIED AS FOLLOWS:)

DIRECT EXAMINATION BY MS. RANKIN:

Q. Please state your name and your position with the Public Staff, for the record.

A. (MANESS) My name is Michael C. Maness. I am an Assistant Director in the Accounting Division of the Public Staff.

(ELLIS) My name is Kennie D. Ellis, and I'm an Engineer in the Electric Division of the Public Staff.

Q. Did you cause to have prefiled on February 24th 17 pages of testimony in question and answer form, and two appendices, both in a public version and in a confidential version?

A. (ELLIS) We did.

Q. Do you have any revisions to make to that testimony?

A. (MANESS) We do.

MS. RANKIN: And for the record, I will say that Ms. Force is handing out pages with the changes made on it for the Commission's convenience.

A. (MANESS) I'll describe the changes. The changes would be made both to the public version of the testimony and to the confidential version, but only in the public version section of each, so I will just describe them as related to the public version.

On page 10, beginning on line 11, delete the words "cost effective than," and put in their place "advantageous, relative to." And then at the end of the sentence after "portfolio," insert a comma and then the words "than it is in the case described above."

Q. With that revision, are the answers in your prefiled testimony correct today?

A. (MANESS) Yes.

MS. RANKIN: I ask that the testimony be copied into the record as if given orally from the stand, and the appendices be accepted as part of the testimony.

CHAIRMAN FINLEY: The corrected prefiled testimony of Mr. Maness and Mr. Ellis is copied into the record as if given orally from the stand, and the appendices attached thereto are identified as marked in the filing.

(THE PREFILED JOINT TESTIMONY OF MICHAEL C. MANESS AND KENNIE D. ELLIS, AS CORRECTED, WILL BE COPIED INTO THE RECORD AS IF GIVEN ORALLY FROM THE WITNESS STAND.)

PUBLIC VERSION

FILED
FEB 24 2011
Clerk's Office
N.C. Utilities Commission

DUKE ENERGY CAROLINAS, LLC
DOCKET NO. E-7, SUB 819

JOINT TESTIMONY OF MICHAEL C. MANESS AND KENNIE D. ELLIS ON BEHALF OF THE PUBLIC STAFF-NORTH CAROLINA UTILITIES COMMISSION

February 24, 2011

Q. PLEASE STATE YOUR NAME, ADDRESS, AND PRESENT POSITION.

A. My name is Michael C. Maness. My business address is 430 North Salisbury Street, Raleigh, North Carolina. I am an Assistant Director of the Accounting Division of the Public Staff, which is charged by statute with intervening on behalf of the using and consuming public in Commission proceedings affecting public utility rates and service. My responsibilities with the Accounting Division include matters involving electric and water/sewer utilities.

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

A. I have been employed by the Public Staff since July 12, 1982.

Q. WHAT ARE YOUR DUTIES?

A. I am responsible for the performance, supervision, and/or management of the following activities: (1) the examination and analysis of testimony, exhibits, books and records, and other data presented by utilities and other parties 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 to this testimony as Appendix A.

Q. PLEASE STATE YOUR NAME, ADDRESS, AND PRESENT POSITION.

A. My name is Kennie D. Ellis. My business address is 430 North Salisbury Street, Raleigh, North Carolina. I am a Public Utility Engineer with the Electric Division of the Public Staff.

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

A. I have been employed by the Public Staff since May of 2003.

Q. WHAT ARE YOUR DUTIES?

A. I am responsible for the review, investigation, and presentation of appropriate recommendations to this Commission with respect to the reasonableness of rates charged and the adequacy of the service provided by electric utilities. I also am responsible for the review and analysis of testimony, exhibits, and other data presented by utilities and other parties in Commission proceedings and for the preparation and presentation 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 to this testimony as Appendix B.

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

A. The purpose of our testimony is to present the Public Staff's conclusions and recommendations regarding the application filed by Duke Energy Carolinas, LLC (Duke or the Company), pursuant to G.S. 62-110.7, for approval of its decision to incur additional nuclear generation project development costs of up to $287 million for the period January 1, 2010, through December 31, 2013, for the proposed William States Lee, III Nuclear Station (Lee Nuclear Station) in Cherokee County, South Carolina.

Q. PLEASE SUMMARIZE DUKE'S APPLICATION AND TESTIMONY.

A. Duke's application, which was filed on November 15, 2010, and amended on December 6, 2010, states that it follows the Commission's prior approval of Duke's 2007 application for approval of the decision to incur project development costs for the proposed Lee Nuclear Station. The application further states that through December 31, 2009, Duke had incurred project development costs of approximately $172 million. Duke now asks for Commission approval of its decision to incur the project development costs necessary to continue development work from January 1, 2010, through December 31, 2013, of up to

$287 million, for a total of $459 million through December 31, 2013, to ensure that the Lee Nuclear Station remains an option to serve customer needs in the 2021 timeframe.

In its supporting testimony filed on November 15, 2010, Duke describes its strategic plan to serve customer load through the addition of renewable, energy efficiency, and demand-side management (DSM) resources, along with base load, intermediate, and peaking generation facilities, as necessary, to reliably and cost-effectively meet a cumulative need by 2029 for 6,000 MW of additional capacity. Company witness Hager describes in some detail Duke's 2010 Integrated Resource Plan (IRP) and also describes recent federal and state initiatives to encourage the development of new nuclear generation.

Q. WOULD YOU PLEASE DESCRIBE DUKE'S PREVIOUS REQUESTS AND THE COMMISSION'S ORDERS REGARDING THOSE REQUESTS?

A. Yes. By Order issued March 20, 2007, prior to the enactment of G.S. 62-110.7, the Commission ruled, in response to a request filed by Duke, that it was appropriate in general for Duke to pursue preliminary siting, design and licensing of the proposed Lee Nuclear Station through December 31, 2007, and incur costs not to exceed the North Carolina allocable portion of Duke's total system share of $125 million, and that it was in the public interest for all potential resource options, including nuclear generation, to be adequately considered to ensure that the most economical resources are available to meet customers' needs on a timely basis.

On clarification, the Commission stated, by Order issued August 6, 2007, that it did not intend to approve or endorse any specific nuclear technology or design, and that it had not pre-approved or denied any particular ratemaking treatment for development costs regardless of whether the plant was completed, abandoned, or never begun.

On December 7, 2007, Duke filed an application pursuant to the newly enacted G.S. 62-110.7 requesting approval to incur up to $160 million in project development costs, for the January 1, 2008, through December 31, 2009, time period, to ensure that the Lee Nuclear Station remained an option to serve customer needs in the 2018 timeframe. On June 11, 2008, the Commission issued an Order approving Duke's decision to incur project development costs, subject to a limit on such costs to the North Carolina allocable portion of a total system amount of $160 million and a limit on the time that such costs could be incurred to the period from January 1, 2008, to December 31, 2009.

In its Order, the Commission stated that its approval did not constitute approval of any particular activities or costs, all of which would be subject to later determinations as to their prudence and reasonableness, placed Duke on notice that the approval in the Order could not be interpreted as making it probable that the recovery of any specific actual costs would be allowed, and required Duke to file for approval for the use of a regulatory asset account with respect to any abandoned project development costs. The Commission also continued the previously imposed reporting requirements.

Q. PLEASE SUMMARIZE THE PROVISIONS OF G.S. 62-110.7.

A. Project development costs are defined by G.S. 62-110.7(a) as all capital costs associated with a potential nuclear electric generating facility that are incurred before the issuance of a certificate for the facility by the Commission or a certificate by the host state for an out-of-state facility intended to serve North Carolina retail customers. G.S. 62-110.7(b) provides that, at any time prior to the filing of an application for a certificate to construct a nuclear generating facility, a *public utility may file a request that the Commission review the utility's decision to* incur project development costs. The Commission is required to approve the utility's decision to incur proposed project development costs if the utility demonstrates by a preponderance of evidence that the decision to incur those costs is reasonable and prudent. However, it further provides that the Commission is not allowed to rule on "the reasonableness or prudence of specific activities or recoverability of specific items of cost," which is to be done in a subsequent ratemaking proceeding.

Q. PLEASE EXPLAIN YOUR UNDERSTANDING OF THE DIFFERENCE BETWEEN APPROVAL OF THE DECISION TO INCUR PROJECT DEVELOPMENT COSTS AS BEING REASONABLE AND PRUDENT AND A DETERMINATION OF REASONABLENESS AND PRUDENCE WITH RESPECT TO SPECIFIC ACTIVITIES AND EXPENDITURES ACTUALLY UNDERTAKEN AND MADE.

A. The utility's *initial* decision to incur some level of project development costs is typically made prior to these costs actually being incurred. The decisions to undertake individual specific activities or to make specific expenditures are made after the initial decision or decisions and are based upon a number of factors, including the appropriate timing of each activity and expenditure, the appropriate amount(s) of resources to be expended, and the appropriate third-party or internal providers to be utilized for each activity, good, or service. Furthermore, *changes in facts and circumstances occurring after the initial decision to proceed*, and subsequent decisions to continue, with project development may affect not only the appropriate timing of a specific activity or expenditure, but also may very well raise questions as to the reasonableness and prudence of going forward with certain specific activities and expenditures at all. It is these types of factors and changes in circumstances, which arise during the course of project development, that the utility must consider before it takes further action and that the Commission must consider in determining whether an actual activity or expenditure was reasonable and prudent. As the Public Staff pointed out in its brief filed in this docket on February 14, 2007, costs must be shown to have been both reasonable in amount and prudently incurred to be recoverable in rates.

Q. WHAT IS THE PUBLIC STAFF'S GENERAL POSITION WITH RESPECT TO WHETHER THE COMMISSION SHOULD APPROVE DUKE'S DECISION TO INCUR ADDITIONAL PROJECT DEVELOPMENT COSTS FOR THE LEE NUCLEAR STATION?

A. Based on its review of the Company's application and its current IRP, as reflected in the Public Staff's Comments filed on February 10, 2011, in Docket No. E-100, Sub 128, the Public Staff believes that Duke's general decision to incur additional project development costs is reasonable and prudent so that the proposed Lee Nuclear Station can be maintained as a potential resource option to satisfy future projected load and energy requirements. However, the Public Staff has a number of concerns about Duke's application, particularly the amount that has been requested and the time period included in the request.

Q. PLEASE DESCRIBE THE PUBLIC STAFF'S CONCERNS.

A. The Public Staff's first concern relates to the uncertainty that has been evident in recent years regarding Duke's need for a nuclear unit to be on line by any certain date in the future. When the Company filed its first request related to nuclear development costs in 2006, it stated that it needed 1,734 MW of nuclear baseload generation to serve its expected 2016 load. When the Company filed its next project development cost application in late 2007, it had reduced the initial need to one 1,117 MW unit and delayed it until 2018. At that time, the Company anticipated filing for a certificate with the South Carolina Public Service Commission (SCPSC) in late 2008. The current filing states that the first nuclear unit will be needed in 2021 and indicates that Duke anticipates filing its application for a certificate with the SCPSC closer in time to the receipt of the COL, which is expected in 2013.

An interrelated concern, which also was discussed in the Public Staff's IRP Comments, is the fact that it has been a number of years since Duke conducted a comprehensive study to justify its 17% target planning reserve margin. As a result, the Public Staff recommended that the Company be required to conduct a comprehensive reserve margin study to determine the optimal level of reserves to provide generation reliability while minimizing the cost to ratepayers, and file it next year with its IRP filing.

Third, the Public Staff is concerned, as discussed in its IRP Comments, about the lack of a no- or low-carbon regulation scenario in Duke's IRP evaluations. Assumptions about future carbon limitations and costs unquestionably can have a significant effect on the potential timing of new nuclear generating plants. In its application in the 2008 proceeding in this docket, the Company stated that its 2007 IRP analysis showed that the optimal resource mix varies under different scenarios, with an assumption of no carbon regulation making portfolios that do not contain new nuclear look best, and an assumption of high CO_2 allowance prices making a portfolio with two nuclear units look most cost-beneficial.

In its reference case in the current IRP proceeding, Duke assumed a cap and trade program with CO_2 prices based on the Waxman/Markey legislation delayed until 2015. Under that scenario, two nuclear units in 2021 and 2023 were $1.8 billion more cost effective than the natural gas-fired combustion turbine/combined cycle (CT/CC) portfolio. Through discovery, however, the Public Staff learned that under a no-carbon regulation scenario, the CT/CC portfolio was **[BEGIN REDACTION END REDACTION]** more cost effective than the two nuclear unit portfolio. The Public Staff also learned that the scenario with **[BEGIN REDACTION**

END REDACTION]

The Public Staff's fourth concern is the seemingly slow pace of the development of sharing the risks, rate impacts, and lumpiness associated with new nuclear plants. In discovery, the Public Staff asked Duke for the details of the efforts it has made to join South Carolina Electric & Gas Company (SC&E) and Santee Cooper in the new nuclear units planned for their existing Summer Nuclear Station, particularly with regard to Santee Cooper's stated intent to sell off a significant part of its current ownership interests in the new units. Duke responded that it had been in communication with Santee and that it continues to explore approaches that could lead to sharing a portion of Santee Cooper's ownership.

Duke recently has entered into an option agreement with Jacksonville Electric Authority (JEA) pursuant to which JEA has the option to purchase an undivided ownership of not less than five percent and not more than 20 percent of the proposed Lee Nuclear Station. **[BEGIN REDACTION**

END REDACTION]

Given the very high capital costs associated with the construction of a nuclear plant, the fact that the addition of the Lee Nuclear Station as proposed by Duke will create lumpiness and projected higher than optimal reserve margins early in the plant's operational life, and the uncertainty as to the timing of Duke's actual need for baseload capacity, among other things, the Public Staff believes that every effort should be made to explore sharing these risks and costs with other entities.

Q. DOES THE PUBLIC STAFF HAVE ANY OTHER COMMENTS IT WISHES TO MAKE?

A. Yes. Duke incurred approximately $36 million in project development costs related to the Lee Nuclear Station between January 1, 2010, and December 31, 2010, including AFUDC. The Company proposes to incur approximately $250 million from January 1, 2011, through December 31, 2013 (also including AFUDC), and seeks approval of its decision to incur the total amount of project development costs incurred or to be incurred for the four-year period from January 1, 2010, through December 31, 2013, for a total of $459 million since its initial decision. Duke's testimony, however, focuses on the IRP it filed in September of 2010 as justification for its decision to continue to incur nuclear project development costs, with only a general mention that the earlier IRPs support such a decision. The Public Staff has focused its recommendation on the prospective period, but, based upon its review of the 2008 and 2009 IRP proceedings (Docket No. E-100, Subs 118 and 124, respectively), the Public Staff believes that Duke's decision to continue to incur project development costs as of January 1, 2010, was not unreasonable. However, the Public Staff believes that it would be highly beneficial to the Commission for a utility to make its filings pursuant to G.S. 62-110.7 prior to the time period for which it plans to begin or continue incurring costs pursuant to that decision. The Public Staff would strongly encourage Duke to file its requests prospectively in the future, as it did the first two times it filed in this docket. In any event, because the utility filing an application pursuant to G.S. 62-110.7 has the burden of demonstrating by a preponderance of the evidence that its decision to incur project development costs is reasonable and prudent, all of the justification for the entire time period in question should be included in the application and supporting pre-filed testimony.

The Public Staff also would like to note that Duke accrued **[BEGIN REDACTION END REDACTION]** in AFUDC through December 31, 2010. If it incurs project development costs in accordance with its current estimates, the Company will accrue **[BEGIN REDACTION END REDACTION]** during these three years. By the end of 2013, Duke estimates that **[BEGIN REDACTION END REDACTION]** in AFUDC alone will have been accrued.

Q. GIVEN ALL OF THE FOREGOING, WHAT IS THE PUBLIC STAFF'S SPECIFIC POSITION WITH RESPECT TO WHETHER THE COMMISSION SHOULD APPROVE DUKE'S APPLICATION?

A. Based upon all of the foregoing concerns, the Public Staff believes that the Commission should limit its approval of Duke's decision to incur additional project development costs to a lower dollar amount and a shorter time period than requested in Duke's application. Specifically, the Public Staff recommends that the time period be limited to January 1, 2011, through June 30, 2012, and correspondingly the dollar amount be limited to a maximum of the North Carolina allocable share of $120 million, including any AFUDC accrued during the approved 2011/2012 time frame on the costs incurred both before, and on or after, January 1, 2011. This recommended amount is slightly greater than the amount the Company estimates it will spend during the 18-month period in question.

The Public Staff believes these limitations are reasonable, given the current uncertainty with respect to potential carbon legislation, the need for Duke to conduct a comprehensive reserve margin study, the potential for further delay in the need for nuclear generation, the high costs associated with nuclear construction, and the need for in-depth exploration of sharing the costs and risks of nuclear construction, whether with respect to the SC&E/Santee Cooper Summer plant or otherwise. These limitations also will provide the Commission the opportunity to receive additional information as a result of the 2011 IRP proceeding, and another opportunity to consider these issues before approving the decision to incur additional project development costs.

With respect to the $36 million Duke incurred during 2010, the Public Staff does not contest Duke's general decision to continue to incur additional project development costs, but believes that the Commission should not include in its approval a specific amount of dollars that have already been spent. It is more appropriate for the Commission to impose a not-to-exceed cap for prospective expenditures, as it did in the previous orders in this docket.

In addition to the foregoing, the Public Staff believes that any Commission Order approving Duke's decision to incur additional project development costs related to the Lee Nuclear Station should again state that the Order does not constitute approval to spend any specific amount, nor to engage in any specific activities. It also should state that it does not constitute a finding that additional base load capacity is needed within the relevant time frame nor a finding that the Lee Nuclear Station should be built.

Finally, any Commission Order approving Duke's decision to incur additional project development costs related to the Lee Nuclear Station should again state that, although it is appropriate for Duke to continue to accrue AFUDC on the Lee Nuclear Station project development costs, such AFUDC accrual is provisional, subject to future determinations by the Commission as to the reasonableness and prudence of all project development costs associated with the Lee Nuclear Station, including AFUDC. Also, the appropriateness of the accounting treatment employed by the Company relative to such AFUDC shall be subject to future Commission determination.

Q. DOES THE PUBLIC STAFF HAVE ANY RECOMMENDATIONS WITH REGARD TO REPORTING REQUIREMENTS FOR PROJECT DEVELOPMENT ACTIVITIES AND EXPENDITURES?

A. Yes. Duke should be required to file and serve reports similar to the reports required by the Commission in prior orders in this docket. Specifically, Duke should be required to file the following: (1) on August 1, 2011, a report detailing its activities and expenditures in pursuit of project development for the Lee Nuclear Station from January 1, 2011, through June 30, 2011; (2) on February 1, 2012, a report detailing its activities and expenditures in pursuit of project development for the Lee Nuclear Station from July 1, 2011, through December 31, 2011; and (3) on August 1, 2012, a report detailing its activities and expenditures in pursuit of project development for the Lee Nuclear Station from January 1, 201, through June 30, 2012. Any Commission order approving Duke's decision to incur project development costs should provide that these reports are for informational purposes only and that they cannot be used as support for an argument that the Commission has made any determination with respect to the reasonableness or prudence of the activities and expenditures reported therein.

Q. DO YOU HAVE ANY FURTHER COMMENTS?

A. Yes. The Public Staff recommends that any approval granted by the Commission in this proceeding should again state that such approval is not to be considered approval to record any abandoned project development costs in a regulatory asset account. The requirement of Commission Rule R8-27 for the Company to apply to the Commission for use of regulatory asset accounts should continue to apply in this case, because (1) any approval granted in this proceeding should not be understood as making it probable at this time that the recovery of any specific actual costs will be allowed, and (2) it would be appropriate and beneficial for the Commission to begin to examine the circumstances of any abandonment as close as possible in time to that abandonment, and continuing the requirement that a request for regulatory asset approval be filed would facilitate the beginning of any such examination.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.

(PUBLIC STAFF MANESS AND ELLIS APPENDICES A AND B WERE MARKED FOR IDENTIFICATION.)

Q. Have you prepared a summary of your testimony?

A. (MANESS) Yes, we have.

Q. Please give it.

A. (MANESS) The purpose of our testimony is to present the Public Staff's conclusions and recommendations regarding the application filed by Duke Energy Carolinas, LLC, pursuant to G.S. 62-110.7, for approval of its decision to incur additional nuclear generation project development costs of up to $287 million for the 2010 to 2013 period for the proposed Lee Nuclear Station. Duke's application, as amended, states that through December 31st, 2009, that it incurred project development costs of approximately $172 million. Duke now asks for Commission approval of its decision to incur additional project development costs of up to $287, for a cumulative total of $459 million through December 31st, 2013.

By Order issued March 20th, 2007, prior to the enactment of G.S. 62-110.7, the Commission ruled, in response to a request filed by Duke, that it was appropriate in general for Duke to pursue preliminary siting, design and licensing of the proposed Lee Nuclear Station through December 31st, 2007, and to incur costs not to exceed the North Carolina allocable portion of Duke's total system share of $125 million. On clarification, the Commission stated that it had not preapproved or denied any particular ratemaking treatment for development costs. On June 11th, 2008, in response to an application filed pursuant to G.S. 62-110.7, the Commission issued an Order approving Duke's decision to incur project development costs, subject to a limit on such costs to the North Carolina allocable portion of $160 million and a limit on the time that such costs could be incurred to the 2008-2009 period. In its Order, the Commission stated that its approval did not constitute approval of any particular activities or expenditures, all of which would be subject to later determinations as to their prudence and reasonableness.

It is important to note the difference between approval of the decision to incur project development costs which is made pursuant to G.S. 62-110.7, and a determination of reasonableness and prudence with respect to specific activities and expenditures actually undertaken which is to be made in later proceedings. The utility's initial decision to incur some level of project development costs is typically made prior to these costs actually being incurred. The decisions to undertake individual specific activities or to make specific expenditures are made after the initial decision or decisions and are based upon a number of specific factors which can change over time. Furthermore, changes in facts and circumstances occurring after the initial decision to proceed with project development may affect not only the appropriate timing of a specific activity or expenditure, but also may very well raise questions as to the reasonableness and prudence of going forward at all with specific activities and expenditures.

(ELLIS) Based on its review of the Company's application and its current integrated resource plan, or IRP, the Public Staff believes that Duke's general decision to incur additional project development costs is reasonable and prudent. However, the Public Staff has a number of concerns about Duke's application, particularly the amount that has been requested and the time period included in the request.

The Public Staff's first concern relates to the uncertainty that has been evident in recent years regarding Duke's need for a nuclear unit to be on line by any certain date in the future. *Since 2006, Duke's stated need for nuclear* generation has changed from 1,734 MW to serve its expected 2016 load, to not needing its initial 1,117 MW nuclear until 2021. An inter--- an interrelated concern is the fact that it has been a number of years since Duke conducted a comprehensive study to justify 17 percent target planning reserve margins. As a result, the Public Staff has recommended in the IRP proceeding that the Company be required to conduct a comprehensive reserve margin study and file it in the next year with its IRP filing.

The Public Staff is also concerned about the lack of a no- or low-carbon regulation scenario in Duke's IRP evaluations. Assumptions about future carbon limitations and costs unquestionably can have a significant effect on the potential timing of new nuclear plants. In its reference case in its current IRP proceeding, Duke assumed a cap and trade program with CO2 prices based on the Waxman/Markey legislation delayed until 2015. Under that scenario, two nuclear units in 2021 and 2023 were $1.8 billion more cost effective than Duke's natural gas-fired combustion turbine/combined cycle portfolio. Through discovery, however, the Public Staff learned, among other things, that under a no-carbon regulation scenario, the CT/CC portfolio was more cost effective than the two nuclear unit portfolio.

The Public Staff's next concern is the seemingly slow pace of the development of sharing the risks, rate impacts and the lumpiness associated with the new nuclear units. The Public Staff believes that every effort should be made to explore sharing the risks and the costs associated with nuclear construction with other entities.

Duke incurred approximately $36 million in project development costs relative to the Lee Nuclear Station during 2010. The Company proposes to incur approximately $250 million during the 2011 and 2013 period, and seeks approval of the decision to incur a total amount of project development costs incurred or to be incurred for the four-year period from 2010 through 2013. The Public Staff has focused its recommendation on the 2011-2013 period, but based on its review of the 2008 and 2009 IRP proceedings, it believes that Duke's decision to continue to incur project development costs as of January 1st, 2010, was not unreasonable. However, the Public Staff would strongly encourage Duke to file its request prospectively in the future, as it did in the first two times it filed in this docket. With respect to the $36 million Duke incurred during 2010, the Public Staff believes that the Commission should not include in its approval a specific amount of dollars that have already been spent. It is more appropriate for the Commission to impose a not-to-exceed cap for prospective expenditures as it did in the previous orders in this docket.

Based upon all of the foregoing concerns, the Public Staff believes that the Commission should limit its approval of Duke's decision to incur additional project development costs to a lower dollar amount and a shorter time period than requested in Duke's application. Specifically, the Public Staff recommends that the time period be limited to January 1st, 2011 through June 30th, 2012, and correspondingly, the dollar amount should be limited to a maximum of the North Carolina allocable share of $120 million. This recommended amount is slightly greater than the amount the Company estimates it will spend during the 18-month period in question. These limitations are reasonable given current circumstances, and will also provide the Commission the opportunity to receive additional information as a result of the 2011 IRP proceeding, and another opportunity to consider these issues before approving the decision to incur additional project development costs.

(MANESS) In addition to the foregoing, the Public Staff believes that any Commission order approving Duke's decision to incur additional project development costs should again state that it does not constitute approval to spend any specific amount, nor to engage in any specific activities. It also should state that it does not constitute a finding that additional base load capacity is needed within the relevant time frame, nor a finding that the Lee Nuclear Station should be built. It should state that although it is appropriate for Duke to continue to accrue AFUDC on the Lee Nuclear Station project development costs, such AFUDC accrual is provisional, and that the appropriateness of the accounting treatment employed by the Company relative to such AFUDC shall be subject to future Commission determination. Additionally, Duke should be required to file and serve reports similar to the reports required by the Commission and prior orders in this docket. Any Commission order approving Duke's decision to incur project development costs should provide that these reports are for informational purposes only. Finally, the Public Staff recommends that any approval granted by the Commission in this proceeding should again state that such approval is not to be considered approval to record any abandoned project development costs in a regulatory asset account.

MS. RANKIN: The witnesses are available for cross examination.

CHAIRMAN FINLEY: Mr. Runkle.

CROSS EXAMINATION BY MR. RUNKLE:

Q. Gentlemen, just one scenario, and let me just walk through it and I'll get your opinion on it. Duke does go ahead and gets approval for the $459 million, and from -- it spends that amount of money. Now, at that point, Jacksonville may come in, get their 20 percent, or another party may come and get 50 percent, 25 percent. Duke is starting to recover the predevelopment costs. Do the North Carolina ratepayers pick up all the predevelopment costs, or are some of them allocated to the Jacksonville and the other party?

A. (MANESS) Well, since the predevelopment costs eventually roll forward into CWIP, the brick and mortar costs, so to speak, would not actually be recovered until the plant goes into service, and they would be recovered through depreciation. Additionally, any AFUDC accrued, under current law at least, would also roll forward and be recovered through depreciation. So the only amounts that would be recovered from the customers potentially during the construction period would be any amounts that are -- result from CWIP being included in rate base or from the legislation, as it's thought to be proposed, that might provide for some tracker that would allow the financing cost to be recovered without a general rate case, essentially, taking the place of filing a rate case and putting CWIP in rate base.

We would expect -- we have not discussed this in great depth with Duke, but we would expect that any cost of the plant that would be recovered through depreciation would certainly be allocated in the appropriate fashion to any joint owner of the plant. What we haven't discussed in any depth is what would happen with amounts that, say, were recovered from the customers prior to the agreement being reached. I think that although it is certainly reasonable to expect that, to the extent that a joint owner gets a certain benefit from the plant, that the costs that are proportionally associated with that benefit should be expected not to be borne by the North Carolina retail ratepayers.

Q. Thank you.

MR. RUNKLE: No further questions.

CHAIRMAN FINLEY: Ms. Force?

CROSS EXAMINATION BY MS. FORCE:

Q. Good afternoon.

A. (ELLIS) Good afternoon.

Q. From your testimony, it appears -- I think it's Mr. Maness's testimony -- it appears that you view the purpose of the nuclear development costs proceedings as providing prospective review of proposed decisions to incur such costs. Is that right?

A. (MANESS) We've had discussions with counsel about this, and based on counsel's advice, I don't think that it's entirely clear that it's required to be prospective, but we certainly think that the intent -- or how we would think that the law should be implemented would be that the Company would come in on a prospective basis and say we expect to incur these predevelopment costs over a certain period, and we would like Commission approval of our decision to do that on a prospective basis. I think one thing to keep in mind is the Company is not required to come in and get approval of that decision. They could simply leave it to be evaluated, along with other -- all the other aspects of plant development and construction, at a later date. But we think that the spirit of the way the procedure is supposed to work is that you would be looking forward prospectively at any given time.

Q. You've expressed some concerns about prospective reviews requiring the Commission to project too far into the future, such as July 2012 through 2013. Isn't that right?

A. (MANESS) Yes.

Q. The farther the Commission projects into the future, such as 2012 to 2013, isn't it more difficult, then, for the Commission to decide today whether the decision to incur those costs is reasonable and prudent?

A. (ELLIS) I think it introduces more uncertainty, so that would make it more difficult, yes.

Q. And, also, the farther the Commission projects out into the future, doesn't that also increase the risk that the costs from abandoned plant get shifted to consumers?

A. (MANESS) Well, I think that one thing that has to be kept in mind is that if you -- for example, if the Commission were to approve Duke's request today, essentially which is that its decision to continue to incur project development costs as of

January 1st, 2010 was an appropriate decision and continues to be appropriate to date carrying forward from the future, that doesn't mean that any costs that it incurs from now until 2013 is blessed by the Commission and certain for recovery.

For example, if it became evident six months from today that the plant was clearly no longer in the interest of the consumers, Duke, we think, would be obligated to make a prudent decision that the plant should be canceled. This doesn't really give them any authorization to continue to incur specific expenditures over any period of time. They are obligated to continue to examine, on a continuous basis, the decisions to proceed. And if it becomes evident at any point in the future that the plant is not needed, nor necessary or appropriate for service to North Carolina retail ratepayers, that the plant would be abandoned at that time.

MS. FORCE: I don't have any other questions. Thank you.

CHAIRMAN FINLEY: Duke?

MR. CASTLE: I just have a few questions for you guys. Sorry you have to look over your shoulder at me.

CROSS EXAMINATION BY MR. CASTLE:

Q. With respect to Ms. Force's questions about the costs incurred by the Company in 2010 to develop Lee Nuclear Station or to continue to develop Lee Nuclear Station, it is your opinion that it was reasonable for Duke Energy Carolinas to continue to incur those costs, is it not?

A. (ELLIS) Yes. We do think it was reasonable at that time, yes.

(MANESS) Yes.

Q. Okay. And Public Staff recommends, or you, in your testimony, recommended the coverage of any approval by the Commission issued in this proceeding extend only to the end of June 2012, correct?

A. (ELLIS) That's correct.

Q. And that -- but that June 2012 date is not tied to anything in particular with respect to the Company's licensing schedule, is it?

A. (MANESS) No. The date was a matter of judgment, trying to find a balance between what we felt was a reasonable time frame for the Company to be required to come back in, should it choose to do so, to get a further approval to continue to incur development costs.

Q. And as to Ms. Force's questions about increased risks and abandoned plant costs, is it your understanding that any project development costs incurred by the Company to date are not reflected in its current rates?

A. (MANESS) That's correct. That is our understanding.

Q. And to put any of those project development costs under any circumstances into our rates, we'd have to go through a rate case?

A. (MANESS) Yes. That's correct.

MR. CASTLE: Thank you. That's all I have.

CHAIRMAN FINLEY: Ms. Rankin?

MS. RANKIN: I just have one question.

REDIRECT EXAMINATION BY MS. RANKIN:

Q. Mr. Castle's very first question was about $36 million spent in 2010. Does your testimony express an opinion on the $36 million or the decision to continue in 2010?

A. On the decision to continue in 2010, not on whether the $36 million was reasonable or prudent.

MS. RANKIN: Thank you. That's all.

CHAIRMAN FINLEY: Questions by the Commission? Commissioner Brown-Bland.

EXAMINATION BY COMMISSIONER BROWN-BLAND:

Q. You may have heard this question asked earlier of the Duke witnesses, but on your testimony, page 13, there are references there to some confidential information that refers to amounts of AFUDC. Do you have any opinion about whether that information should be confidential?

A. (MANESS) I can't say that I have an opinion, so to speak. I don't know why it would be considered confidential. It is what it is, based on the calculations of construction plant costs and the AFUDC rate. The only reason that I could say that perhaps prospectively it would be confidential is it could give somebody the ability to at least approximate what Duke's construction costs were going to be ahead of time, how they forecasted it into the future. But as far as the historical information is concerned, I don't know that that would be a concern.

Q. Would you have any different answer with regard to the other categories of development costs?

A. (MANESS) I would have to say that I don't think that we have really examined that. Duke has made a claim of confidentiality and nobody has chosen to challenge it at this point, except maybe during the hearing today, that I'm aware of, so I don't -- I don't know that we have an opinion on it as of this date.

COMMISSIONER BROWN-BLAND: All right. Thank you.

CHAIRMAN FINLEY: I've got a question or two.

EXAMINATION BY CHAIRMAN FINLEY:

Q. Gentlemen, you filed your testimony in this case on February the 24th, right?

A. (MANESS) Yes.

Q. And last week we experienced the earthquake and tsunami in Japan. Those GE units on the east coast and up in the north of Japan, based on my watching the news, we've had a failure, at least, of at least four units, failure of the primary cooling system, failure of the backup emergency generators, failure of the battery backup cooling system, fire in the spent nuclear fuel cool area, hydrogen explosion, radioactive releases, evacuation of employees, evacuation of residents, partial meltdown of the core, and that's just based on the news of early this morning. I don't know what might have happened today. Indications that this is worse than Three Mile Island and on a scale of 1 to 10, it's getting close to the problem in Chernobyl. And I guess my question is, in light of all of that, do you have any additional reservations about the advisability of incurring nuclear costs for the Lee system in Cherokee County, South Carolina?

A. (ELLIS) No, sir. I don't. And one of the reasons why is because any changes of generic design that need to be implemented in the United States, based on similar designs over there, will be implemented. And while it may introduce additional cost, the ultimate goal for the NRC would be to ensure that it would be safe for the public.

Q. Do you have any feeling, Mr. Ellis, as to whether the events in Japan might cause additional activity on the part of the NRC to look at the Westinghouse AP1000 design or anything like that?

A. (ELLIS) Well, there are significant differences between AP1000 and the design that are affected in Japan. However, I am sure that they will try to look generically across issues and see if there are any that are common, and if there are any concerns that need to be addressed, I have confidence that they will.

CHAIRMAN FINLEY: Okay. Any questions on the Commission's questions?

(No response.)

CHAIRMAN FINLEY: Very well. Thank you, gentlemen. Appreciate your participation.

MS. RANKIN: I would like to move the public witnesses' exhibits into evidence. I checked with Duke, and they do not have any objections.

CHAIRMAN FINLEY: Without objection, we will move the exhibits that have already been identified as exhibits marked on behalf of the public witnesses.

(FIREMAN EXHIBIT NO. 1, KINSELLA EXHIBIT NO. 1 AND HENRY EXHIBIT 1 WERE ADMITTED INTO EVIDENCE.)

MR. RUNKLE: Mr. Chairman, I might need the opportunity to file a late-filed exhibit. On the cross examination of Mr. Jamil, we referenced the NRC report. My recollection of it was -- it wasn't on my computer so I couldn't have shown it to him -- was different from his. If my interpretation is correct, I may offer that as a late-filed exhibit.

CHAIRMAN FINLEY: We'll look for it, and the parties will have an opportunity to review it and respond.

MR. RUNKLE: Thank you.

CHAIRMAN FINLEY: Anything else we need to do this afternoon?

MS. SHAFEEK-HORTON: Not from our perspective.

CHAIRMAN FINLEY: All right. Is there any reason why we shouldn't request posthearing filings under the customary practice, 30 days after the mailing of the transcript?

MS. SHAFEEK-HORTON: No.

CHAIRMAN FINLEY: All right. So ordered, and we thank you very much for your participation. The hearing is closed.

(THE PROCEEDINGS WERE ADJOURNED AT 5:03 P.M.)

STATE OF NORTH CAROLINA

COUNTY OF WAKE

C E R T I F I C A T E

I, Linda S. Garrett, Notary Public/court reporter, do hereby certify that the foregoing hearing before the North Carolina Utilities Commission in Docket No. E-7, Sub 819 was taken and transcribed under my supervision; and that the foregoing pages constitute a true and accurate transcript of said Hearing.

I do further certify that I am not of counsel for, or in the employment of either of the parties to this action, nor am I interested in the results of this action.

IN WITNESS WHEREOF, I have hereunto subscribed my name this 28th day of March, 2011.

Linda S. Garrett

Linda S. Garrett
Notary Number 19971700150
Notary Public for the State of
North Carolina