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2 BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

3 DOCKET NO. E-7, SUB 790
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In the Matter of)
)
Application of Duke Energy Carolinas for) Rebuttal Supplemental Testimony of
Approval for an Electric Generation Certificate) Janice D. Hager
of Public Convenience and Necessity to) For Duke Energy Carolinas
Construct Two 800 MW State of the Art)
6

7 **Q. PLEASE STATE YOUR NAME, TITLE AND BUSINESS ADDRESS.**

8 A. My name is Janice D. Hager. My business address is 526 South Church Street, Charlotte,
9 North Carolina. My title is Managing Director of Integrated Resource Planning and
10 Environmental Strategy for Duke Energy Corporation.

11 **Q. DID YOU PREVIOUSLY SUBMIT DIRECT AND REBUTTAL TESTIMONY IN**
12 **THIS MATTER, AS WELL AS SUPPLEMENTAL TESTIMONY REGARDING**
13 **THE NEW COST INFORMATION SUBMITTED BY DUKE ENERGY**
14 **CAROLINAS?**

15 A. Yes, I did.

16 **Q. HAVE YOU REVIEWED THE PRE-FILED SUPPLEMENTAL TESTIMONY AND**
17 **EXHIBITS OF INTERVENORS FILED IN THIS DOCKET ON JANUARY 8, 2007?**

18 A. Yes, I have.

19 **Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL SUPPLEMENTAL**
20 **TESTIMONY?**

21 A. The purpose of my rebuttal testimony is to respond on behalf of Duke Energy Carolinas to
22 portions of the prefiled supplemental testimony of David A. Schlissel and Anna Sommer

1 submitted on behalf of Southern Alliance for Clean Energy (“SACE”) and Environmental
2 Defense and the Southern Environmental Law Center (hereafter referred to as
3 “Schlissel/Sommer Testimony”). Specifically, I will respond to criticisms of Duke Energy
4 Carolinas’ application of the Capacity Expansion Module (“CEM”) and carbon tax
5 scenarios. In addition, I will address Carolinas Utility Customers Association witness
6 Kevin O’Donnell’s testimony regarding the Company’s 2005 Request for Proposals
7 (“RFP”). I will also respond to the modifications to the analysis results made by the Public
8 Staff in their Supplemental Testimonies. In addition, I will provide updated information on
9 the impacts of the federal clean coal tax credits received for the Cliffside Project.

10 **Q. IN YOUR SUPPLEMENTAL TESTIMONY AT PAGES 5 AND 6, YOU DISCUSSED**
11 **THE IMPACT OF CERTAIN CLEAN COAL FEDERAL TAX CREDITS THAT**
12 **WERE PENDING A DECISION AT THAT TIME. PLEASE UPDATE THE**
13 **STATUS OF THESE CLEAN COAL TAX CREDITS.**

14 A. In my supplemental testimony, I noted that the impact of a possible \$125 million advanced
15 clean coal federal tax credit had not been included in the updated IRP analysis. Since the
16 filing of my supplemental testimony, the Cliffside Project has been recognized as an
17 advanced clean coal project and selected to receive those credits. In my supplemental
18 testimony, I stated that the Present Value of Revenue Requirements (“PVRR”) of the credits
19 was \$75 million. Upon further examination of the application of the credits, I estimate the
20 PVRR impact of the clean coal credits to be approximately \$31 million.

21 **Q. HOW WILL THE TAX CREDIT AFFECT THE ANALYSIS RESULTS?**

22 A. The tax credits will improve the PVRR of the portfolios with 1600 MWs of coal by
23 approximately \$31 million, which reduces the differential PVRR between the Balanced

1 Cliffside Portfolio and the All Gas and Nuclear Portfolio to \$200 million for the base case
2 assumptions. I have incorporated this change in my revised exhibits 4, 5 and 7 along with
3 the American Jobs Creation Act impact discussed later in my testimony.

4 **Q. IN THEIR TESTIMONY, MR. SCHLISSEL AND MS. SOMMER COMPLAIN**
5 **THAT DUKE ENERGY CAROLINAS DID NOT TIMELY PROVIDE CERTAIN**
6 **MODELING DATA IN RESPONSE TO DATA REQUESTS. HOW DO YOU**
7 **RESPOND?**

8 A. Duke Energy Carolinas responded to some sixty-nine data requests, including subparts,
9 from SACE in December, including two separate data requests from SACE for information
10 on Capacity Expansion Module (CEM) input/output runs. These responses to SACE's
11 Third and Fourth Sets of Data Requests were provided on December 8 and December 20,
12 2006, respectively. In late December, Mr. Schlissel originally claimed that data produced
13 in two DVDs provided by Duke Energy Carolinas' consultant, Global Energy Decisions,
14 included only pre-cost increase CEM data inputs. I have not viewed the DVDs that are in
15 Mr. Schlissel's possession, but the copies of the DVDs we retained in our offices include
16 the appropriate information. When made aware of the concern by Mr. Schlissel, the
17 Company initially believed the confusion was not due to incomplete data but to a
18 misunderstanding of the data. In fact, Mr. Schlissel later admitted that he was mistaken and
19 that only one DVD appeared to him to have the incorrect data. When Mr. Schlissel
20 continued to insist the data was incomplete, Duke Energy Carolinas sent another copy of
21 the DVD via overnight delivery on a Saturday to Mr. Schlissel's home. As Duke Energy
22 Carolinas has previously explained to SACE's counsel and Mr. Schlissel, we are at a loss to

1 explain how one copy of the DVD may have contained different data. We sincerely regret
2 any inconvenience to Mr. Schlissel or to SACE.

3 **Q. THE SCHLISSSEL/SOMMER TESTIMONY CONTENDS THAT DUKE ENERGY**
4 **CAROLINAS' UPDATED CEM ANALYSES DO NOT SUPPORT THE ADDITION**
5 **OF THE CLIFFSIDE PROJECT. DO YOU AGREE?**

6 A. No, I do not agree. CEM analysis is but the second step in a three-step process used in the
7 Integrated Resource Planning (“IRP”) process. The purpose of the CEM runs is to aid in
8 the creation of portfolios to take forward to the Planning and Risk (“PaR”) Analysis. As I
9 noted in my supplemental testimony, the CEM runs were performed and, based on the
10 outcomes, the same portfolios used in the 2006 analysis were carried forward to the PaR
11 analysis, as well as an additional portfolio that included partial ownership of the new
12 Cliffside unit (the “Balanced Cliffside Shared Ownership” portfolio).

13 The Schlissel/Sommer Testimony includes Table 1 that shows the CEM results for new coal
14 capacity for a base case and twelve sensitivities. The list shows outcomes that add no new
15 coal, outcomes that add between 0 and 800 MWs of new coal, and outcomes that add
16 between 800 and 1600 MWs of new coal. CEM runs inform the creation of portfolios; they
17 do not dictate the exact portfolios. We continue to believe that our portfolios which include
18 no new coal, 800 MWs of new coal, and 1600 MWs of new coal are appropriate for the
19 analysis. By including portfolios with 1) coal and nuclear, 2) nuclear but no coal, 3) coal
20 but no nuclear, and 4) no coal or nuclear, we believe we have in essence “pegged the
21 corners” of the potential coal and nuclear portfolios and additional portfolios related to
22 various timing scenarios were unnecessary.

1 **Q. IN THEIR TESTIMONY, MR. SCHLISSEL AND MS. SOMMER QUESTION THE**
2 **TIMING OF THE NEW CLIFFSIDE COAL UNITS BASED UPON THEIR**
3 **APPARENT UNDERSTANDING OF THE UPDATED CEM RUNS. DO YOU**
4 **AGREE WITH THEIR POSITION REGARDING THE INAPPROPRIATENESS OF**
5 **THE PORTFOLIOS BASED ON THE CEM RUNS?**

6 A. No. The CEM runs support the creation of portfolios that include the first new Cliffside
7 unit in 2011. Once again, as I review Table 1 of the Schlissel/Sommer Testimony, I note
8 CEM run outcomes that add new coal in 2011. While it is true that the CEM runs
9 sometimes select new coal later or sometimes not at all, the Company did not focus on
10 additional portfolios with varied timing due to lack of information about pricing for delayed
11 new coal capacity in light of the current market environment, and the short time frame to
12 perform the analysis. Under normal market circumstances, capital costs for generation are
13 increased at a general inflation rate in the analysis; however, the Company believes such an
14 assumption may not be valid for a one or two year delay in new coal capital costs given the
15 recent increase in market prices for coal generation, but did not have other credible
16 information to use. The portfolios analyzed were selected to provide management with
17 information to make a decision on going forward with Cliffside at the present time and, as
18 such, included the appropriate portfolios for analysis.

19 **Q. AN ADDITIONAL CRITICISM OF MR. SCHLISSEL AND MS. SOMMER IN**
20 **THEIR TESTIMONY IS THAT DUKE ENERGY CAROLINAS DID NOT USE THE**
21 **APPROPRIATE CEM MODE. DO YOU AGREE?**

22 A. No, I do not. Duke Energy Carolinas acknowledges the ability to use alternative modes
23 within the CEM model. However, the Company prefers to allow the CEM to run in the

1 mode that allows the model to select exactly the MWs needed to serve the load most
2 efficiently. We can then look at these outcomes and create portfolios with reasonable build
3 sizes and timing. For example, not each CEM run translates to a portfolio. Portfolios are
4 created that address numerous CEM run analysis results.

5 **Q. AS THEY DID IN THEIR ORIGINAL TESTIMONY, MR. SCHLISSEL AND MS.**
6 **SOMMER CRITICIZE DUKE ENERGY CAROLINAS' FAILURE TO INCLUDE**
7 **ADDITIONAL ENERGY EFFICIENCY OR RENEWABLES IN THE UPDATED**
8 **IRP ANALYSIS. HOW DID THE COMPANY CONSIDER ENERGY EFFICIENCY**
9 **AND RENEWABLES IN THE UPDATED IRP ANALYSIS?**

10 A. We included the same level of energy efficiency and renewables as in the 2006 IRP. As
11 discussed extensively in the evidentiary hearings in September, the Company has launched
12 four collaborative efforts (a residential and a commercial/industrial group in both North
13 Carolina and South Carolina) to identify cost-effective Demand Side Management (“DSM”)
14 programs, which include energy efficiency, for implementation. These groups will be
15 seeking to help the Company implement the commitment made by Mr. Rogers to invest one
16 percent of annual Company revenues in energy efficiency programs, assuming appropriate
17 regulatory treatment, and to retire additional older, less efficient coal units over time. In the
18 meantime, in addition to the 100 MW of new demand-response programs included in the
19 2005 Annual Plan, Duke Energy Carolinas has included 101 MW of new energy efficiency
20 programs in the 2006 Annual Plan and in this updated analysis. The new 101 MW of
21 additional energy efficiency programs is indicative of the approximate level of cost-
22 effective energy efficiency results that could be generated by the collaborative efforts.
23 While we had initially thought the collaborative efforts could produce a plan in early 2007,

1 the collaborative groups are in the process of initiating a DSM potential study for Duke
2 Energy Carolinas' service area, which will delay the preparation of a plan until later in the
3 year. Until these efforts are complete, the Company has no new information on DSM for
4 the Duke Energy Carolinas' system to include in the analysis.

5 In regard to renewables, the Schlissel/Sommer Testimony references a La Capra
6 study that was published in mid-December. The study is in the comment period. Duke
7 Energy Carolinas has reviewed the study and will provide comments. The Company
8 appreciates the efforts of the La Capra group and the study group that provided oversight to
9 the study. While the intent of the La Capra study is excellent, Duke Energy Carolinas has
10 not validated the results of this statewide study for its system. In particular, the possible
11 energy efficiency impacts will be validated by the work of the collaborative groups. I note
12 though that Jonathan Winer, of La Capra, is attributed in a December 14, 2006, article in the
13 Raleigh News and Observer stating that "the coal and nuclear plants that are being planned
14 now would likely still be needed." In addition, importantly, a renewable portfolio standard
15 is not the policy of this state at this point in time.

16 Duke Energy Carolinas believes energy efficiency and renewables will play an
17 important role in the Company's resource mix going forward, but *in addition to* the
18 Cliffside Project, not *in place of* the Project. As I stated in my direct and initial rebuttal
19 testimonies, I do not believe there is sufficient cost-effective energy efficiency to offset the
20 need for the Cliffside Project, especially in light of the Company's commitment to retire
21 older, less efficient coal units in amount equivalent to realized new energy efficiency
22 program megawatt savings. Nor do I believe there is sufficient cost-effective baseload
23 renewable capacity to replace the need for the Cliffside Project.

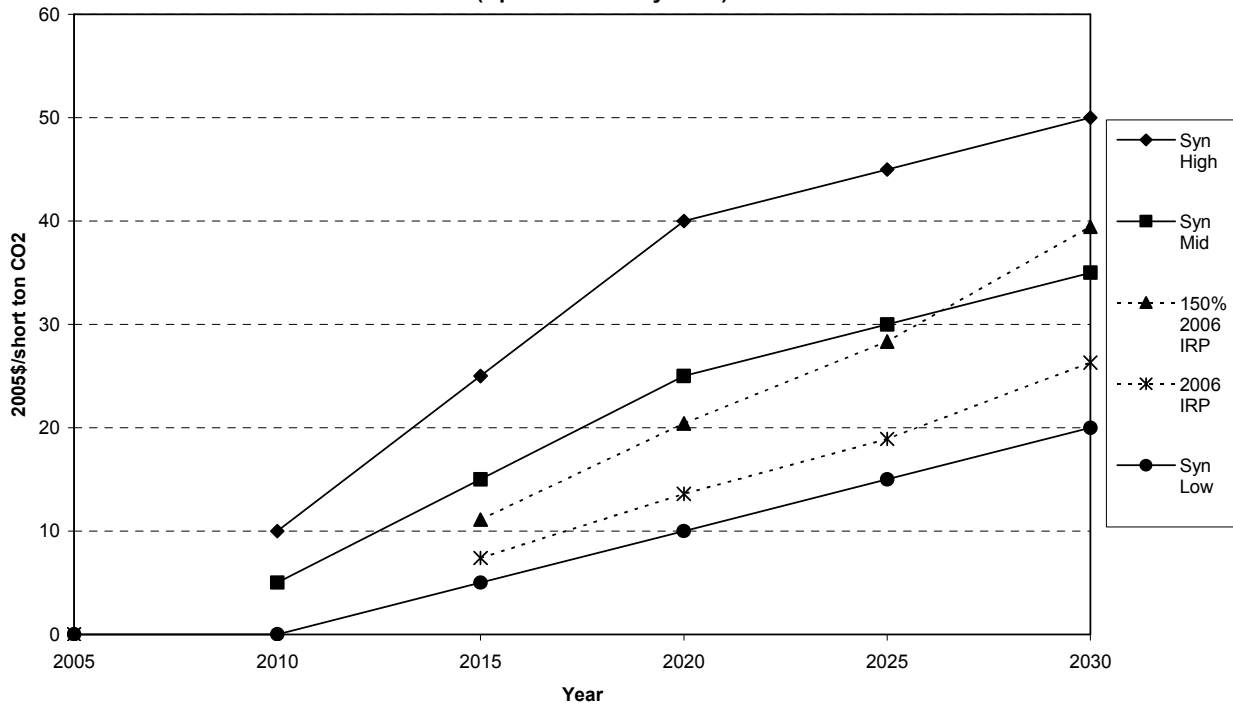
1 Q. AS THEY DID PREVIOUSLY, MR. SCHLISSEL AND MS. SOMMER ARGUE IN
2 THEIR TESTIMONY THAT DUKE ENERGY CAROLINAS HAS STILL NOT
3 ADEQUATELY CONSIDERED POTENTIAL GREENHOUSE GAS
4 REGULATION. HAS ANYTHING CHANGED SINCE THE SEPTEMBER
5 HEARING TO CAUSE DUKE ENERGY CAROLINAS TO CHANGE ITS
6 APPROACH ON CONSIDERING THE IMPACT OF POTENTIAL FUTURE
7 CARBON TAXES?

8 A. No. The Schlissel/Sommer Testimony offers examples of “proposed national policy” to
9 illustrate the potential for carbon legislation. The Schlissel/Sommer Testimony criticizes
10 the level and timing of the application of a potential carbon tax and the fact that it was not
11 applied to the screening curves. Quite simply, there is no more certainty now of what type
12 of carbon legislation may be passed than there was during the evidentiary hearing in
13 September.

14 However, in response to criticism that the carbon tax used in the 2006 model was
15 too low, the Company included in its updated IRP analysis additional sensitivities/scenarios
16 using a carbon tax 50% greater than the tax used for the sensitivities/scenarios in the 2006
17 IRP. Hager Figure 1 shows Duke Energy Carolinas’ two carbon tax assumptions as
18 compared to the carbon tax forecast supported by the Schlissel/Sommer Testimony.

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**HAGER FIGURE 1
Duke CO2 Assumptions
and Synapse Forecast
(Updated January 2007)**



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The figure shows that the carbon tax assumed in the 2006 IRP is between the low and mid-range forecasts by Synapse. The 150% scenario starts out just below the mid-range and crosses over to just above the mid-range by the end of the study period. The Company continues to believe it has appropriately addressed the carbon tax issue in its IRP analysis.

Q. IN THEIR TESTIMONY, MR. SCHLISSEL AND MS. SOMMER DRAW SOME CONCLUSIONS BASED ON BUSBAR COSTS. DO YOU BELIEVE THIS IS AN APPROPRIATE USE OF BUSBAR ANALYSIS?

A. No. Busbar analysis is appropriate for very rough screening of similar resource options – e.g., comparison of peaking generation resources. The Schlissel/Sommer Testimony compares busbar costs of Cliffside to DSM to simply conclude that the Cliffside Project

1 could be offset by “less expensive” energy efficiency. I believe it is inappropriate to use
2 such to compare generation technologies to DSM options. Detailed production costing
3 models are necessary to capture the complex interactions between all types of resources to
4 choose the most appropriate resource plan.

5 **Q. IN HIS TESTIMONY, MR. O’DONNELL BRIEFLY DISCUSSES A REQUEST FOR**
6 **PROPOSALS DUKE ENERGY CAROLINAS ISSUED IN 2005 AND CONCLUDES**
7 **THAT DUKE ENERGY CAROLINAS DECIDED TO BUILD THE CLIFFSIDE**
8 **PROJECT AFTER REVIEWING THE RESPONSES TO THE RFP. WHAT ROLE**
9 **DID THE REQUEST FOR PROPOSALS PLAY IN THE DECISION TO PURSUE**
10 **THE CLIFFSIDE PROJECT?**

11 A. None. The 2005 RFP that I believe Mr. O’Donnell is speaking to sought bids for
12 intermediate and peaking capacity needed between 2007 and 2010. Duke Energy Carolinas
13 did not issue an RFP for the baseload capacity needs that the Cliffside Project will meet.

14 **Q. PUBLIC STAFF WITNESS MICHAEL C. MANESS INCLUDED SEVERAL**
15 **MODIFICATIONS TO DUKE’S ANALYSIS IN HIS TESTIMONY. PLEASE**
16 **ADDRESS THESE.**

17 A. The Public Staff included the impact of the federal clean coal tax incentives, the American
18 Jobs Creation Act incentives, and a modification to the discount rate. Duke Energy
19 Carolinas believes that the modifications to the analysis to reflect the tax incentives are
20 appropriate. The Company cannot support the change to the discount rate, which includes
21 lower than the currently allowed return on equity. In addition, while Duke Energy
22 Carolinas accepts the Public Staff’s method for calculating the American Jobs Creation Act,
23 the Company made two slight changes. First, we adjusted the capital costs in the

1 calculation to account for a limited number of brownfield simple cycle and combined cycle
2 combustion turbines in each portfolio, whereas the Public Staff did not have the information
3 on the brownfield combustion turbine costs; and second, we excluded an additional
4 combined cycle combustion turbine the Public Staff had mistakenly included in the out
5 years in one portfolio. I have updated Exhibits 4, 5, and 7 from my Supplemental
6 Testimony and they are attached hereto as Hager Updated Supplemental Exhibit 4, Hager
7 Updated Supplemental Exhibit 5 and Hager Updated Supplemental Exhibit 7.

8 **Q. BASED UPON YOUR REVIEW OF THE INTERVENOR TESTIMONY, HAVE**
9 **YOUR CONCLUSIONS FROM THE UPDATED IRP ANALYSIS CHANGED?**

10 A. My conclusions from my Supplemental Testimony -- that the Cliffside Project is an
11 excellent hedge against the possibility of higher than expected gas prices and against the
12 possibility that new nuclear generation is not able to be built -- are strengthened. My
13 observations that the Cliffside Project fairs well under CO₂ tax scenarios if higher gas prices
14 are assumed to occur and that a partial sale of the Project is beneficial to customers are
15 unchanged as well. The difference between the Balanced Cliffside Portfolio and the All
16 Gas and Nuclear Portfolio is \$158 million PVRR, or about 0.33%, under base case
17 assumptions. From a customer standpoint, the incremental PVRR for the Balanced
18 Cliffside portfolio of \$158 million would result in incrementally higher average rates of less
19 than 0.3% each year over the study period compared to the All Gas and Nuclear portfolio.
20 In addition, as discussed by Mr. Lam, the Company expects to experience savings
21 (approximately \$70 million) associated with the installation of the scrubber on Cliffside
22 Unit 5 due to the ability to share equipment and infrastructure.

1 **Q. WHY IS IT APPROPRIATE TO INCLUDE SOME OF THE PUBLIC STAFF'S**
2 **MODIFICATIONS AND NOT THOSE SUGGESTED BY OTHER INTERVENORS?**

3 A. The modifications we have included in this updated analysis are reasonably certain facts,
4 not speculation about potential future regulations. The Cliffside Project has been awarded
5 the clean coal tax credits and all new generation resources will receive benefits from the
6 American Jobs Creation Act, unless these actions are revoked in the future.

7 **Q. DO YOU STILL BELIEVE THE COMMISSION SHOULD ISSUE A CPCN FOR**
8 **THE CLIFFSIDE PROJECT?**

9 A. Yes. As noted by Mr. Rogers in his supplemental testimony, a decision not to move forward
10 with the Cliffside Project is a decision to move forward with something else. The demand
11 for electricity continues to grow and that demand must be met. Intervenors propose
12 replacing the Cliffside Project with energy efficiency, renewables, or Integrated
13 Gasification Combined Cycle ("IGCC"). The Company has demonstrated why none of
14 these options is an appropriate replacement for the Cliffside Project. Importantly, I note
15 that no Intervenor is supporting what we believe is the only credible alternative option to
16 replace the Cliffside Project -- gas-fired generation. I believe the most prudent course of
17 action is for Duke Energy Carolinas to move forward with the Cliffside Project.

18 **Q. DOES THIS CONCLUDE YOUR REBUTTAL SUPPLEMENTAL TESTIMONY?**

19 A. Yes, it does.

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21