

**STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH**

DOCKET NO. E-7, SUB 790

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of		
Application of Duke Energy Carolinas, LLC,)	ORDER GRANTING
For Approval for an Electric Generation)	CERTIFICATE OF
Certificate of Public Convenience and)	PUBLIC CONVENIENCE
Necessity to Construct Two 800-MW State-)	AND NECESSITY
Of-the-Art Coal Units for Cliffside Project)	WITH CONDITIONS

HEARD IN: Charlotte-Mecklenburg Government Center, 600 E. Fourth Street, Charlotte, North Carolina on August 30, 2006; Council Chambers, Shelby City Hall, 300 S. Washington Street, Shelby, North Carolina on August 31, 2006; Commission Hearing Room, Dobbs Building, 430 N. Salisbury Street, Raleigh, North Carolina on September 12-14, 2006; and
Public Library of Charlotte and Mecklenburg County, Francis Auditorium, 310 N. Tryon Street, Charlotte, North Carolina on January 10, 2007; Council Chambers, Shelby City Hall, 300 S. Washington Street, Shelby, North Carolina on January 11, 2007; Commission Hearing Room, Dobbs Building, 430 N. Salisbury Street, Raleigh, North Carolina on January 17-19, 2007

BEFORE: Commissioner Sam J. Ervin, IV, Presiding, and Commissioners Robert V. Owens, Jr., Lorinzo L. Joyner, James Y. Kerr, II, Howard N. Lee, and William T. Culpepper, III

APPEARANCES:

For Duke Energy Carolinas, LLC:

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For Carolina Industrial Groups for Fair Utility Rates:

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For Carolina Power & Light Co., d/b/a Progress Energy Carolinas, Inc.:

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For North Carolina Waste Awareness and Reduction Network, Inc.:

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For Environmental Defense and Southern Environmental Law Center:

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For North Carolina Sustainable Energy Association:

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For Southern Alliance for Clean Energy:

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For Wells Eddleman:

Pro se

BY THE COMMISSION: On May 11, 2005, Duke Power, a division of Duke Energy Corporation, filed with the North Carolina Utilities Commission (Commission) preliminary information pursuant to Commission Rule R8-61(a) concerning plans to seek a certificate of public convenience and necessity authorizing the construction of two 800-megawatt (MW) coal-fired electric generating facilities to be located at the existing Cliffside Steam Station, situated on the border of Cleveland and Rutherford Counties, North Carolina, together with certain related transmission facilities.

On June 2, 2006, acting pursuant to G.S. 62-110.1(a) and Commission Rule R8-61(b), Duke Power Company LLC d/b/a Duke Energy Carolinas, LLC (Duke or the Company)¹ filed an application seeking the issuance of a certificate for construction of the proposed generation and transmission facilities described in the May 11, 2005 informational filing. Duke's application was accompanied by the prefiled testimony and exhibits of James E. Rogers, President and Chief Executive Officer of Duke Energy Corporation; Ellen T. Ruff, President of Duke Energy Carolinas; Janice D. Hager, Vice President of Rates and Regulatory Affairs for Duke Energy Carolinas; Mark R. Griffith, a Vice President of Global Energy Advisors, a business unit of Global Energy Decisions; and William R. McCollum, Jr., Group Vice President of Regulated Fossil/Hydro Generation for Duke Energy Corporation.

On July 6, 2006, the Commission entered an order scheduling public hearings and an evidentiary hearing, establishing deadlines for the filing of petitions to intervene and testimony, and requiring appropriate public notice.

The following organizations filed petitions to intervene and were authorized to intervene: Carolina Utility Customers Association, Inc. (CUCA); North Carolina Waste Awareness and Reduction Network, Inc. (NCWARN); Carolina Industrial Groups for Fair Utility Rates (CIGFUR III); Carolina Power & Light Company, d/b/a Progress Energy Carolinas, Inc.; Southern Alliance for Clean Energy (SACE); Environmental Defense (ED); Southern Environmental Law Center (SELC); North Carolina Municipal Power Agency Number 1; North Carolina Eastern Municipal Power Agency, Inc.; and North Carolina Sustainable Energy Association, Inc. (NCSEA). The Attorney General filed notice of

¹ In connection with the merger of Duke Energy Corporation and Cinergy Corporation approved in Docket No. E-7, Sub 795, Duke Energy Corporation was converted into a limited liability company, Duke Power Company LLC, d/b/a Duke Energy Carolinas, LLC. On October 4, 2006, the Company notified the Commission of its formal name change to Duke Energy Carolinas, LLC.

intervention under G.S. 62-20, and the intervention of the Public Staff has been recognized under G.S. 62-15(d) and Commission Rule R1-19(e).

On August 17, 2006, SACE filed a motion for an extension of time to file its testimony and a postponement of the evidentiary hearing. On August 18, 2006, ED and SELC filed a joint motion seeking similar relief, and on August 22, 2006, NCWARN moved to postpone the evidentiary hearing. On August 22, 2006, Duke filed a response opposing these motions. On August 24, 2006, the Commission entered an order granting extensions of time for the filing of intervenor testimony and rebuttal testimony but declining to postpone the evidentiary hearing.

Public hearings were held as scheduled on August 30, 2006, in Charlotte and on August 31, 2006, in Shelby. The following public witnesses testified at the Charlotte hearing: Dave Barnhardt, Bob Thomason, Beth Henry, Sally Thomas, Chatham Olive, June Blotnick, Christal Wagner, Liz Veazey, Kathryn Koppers, Bob Morgan, Elyse Hillegass, Angie Lawry, Willie Dodson, Summer Rose, Robin Koch, Rita Heath, Nick Hendricks, Todd Glasier, Susan Tompkins, Maarten Pennink, John Avery, Diana Movius, Tracey Crowe, Renee Reese, Katie Oates, Ivory Clabaugh, Tom Lannin, Tammy Bostick, Colin Hagan, Harry Taylor, and Faeiz Hindi. The following public witnesses testified at the Shelby hearing: Walter Dalton, Harold Stallcup, Bob England, Rick Roper, Tim Moore, Bill Hall, Jerry Self, Charles Hill, Robert Hawkins, Mary Accor, Vic Sarratt, Johnny Hutchins, Adelaide Craver, Stuart Gilbert, Louis Zeller, Anne Fischer, Gwen Veazey, Bill Fisk, William Frykberg, Christian Burley, Jason Byrd, Yancey Ellis, and Richard McDaniel.

On September 6, 2006, NCWARN filed the testimony and exhibits of John O. Blackburn, Professor Emeritus of Economics at Duke University, and the testimony of William H. Schlesinger, Dean of the Nicholas School of the Environment and Earth Sciences; SACE filed the testimony and exhibits of Stephen A. Smith, Executive Director of SACE; and the Public Staff filed the testimony of John R. Hinton, a Public Utilities Financial Analyst; Thomas S. Lam, a Public Utilities Engineer; and Michael C. Maness, Supervisor of the Electric Section of the Public Staff Accounting Division. On September 7, 2006, SACE, ED, and SELC filed the joint testimony and exhibits of David A. Schlissel, a Senior Consultant, and Anna Sommer, a Research Associate, with Synapse Energy Economics, Inc. On September 11, 2006, Duke filed the rebuttal testimony and exhibit of Janice D. Hager.

On September 6, 2006, Wells Eddleman (Eddleman) filed a late petition to intervene. Duke filed an objection to Eddleman's intervention the following day, and on September 11, 2006, Eddleman filed a response to Duke's objection. In a ruling from the bench at the beginning of the evidentiary hearing in Raleigh, the Commission allowed Eddleman to intervene.

The evidentiary hearing in Raleigh began as scheduled on September 12, 2006, and continued through September 14, 2006. Duke presented the testimony of witnesses Rogers, Ruff, and McCollum and a panel consisting of witnesses Hager and Griffith. NCWARN presented the testimony of witnesses Blackburn and Schlesinger. SACE, ED, and SELC presented the joint testimony of witnesses Schlissel and Sommer, testifying as a panel. SACE presented the testimony of witness Smith. The Public Staff presented the testimony of witnesses Hinton, Lam, and Maness, testifying as a panel.

Following the hearing, briefs and proposed orders were filed by the parties on October, 13, 2006.

On October 25, 2006, Duke filed a Notice of Updated Cost Information in which the Company indicated that the estimated cost of the proposed generating facilities had increased. On November 1, 2006, the Presiding Commissioner held a conference of the parties, and on November 3, 2006, the Commission issued an order reopening the record and scheduling a second hearing in Raleigh to receive evidence concerning the appropriateness of the updated cost estimate and the cost effectiveness of the proposed facilities as compared to alternatives.

On November 9, 2006, NCWARN, SELC, ED, SACE, and NCSEA filed a motion asking for the release of non-confidential cost information relating to the Cliffside project. On November 16, 2006, Duke filed a response providing a non-confidential revised cost estimate of approximately \$3.0 billion.

On November 29, 2006, Duke filed the supplemental testimony and exhibits of witnesses Hager, McCollum, and Rogers, and the testimony and exhibits of Judah Rose, a Managing Director of ICF International. On January 8, 2007, CUCA filed the testimony of Kevin W. O'Donnell, President of Nova Energy Consultants, Inc.; ED, SACE, and SELC filed the testimony and exhibits of Douglas H. Cortez, an independent energy consultant, and the joint supplemental testimony and exhibits of witnesses Schlissel and Sommer; and the Public Staff filed the supplemental testimony and exhibits of witnesses Hinton, Lam, and Maness. On January 12, 2007, Duke filed rebuttal testimony of witnesses Hager and McCollum.

By order issued December 7, 2006, acting on motion of NCWARN, the Commission scheduled additional hearings in Charlotte and Shelby for the purpose of receiving testimony from the public concerning the issues identified in the November 3, 2006 order. This order further provided that public witness testimony would be heard at the beginning of the second evidentiary hearing in Raleigh.

The following public witnesses testified at the second Charlotte hearing: Lloyd Scher, Ronnie Bryant, Paul Woodson, Rick Roper, Veronica Waldthausen,

Elizabeth Donovan, Bill Glass, Sally Kneidel, Fred Allen, Kelly Katterhagen, Mark Levine, Harry Taylor, Bob Perkowitz, Anne Jackson, Rick Bolen, Dale Brentrup, Todd Glasier, Mickey Aberman, Robert Coleman, Bernie Hargadon, Scott Lurie, Andrew Zerkle, Ivy Zerkle, Bob Thomason, Chatham Olive, Lisa Zerkle, June Lambla, Isabella Lacki, Tom Strini, Brian Staton, Tracey Crowe, Robert Perkins, Scott Spivak, Gene Stewart, Clarie Harbold, Chris Buchanan, Merrick Teichman, Greg Augspurger, and Gregg Jocoy. The following public witnesses testified at the second Shelby hearing: Walter Dalton, Tim Moore, Brownie Plaster, Chivous Bradley, Bill Frykberg, Stuart Gilbert, Bill McCarter, Robert McGahey, Barbara Land, John Brotherton, John Jackson Hunt, Victor Shaw Sarra, Brett Keeter, Beth Henry, June Blotnick, Matt Wasson, and Yancey Ellis.

In addition to the public witnesses who testified, the Commission allowed others to submit written statements in lieu of oral testimony.

The second hearing in Raleigh began as scheduled on January 17, 2007, and continued through January 19, 2007. At the beginning of the hearing, the following public witnesses testified: Beth Kuehnert, Laura Combs, Beverly D'Aquanni, Nancy Petty, Alice Loyd, Jim Senter, David Welch, Jim Melnyk, Robert Cox, Lilian Royal, Audrey Schwankl, Andrea Vizoso, John Haebig, Marywinne Sherwood, Katie Kenlen, Barbara Janeway, Lyle Adley-Warrick, Henry Elkins, Lynice Williams, Cindy Moore, Aniko Gaal, Sally Buckner, Daniel Morris, Thomas Henkel, Maria Kingery, Helen Tart, Susan Tideman, Alison Carpenter, Chatham Olive, and Herman Jaffe.

Following the presentation of public witness testimony, Duke presented the testimony of witnesses Hager, McCollum, Rogers, and Rose, and CUCA presented the testimony of witness O'Donnell. ED, SACE, and SELC presented the testimony of witness Cortez and the joint testimony of witnesses Schlissel and Sommer. The Public Staff presented the testimony of witnesses Hinton, Lam, and Maness, testifying as a panel.

On January 26, 2007, the Presiding Commissioner issued a Notice of Receipt of Communication giving all parties notice that a communication had been received by the Commission that pertained to the testimony presented by Duke at the January 17-19, 2007 hearing and that appeared on its face to have been sent by a party to the docket. Duke made no filing in response to this notice, and the Commission finds that Duke was not prejudiced by the communication.

Following the hearing, further briefs and proposed orders were filed by the parties on February 7 and 13, 2007.

In addition to the testimony and statements of many public witnesses, the Commission has received an unprecedented number of letters and e-mails expressing intense public interest in this matter.

On February 28, 2007, the Commission issued a Notice of Decision advising the parties of its decision, to be set forth more fully in the present order.

On March 14, 2007, the Commission issued an order requesting that Duke consider disclosing approximate cost information for construction of one unit, similar to Duke's November 16, 2006 letter cited above. On March 14, 2007, Duke filed a letter authorizing the Commission to use in its order the cost estimate given by Duke witness Hager during a confidential portion of the January 19, 2007 hearing.

Based upon the foregoing, the verified application, the evidence and exhibits presented at the hearings, and the entire record in this matter, the Commission makes the following:

FINDINGS OF FACT

1. Duke is a public utility providing electric utility service to customers in its service area in North Carolina subject to the jurisdiction of the Commission.

2. The Commission has jurisdiction over this application. Pursuant to G.S. 62-110.1 and Commission Rule R8-61(b), a public utility must receive a certificate of public convenience and necessity prior to constructing electric generating facilities in North Carolina.

3. G.S. 62-110.1 is intended to provide for the orderly expansion of electric generating capacity in order to create a reliable and economical power supply and to avoid the costly overbuilding of generation resources. The Commission must consider many factors, including the present and future needs for power in the area; the extent, size, mix, and location of the utility's existing plants; arrangements for pooling or purchasing power; and the construction and fuel costs of the project and of alternatives, before granting a certificate of public convenience and necessity for a new generating facility.

4. Duke filed an application on June 2, 2006, seeking a certificate of public convenience and necessity for the construction of two 800-MW supercritical pulverized coal (SCPC) units, together with certain related transmission facilities, at the site of the existing Cliffside Steam Station on the border of Cleveland and Rutherford Counties (the Cliffside project), to provide baseload capacity, with the first unit to begin commercial operation by 2011. As part of the project, Duke plans to retire existing Cliffside Units 1 through 4, which total 198 MW.

5. Duke tested various long-range resource portfolio options against a range of sensitivities and scenarios in connection with its 2005 and 2006 Annual Plans and in an updated analysis prompted by the increased costs indicated in the October 25, 2006 Notice of Updated Cost Information. Duke

concluded that the Balanced Cliffside portfolio, the portfolio upon which the application is based, performed well under varying sensitivities and that the Cliffside project is the Company's best option at this time.

6. Duke's 2005 and 2006 Annual Plans filed with the Commission in Docket Nos. E-100, Sub 103 and Sub 109, show substantial load growth and the need for capacity additions over the next 15 years. However, during the pendency of this proceeding, Duke's need for additional generating capacity in the 2011-12 time frame, as reflected in its 2005 and 2006 Annual Plans, decreased from 3400 MW to 2120 MW. The 2120 MW figure includes a need for 800 MW of coal-fired baseload capacity.

7. At the second hearing in this proceeding, Duke revealed that it is considering the sale of up to 800 MW of the proposed two-unit, 1600-MW Cliffside project.

8. Duke has not carried its burden of proof to show that it needs 1600 MW of baseload generating capacity in the 2011-12 time frame. Duke does need 800 MW of baseload generating capacity beginning in 2011.

9. Duke has initiated a process of collaborative workshops with various stakeholders, including customers and other interested persons, and these collaboratives are expected to provide recommendations for new demand side management (DSM) programs by the middle of 2007.

10. Duke has committed to invest, on an annual basis, 1% of its annual retail revenues from the sale of electricity in energy efficiency and demand side programs, subject to completion of the ongoing collaborative workshops with stakeholders and subject to such appropriate regulatory treatment for the costs associated with those programs as the Commission may determine to be just and reasonable. Duke has further committed to retire older coal-fired generating units (in addition to Cliffside Units 1 through 4) on a MW-for-MW basis, considering the impact on the reliability of the entire system, to account for actual load reductions realized from these new programs, up to the MW level added by the Cliffside project as certificated by the Commission.

11. Cost-effective DSM programs and reliance upon renewable energy resources are both in order; however, Duke cannot rely upon DSM and renewables to eliminate or delay its need for additional baseload generating capacity beginning in 2011.

12. Duke cannot rely upon new nuclear generating facilities to supply its need for additional baseload generating capacity beginning in 2011.

13. Duke cannot rely upon integrated gasification combined cycle (IGCC) technology, a new and emerging coal-fired generation technology, to supply its need for additional baseload generating capacity beginning in 2011.

14. Natural gas-fired combined cycle (CC) generation is the only viable generation alternative to SCPC generation for supplying Duke's additional baseload generating capacity needs beginning in 2011.

15. It is unreasonable for Duke to rely upon natural gas-fired CC generation to supply all of its additional baseload generating capacity needs beginning in 2011.

16. The construction of one 800-MW SCPC unit at Cliffside and the retirement of Cliffside Units 1 through 4 will make for a more diverse and secure generation fleet and will allow Duke to increase its baseload generating capacity without significantly increasing its environmental footprint.

17. Duke appropriately conducted a comprehensive siting process to select the existing Cliffside Steam Station as the site for the additional baseload generation that it needs.

18. Duke has estimated the construction cost of one 800-MW unit at Cliffside. The Commission approves this estimate subject to the reporting requirements ordered herein.

19. The public convenience and necessity require the construction of one 800-MW SCPC generating unit, together with related transmission facilities, at the site of the existing Cliffside Steam Station, conditioned upon the retirement of existing Cliffside Units 1 through 4 and conditioned upon Duke's commitment to invest 1% of annual retail electricity revenues in energy efficiency and demand side programs and to retire older coal-fired generating units (in addition to Cliffside Units 1 through 4) on a MW-for-MW basis, considering the impact on reliability, for actual load reductions realized from these new programs up to the MW level added by the Cliffside unit. As a result, Duke is hereby granted a certificate of public convenience and necessity pursuant to G.S. 62-110.1 authorizing construction of one 800-MW SCPC generating unit subject to the conditions enumerated above.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 1 AND 2

The evidence in support of these findings of fact is found in the certificate application for the Cliffside project, the testimony and exhibits in this docket, and the statutes and rules governing the authority and jurisdiction of the Commission. These findings are informational, procedural, and jurisdictional in nature.

EVIDENCE AND CONCLUSIONS FOR FINDING OF FACT NO. 3

This finding of fact is based upon the statutes and case law of North Carolina.

The ED/NCSEA/NCWARN/SACE/SELC brief argues that the Commission must consider the issues of need and cost. The Commission's mandate in this proceeding is broader than that. G.S. 62-2(a)(3) and (3a) declare it policies of the State, among others, to promote adequate, reliable, and economical utility service and to require energy planning "to result in the least cost mix of generation and demand-reduction measures which is achievable..." The Utilities Commission is given authority to regulate public utilities in accordance with these policies. G.S. 62-110.1(a) provides that no public utility shall begin the construction of any electric generating facility to be directly or indirectly used for furnishing public utility service without first obtaining a certificate of public convenience and necessity from the Commission. G.S. 62-110.1(c) requires the Commission to develop and keep current an analysis of the long-range needs for expansion of electric generating facilities in the State and to "consider such analysis in acting upon any petition by any utility for construction."

G.S. 62-110.1 is intended to provide for the orderly expansion of electric generating capacity in order to create a reliable and economical power supply and to avoid the costly overbuilding of generation resources. State ex rel. Utilities Comm. v. Empire Power Co., 112 NCApp 265, 278 (1993), disc. rev. denied, 335 NC 564 (1994); State ex rel. Utilities Comm. v. High Rock Lake Ass'n, 37 NCApp 138, 141, disc. rev. denied, 295 NC 646 (1978). A public need for a proposed generating facility must be established before a certificate is issued. Empire, 112 NCApp at 279-80; High Rock Lake, 37 NCApp at 140. Beyond need, the Commission must also determine if the public convenience and necessity are best served by the generation option being proposed. The standard of public convenience and necessity is relative or elastic, rather than abstract or absolute, and the facts of each case must be considered. State ex rel. Utilities Comm. v. Casey, 245 NC 297, 302 (1957). "[Chapter 780 of the 1975 Session Laws], codified as G.S. 62-110.1(c)-(f), directs the Utilities Commission to consider the present and future needs for power in the area, the extent, size, mix and location of the utility's plants, arrangements for pooling or purchasing power, and the construction costs of the project before granting a certificate of public convenience and necessity for a new facility." High Rock Lake, 37 NCApp at 140-1.

As hereinafter discussed in this order, the Commission has considered all of these factors -- need, the size and mix of existing plants, pooling, purchases, DSM, alternative technologies including renewables, fuel costs, and construction costs -- in determining whether the public convenience and necessity are served by Duke's proposal in this docket.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 4 AND 5

The evidence supporting these findings of fact is contained in the testimony and exhibits of Duke witnesses Rogers, Rose, McCollum, Griffith, and Hager and Public Staff witnesses Maness and Hinton.

Duke offered considerable testimony as to the process used to determine that it is appropriate to add baseload capacity in the 2011-12 time frame and that the Cliffside project is the best option. Witness Hager testified that the Company develops and files an annual resource plan based upon a 15-year forecast and a target reserve margin of 17%. The decision to pursue the Cliffside project was one component of the action plan resulting from the 2005 planning process. In the 2005 Annual Plan, Duke identified potential supply-side resources and performed an economic screening process. The technologies that passed all of the screens in 2005 were combustion turbine, coal, combined cycle, and nuclear. Renewable technologies were tested, but did not pass the screening. Using the initial screening results, Duke developed resource portfolios that were tested under baseline assumptions and then subjected to analysis of their sensitivity to factors such as changes in fuel costs, load growth, and climate change policy. The results showed that a combination of new peaking, intermediate, and baseload generation, as well as DSM resources, is needed over the next 15 years. The generation portfolios including 1600 MW of baseload coal capacity consistently outperformed alternative portfolios during Duke's initial analysis.

Duke witness Griffith offered a more detailed explanation of the process at the September 2006 hearing. He testified that the process consisted of two sub-processes, a screening process and a more detailed portfolio analysis. The screening process examines the economics of a wide range of resource alternatives, using such tools as a busbar screening curve. The screening assists in developing specific portfolio strategies that can be analyzed further. Witness Griffith testified that his firm, Global Energy, determined a series of portfolio strategies that could then be analyzed in more detail in the portfolio analysis process. Global Energy used its Capacity Expansion Model (CEM), which evaluates the economics of every possible combination of resources available and identifies the lowest cost strategy given the future envisioned by the scenario or sensitivity case. The CEM produced ten alternative resource portfolios. These portfolios were then analyzed using the Planning and Risk (PAR) simulation model. The PAR model, which is more detailed than the CEM, analyzed all ten portfolios under baseline assumptions. Six portfolios were then chosen and subjected to sensitivity analyses. According to witness Griffith, the PAR model clearly indicated that a portfolio with 1600 MW of coal generation was dominant in the base case and in the majority of the sensitivity analyses.

The six portfolios, which have been analyzed in one form or another since the 2005 planning process, are as follows:

- (1) Balanced Cliffside -- coal (1600 MW), nuclear (1734 MW), combustion turbines (2771 MW), and retirement of Cliffside Units 1-4;
- (2) Balanced Single Unit Cliffside -- coal (800 MW), nuclear (1734 MW), combined cycle (585 MW), combustion turbines (2990 MW), and retirement of Cliffside Units 1-4;
- (3) Balanced Cliffside with Retirements -- coal (1600 MW), nuclear (1734 MW), combustion turbines (3345 MW), retirement of Cliffside Units 1-4, and retirement of 577 MW of older coal capacity;
- (4) All Gas and Nuclear -- nuclear (1734 MW), combined cycle (1170 MW), and combustion turbines (3010 MW);
- (5) All Gas -- combined cycle (2925 MW) and combustion turbines (2990 MW); and
- (6) Cliffside and Gas -- coal (1600 MW), combined cycle (1755 MW), combustion turbines (2756 MW), and retirement of Cliffside Units 1-4.

At the September 2006 hearing, Duke and Public Staff witnesses concluded that the Cliffside project, which is based upon the Balanced Cliffside portfolio, is the best option given the needs of Duke customers. Subsequent to the September 2006 hearing and the cost increases that Duke reported to the Commission, witness Hager updated the cost data for all of the supply-side alternatives considered in the screening process in the 2006 Annual Plan and performed additional analysis to determine if the Cliffside project remained the best choice. The portfolios evaluated in the updated analysis were the same as those evaluated in the 2006 Plan with the addition of a seventh portfolio that considered a sale of 800 MW of the Cliffside project to a third party. The new Balanced Cliffside Shared Ownership portfolio included coal (1600 MW with 800 MW owned by an outside entity), nuclear (1734 MW), combined cycle (585 MW), combustion turbines (2990 MW), and retirement of Cliffside Units 1-4.²

The result of Duke's updated analysis was that the All Gas and Nuclear portfolio had the lowest present value revenue requirements (PVRR) under base assumptions over a 35-year study period. The Balanced Cliffside portfolio was second. The difference in PVRR between the top two portfolios would result in average rates less than 0.3% higher each year over the study period. However, the Balanced Cliffside portfolio was robust under various key sensitivities, including high gas prices, high load, high gas and coal prices, CO₂ tax and high gas prices, and high gas and coal prices coupled with a 20% increase in nuclear capital costs. At the January 2007 hearing, Hager stated that the Cliffside project provides a balance of reliability, timeliness, and cost-effectiveness. The Public Staff witnesses also continued to support the Cliffside project.

² Note that the two portfolios that add 800 MW at Cliffside, the Balanced Single Unit and the Shared Ownership, both include retirement of Cliffside Units 1-4, leaving a net of 600 MW gained at Cliffside. Duke's remaining needs are obviously satisfied by the other generation included in these portfolios.

The Commission concludes that it was appropriate for Duke to conduct the long-range computer analyses of various supply-side resource options, and the Commission has considered these in its deliberations herein. The matter presently before the Commission is the application for the Cliffside project. The Commission cannot commit, and is not called upon to commit, to a complete portfolio of new construction running years into the future. The Commission must take from these analyses the information that is helpful in making the present decision as to whether the public convenience and necessity are served by Duke's application for a certificate for the Cliffside project. It is appropriate for the Commission to consider many factors in making this decision, including the overall integrated resource plan of the utility, but the Commission is not bound by the results of any single least-cost computer study.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 6-8

The evidence supporting these findings of fact is contained in Duke's 2005 and 2006 Annual Plans and in the testimony and exhibits of Company witnesses Rogers, Ruff, and Hager; Public Staff witness Hinton; and SACE/ED/SELC witnesses Schlissel and Sommer.

At the September 2006 hearing, Duke witness Rogers testified that the Company's most important overall objective is to ensure that its customers have access to reliable and reasonably priced electricity to meet their needs. Achievement of this objective enables businesses to feel secure in locating and maintaining facilities in North Carolina, fosters economic growth, and contributes to the quality of life for all citizens of the State.

Duke witness Ruff testified that the Company's 2005 Annual Plan "demonstrates the need for 3400 additional MW of capacity in 2011, which increases to 4360 MW in 2014." She stated that Duke performed a least-cost study of potential supply-side and demand-side resources and "determined that new coal capacity is the best option for meeting the earliest baseload generation needs." She further stated that this new coal capacity should be in the form of two 800-MW units at Duke's existing Cliffside plant, with the first unit on line in 2011.

Witness Hager testified that Duke's annual planning process begins with a 15-year forecast of the Company's peak demands and energy sales. She noted that Duke's average annual load growth is between 300 MW and 400 MW. Duke is adding about 40,000 to 60,000 new customers each year and, in addition, needs to replace certain existing purchase power agreements that expire during the planning horizon. Hager also testified that the 2005 Annual Plan indicated a need for 3400 MW of cumulative resource additions by 2011 and that approximately 2841 MW of these additions would be peaking capacity and 800 MW would be baseload capacity. In Duke's 2006 Annual Plan, which was prepared after Duke's initial testimony herein was filed, the comparable need by year 2011 is 2120 MW. The change from the 2005 Plan is largely attributable to

Duke's purchase of the 825-MW Rockingham generating facility and the decision by Energy United, an electric membership cooperative, not to enter into a power purchase agreement with Duke. Witness Hager testified that, under Duke's 2006 Annual Plan, the 2120 MW need would be satisfied by 64 MW of additional nuclear capacity at the Catawba plant, two 564-MW gas combustion turbine or combined cycle units, and 800 MW of coal capacity. She testified that the second 800-MW Cliffside unit in 2012 achieves a reserve margin of at least 17%.

Public Staff witness Hinton testified that he believes the peak load and energy sales forecasts contained in Duke's 2005 and 2006 Annual Plans are reasonable.

SACE/ED/SELC witnesses Schlissel and Sommer testified that Duke has not adequately demonstrated a need for 1600 MW of baseload capacity in 2011. They maintained that, at most, Duke has demonstrated that additional capacity is needed in the peak summer hours and that the high reserve margins in the 2005 Annual Plan for winter peak hours suggest that Duke does not need any baseload capacity until 2013. Witness Schlissel testified that Duke's failure to present evidence concerning its load duration curve, together with the lack of evidence that the Company fully investigated buying capacity from other utilities, leaves doubt as to whether there is a need for the additional baseload capacity. He argued that Duke should have looked at a wider range of alternatives -- not just coal, natural gas, and nuclear -- and should have also considered a range of energy efficiency programs, renewable technologies, and purchases from the market. He opined that, if Duke had adopted this approach, it might well have projected a need for peaking capacity in 2011, rather than baseload capacity.

At the January 2007 hearing, Duke introduced for the first time the possibility of selling up to half of the proposed 1600-MW capacity of the Cliffside project. Witness Hager presented an analysis of a Shared Ownership portfolio. She testified that partial ownership almost always outperforms full ownership, that the Shared Ownership portfolio achieves savings over the Single Unit portfolio because there are substantial economies of scale in building both units, and that "the Company will pursue a partial sale of up to 50% of the Cliffside Project if it is determined that such a sale will improve the economics for the Company and its customers." Hager denied that consideration of such a sale reveals a lack of need for the full 1600 MW as proposed. She testified, "It's just a matter of which units get dispatched when and at what rate" and, "If we have it, it has benefits." In the event of such a sale, an additional 585 MW of intermediate gas-fired combined cycle capacity would be added to the Duke system in addition to the new coal-fired capacity.

Witness Rogers testified, "I'm open to doing [the Cliffside project] with a partner and building a regional plant." He presented shared ownership as a matter of "good business sense to explore spreading those costs, risks, and benefits among more than one electric provider in the region." Duke customers

would receive “a ‘volume’ discount – 800 or so MW, built at the lower 1600 MW cost.”

Duke and the Public Staff both argue that Duke’s 2005 and 2006 Annual Plans demonstrate the need for a substantial amount of additional supply-side capacity beginning in the 2011-12 time frame, and that the plans support granting a certificate for the Cliffside project; however, the Commission is not convinced that these plans establish a need for the entire project. Duke’s certificate application filed on June 2, 2006, was based upon the projected load requirements in Duke’s 2005 Annual Plan. The application states that “the need for the Cliffside Project is demonstrated in Duke Energy Carolinas’ 2005 Annual Plan filed with the Commission on November 1, 2005, in Docket No. E-100, Sub 103....Duke Energy Carolinas’ 2005 Annual Plan identifies the need for an additional 3,400 MW of new resources to meet customers’ energy needs by 2011 and 3,810 MW by 2012.” Although the 2005 plan projected a need for an additional 3400 MW from 2007 through 2011, a large portion of this additional 3400 MW was to accommodate four anticipated wholesale contracts with North Carolina cooperatives, which were expected to begin in September 2006 and continue through 2021. Shortly after the filing of the Cliffside application, Duke filed its 2006 Annual Plan in Docket No. E-100, Sub 109, on September 1, 2006 (corrected on September 11 and updated on October 31). In its 2006 plan, Duke states that only three of the four cooperatives decided to sign wholesale contracts with Duke. Duke’s 2006 plan projected that additional load from 2007 through 2011 had declined from the 3400 MW figure cited in the 2005 plan to 2120 MW, a significant reduction of 1280 MW.

At the first evidentiary hearing in September 2006, some Duke witnesses continued to cite the 3400 MW figure, even though the 2006 plan had been filed by that time. Duke witness Hager acknowledged the reduction reflected in the 2006 plan and explained that the reduction resulted primarily from Duke’s purchase of the Rockingham Power, LLC, plant, which has a capacity of about 825 MW, and the decision of the fourth cooperative not to enter into a wholesale contract with Duke. This fourth contract, which did not materialize, had been expected to involve about 500 MW. Hager testified that the 2120 MW figure set forth in the 2006 plan represents the amount of capacity beyond existing generation (including Rockingham) and existing and projected DSM needed to meet a 17% reserve margin. She explained that the 2120 MW of projected need would be satisfied by 64 MW of additional nuclear capacity at the Catawba plant, two 564-MW combustion turbines or combined cycle units, and 800 MW of coal capacity. When asked to justify the proposed 1600 MW of coal capacity from Cliffside, Hager testified that adding the second Cliffside unit in 2012 would raise the reserve margin, which was projected as 16.3% in 2011, to 18.5% in 2012.

For purposes of this proceeding, the Commission accepts the 2120 MW need projected in Duke’s 2006 plan, but the projections in the 2006 plan make, at best, a weak case for the full Cliffside project. They show a need for only 800

MW of coal-fired baseload capacity in 2011. While the projected reserve margin falls below the 17% goal in 2011, it is only slightly below. The reserve margin would fall further in subsequent years, but only if nothing else were done. In fact, there are many options besides a second Cliffside unit for making up the difference and regaining the desired reserve margin. For example, construction of intermediate gas-fired combined cycle capacity could be moved up (which is what Duke proposes to do in the event that ownership of Cliffside is shared). Other options include purchases (Hager testified that Duke is always looking for purchase opportunities), and renewables (Rogers testified to a probability that a renewable portfolio standard will be enacted into law).

The case for certification of a second Cliffside unit was weakened further during the second hearing in January 2007 by the introduction, for the first time, of the possibility that Duke might sell up to 800 MW of the proposed Cliffside capacity. Under the Shared Ownership portfolio that Duke presented, up to one-half of the proposed capacity would be owned by another company and used for that other company's purposes; there would be no buyback by Duke.

Several reasons were given in support of a sale. One was the economies of scale realized from building both units: Duke customers would get a "volume discount," 800 MW built at a lower per/MW cost. Hager testified that these economies of scale were significant; however, a similar argument could be made for almost any construction project. Economies of scale, in and of themselves, do not establish a need for the capacity, and the need for the capacity is the Commission's initial consideration under G.S. 62-110.1.

Other reasons in support of a sale were the sharing of risks and the regional approach to building generation suggested by witness Rogers. The record is simply insufficient for the Commission to rely upon these arguments for two reasons. First, G.S. 62-111(d) provides that no person shall obtain a "franchise" for the purpose of transferring it to another. A "franchise" includes certificates. G.S. 62-3(11). G.S. 62-110.1 does not envision the Commission granting a certificate for a second Cliffside unit with the knowledge or expectation that Duke will promptly sell it. Second, although G.S. 62-110.1(d) speaks to "pooling of plant," shared ownership is not the basis upon which Duke filed its application herein, and there is no evidence of any regional or joint need that such shared ownership would serve.

Witness Hager was asked at the hearing whether Duke's consideration of a sale demonstrates that the second Cliffside unit is not needed. In response, she discussed the dispatch of plant and explained, "If we own the full 1600, think about [sic] everything else drops a certain percentage in terms of its capacity factors. If we only own 800, they drop a little less....If we have it, it has benefits." The Commission is not convinced that a level of improved dispatch that Duke can either take or manage without is enough to meet the standard of public convenience and necessity.

The Public Staff argues in its brief that the Commission should not consider a possible sale because “such a transaction would be subject to separate review by the Commission” in the future. However, the Commission does not believe that it can determine whether a second 800-MW unit is required by the public convenience and necessity without knowing who would own the second unit, what need would be served, and how the costs of operation would be allocated. The Public Staff would leave such matters to a subsequent proceeding, but the Commission believes that these matters are essential considerations under G.S. 62-110.1 that must be resolved in this proceeding in order for a certificate to be granted.

The Attorney General contends in his brief that the evidence of a possible sale shows that Duke has not demonstrated a need for the second 800-MW Cliffside unit. “If Duke is prepared to sell half of the proposed 1600 MW, then it must not need that capacity.” Relying heavily on this contention, the Attorney General urges the Commission to grant a certificate for only one Cliffside unit at this time. The Commission agrees.

Given the baseload capacity needs shown in Duke’s 2006 Annual Plan, given Duke’s consideration of selling up to half of the proposed Cliffside capacity, and given uncertainty over the ownership and use of a second 800-MW unit, the Commission concludes that Duke has not shown a need for a second 800-MW unit sufficient for present purposes. In summary, the Commission concludes that Duke has not carried its burden of proof to show that it needs 1600 MW of baseload generating capacity in the 2011-12 time frame. Duke has shown that it needs 800 MW of baseload generating capacity beginning in 2011.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 9-11

The evidence supporting these findings of fact is found in the testimony of Duke witnesses Rogers and Hager; SACE/ED/SELC witnesses Schlissel and Sommer; Public Staff witnesses Lam, Maness, and Hinton; NCWARN witness Blackburn; and SACE witness Smith.

Duke witness Hager testified to Duke’s commitment to DSM, which includes both demand response and energy efficiency. The existing demand response programs include time-of-use programs and interruptible programs, and these programs are believed to have reduced the summer 2006 peak by 766 MW. The existing energy efficiency programs include Energy Star, which promotes more energy efficient homes; a loan program to encourage increased energy efficiency in existing homes; and a comparable loan program for low-income customers.

Hager stated that the only new DSM programs included in the 2005 Annual Plan were 100 MW of new demand response programs. In its 2006

Annual Plan, Duke added 101 MW of new energy efficiency programs, which, Hager testified, is indicative of what can be achieved by future cost-effective energy efficiency programs. The total amount of new DSM in the 2006 plan was therefore 201 MW. She testified that the Company did not include any additional DSM in its recent, updated analyses because it had no new information. However, she stated that Duke is currently participating in collaborative workshops with various stakeholders to develop new DSM programs, and it is thought that the results from those sessions will be available in mid-2007. Hager is hopeful that these DSM collaborative workshops will produce new information to incorporate into the 2007 modeling. Stakeholders involved in these collaboratives include, among others, Environmental Defense, Lowe's Home Center, Food Lion, the University of North Carolina, the North Carolina Housing Authority, the State Energy Office, the Attorney General, and the Public Staff.

Hager noted that, while there has been much discussion about the potential for additional energy efficiency programs, no one has proposed a set of programs that Duke could run on its system, and she asserted that the Company cannot ignore forecasted demand in favor of speculation regarding the ability of DSM to reduce some of the need. Hager was cross-examined about the suggestion in the December 2006 GDS Associates study³ that North Carolina could reduce its electric energy use by 14% by 2017 through energy efficiency programs. She expressed skepticism that such results could, in fact, be achieved on Duke's system, and she stated that the study depends on certain simplifying assumptions that may not be appropriate. She testified that, regardless of what the GDS report may say, one cannot reasonably assume that there will be sufficient energy efficiency available to offset the proposed Cliffside units in the time frame when they will be needed.

With respect to renewable generation, witness Hager referred to the December 2006 report of La Capra Associates on the feasibility of a renewable portfolio standard in North Carolina,⁴ and she noted that Jonathan Winer of La Capra has been quoted as saying that, even if a renewable portfolio standard were adopted, the coal plants now being planned would likely still be needed. Witness Hager testified that installation of a MW of renewable generation does not automatically eliminate the need for a MW of conventional generation and that, if all the renewable generation contemplated by the La Capra study is installed, there might be 1000 MW of renewable generation added to Duke's system but only about 300 or so MW of conventional generation displaced.

³ A Study of the Feasibility of Energy Efficiency as an Eligible Resource as Part of a Renewable Portfolio Standard for the State of North Carolina, GDS Associates, Inc., December 2006.

⁴ Analysis of a Renewable Portfolio Standard for the State of North Carolina, La Capra Associates, December 2006.

SACE/ED/SELC witnesses Schlissel and Sommer asserted that the efficiency programs outlined in Duke's 2005 Annual Plan are woefully inadequate compared to energy efficiency programs across the nation. Witness Schlissel testified that an aggressive energy efficiency program would mimic the results of the low-load scenario used in Duke's cost studies, a scenario in which gas-fired generation costs less than coal. Witness Sommer testified that the low-load scenario is achievable if one were to apply an aggressive energy efficiency program as discussed in the GDS study. She testified that the GDS study's goal of a 14% reduction by 2017 from energy efficiency measures was conservative and that the potential might be higher. Witness Schlissel stated that energy efficiency programs are more comparable to a baseload resource and that new energy efficiency programs would displace baseload capacity. He testified that adding 1600 MW of baseload capacity through construction of the Cliffside project would lessen Duke's incentive to increase the use of energy efficiency and that Duke should re-run its cost studies to reflect energy efficiency portfolios based on the GDS report.

Witnesses Schlissel and Sommer also described ways in which they believe that Duke's implementation of the CEM model was flawed. First, they stated that Duke should have used a different programming mode in its CEM modeling. Duke operated the CEM model in a programming mode which does not require the addition of capacity in the discrete amounts that would normally be built. Running the CEM model in a different mode would produce different results and might add less capacity than the runs presented by Duke. Second, the witnesses testified that Duke eliminated all but fossil and nuclear options in its busbar screening analysis. Alternative options were never passed to the CEM for analysis and could not be selected. Alternative options include DSM and renewable options, which, according to the witnesses, could have been analyzed by the CEM and which might have been attractive as hedges against the uncertainties of future fuel prices, capital costs, and greenhouse gas regulation.

They also testified that Duke should have considered biomass and wind power as alternatives to coal, citing a July 2004 report by the North Carolina Solar Center finding that biomass is a commercially proven and viable option for North Carolina. Additionally, they stated that they have seen estimates of the potential for perhaps 1700 to 2000 MW of biomass generation in North Carolina and that actual experience and studies have shown that wind power can reduce the need for other capacity and provide low-cost energy.

Witnesses Schlissel and Sommer testified at the January 2007 hearing that they had not had sufficient time to fully review Duke's updated quantitative analysis results, but that, even after a relatively brief review, the updated results do not support the addition of the Cliffside project in 2011-12. In the updated analysis, the CEM generally added less coal capacity. However, due to time constraints, Duke simply used the portfolios analyzed in the original 2006 analysis to evaluate the impact of the updated Cliffside costs, rather than using

the results of the new CEM runs to develop new resource portfolios. There is, therefore, a “disconnect” between the updated CEM results and the portfolios used in the updated PAR analysis.

Responding to witnesses Schlissel and Sommer, witness Hager testified that she believes it is inappropriate to compare DSM to supply-side resources using screening curves; use of a detailed production model is necessary to capture the interactions between such different resource options. She stated that there was not enough information available on the details of potential DSM programs to include them in the CEM as a flexible resource, but that Duke hoped to do so in the future as a result of the work of the collaboratives. For purposes of the 2006 analysis, Duke included a level of DSM resources that it considers indicative of what can be achieved. She does not believe that there will be enough DSM to offset the need for the Cliffside project, and the risk of delay until more data is available is too great. Additionally, witness Hager testified that the low-load scenario contains a greater reduction in load than the energy efficiency savings shown in the La Capra study.

Witness Hager testified that Duke prefers to run the CEM model in the mode that identifies exactly the various types of capacity needed in each time period. The CEM analysis is still a high-level screening process, not as rigorous as the more detailed analysis that the Company then proceeds to perform. The Company uses the results of each run, or perhaps several CEM runs, to create possible portfolios with reasonable sizes and construction dates.

Witness Hager disagreed with Schlissel and Sommer’s conclusion that the updated CEM runs do not support the Cliffside project. She indicated that the updated CEM results, set forth in Table 1 of Schlissel and Sommer’s testimony, included outcomes with various amounts of new coal capacity being added, and some of the new CEM runs show coal capacity being added in 2011. She testified that the portfolios evaluated by the updated PAR were appropriate to help management decide whether to proceed with the Cliffside project and that additional analysis was unnecessary.

With respect to wind and biomass, Duke witness Hager testified that the Company included 75 MW of wind power in its 2005 analysis and 100 MW each of wind and biomass in its 2006 analysis. She stated that Duke’s analysis is focused on which resource technologies will result in the least cost being charged to its customers. She indicated that, to the extent renewable technologies can provide power on a least-cost basis, they will be included in Duke’s portfolio of resources.

Duke witness Rogers is co-chair of the National Action Plan for Energy Efficiency. He testified that DSM is a useful tool, but that DSM alone cannot completely address increased load demand and that energy efficiency programs cannot offset the need for the Cliffside project. Although other states provide

examples of new DSM programs that may help improve energy efficiency in North Carolina, one cannot accurately predict how well programs will transfer from one state to another. Rogers testified that he has created a special group to focus on building energy efficiency programs in all of the states where Duke Energy operates. Rogers stated that, when a utility decides to reinvigorate its DSM process, three to five years may be required before the process “gets rolling.” Furthermore, after a specific energy efficiency program is implemented, one or two years are required in order to determine by how much the program has reduced customer demand. There is, too, a point of diminishing returns with investments in DSM; in other words, there is a point at which increasing the amount of money devoted to such programs becomes inefficient and impractical.

Duke committed \$2 million to conservation and customer education programs as part of its merger with Cinergy Corporation. Witness Rogers testified that, subject to completion of the Company’s ongoing collaborative process to develop new energy efficiency programs and subject to appropriate regulatory treatment of the Company’s energy efficiency investments, Duke is now willing to commit to invest 1% of its annual revenues in energy efficiency programs. He stated that 1% of annual revenues is approximately \$50 million. Witness Rogers further testified that, upon commercial operation of the Cliffside project and subject to appropriate regulatory approvals and in the absence of compelling customer or system reliability needs, Duke will retire generation from its older, less efficient coal units on a MW-per-MW basis for every MW saved by new energy efficiency programs up to the level added by the Cliffside project. Rogers testified that “in the event that we end up with only one unit, [the commitment to retire older coal plants based on energy efficiency gains] would be contingent on that 800 megawatt, tied to that 800 number.” Rogers explained that such new programs would include both demand response and energy efficiency programs. With respect to what constitutes “appropriate regulatory treatment,” he proposed that the Commission take a fresh look at incentives for energy efficiency and come up with a more modern approach; however, he agreed that Duke will accept whatever treatment the Commission decides to be appropriate. Witness Rogers stated that Duke is “not tying [the commitment to invest in energy efficiency programs] to approval of the Cliffside Project but we thought it was important in the context of rolling out – where Cliffside is the central part of our plan to also show the Commission that we have other parts of our plan.”

Rogers agreed that, should renewable portfolio standard legislation with energy efficiency language come from Congress or the North Carolina legislature, he would be willing to discuss that statute with third parties.

Public Staff witnesses Lam, Maness, and Hinton testified that many of the DSM options suggested by intervenors are not cost-effective. The Public Staff contacted commission staffs in other states to compare Duke’s DSM programs to others, and the Public Staff believes that the ongoing DSM collaboratives will be useful.

NCWARN witness Blackburn suggested that a more detailed study of energy efficiency programs is needed. He estimated that Duke could save six to seven billion kilowatthours of electricity from residential sales over the next ten years. Witness Blackburn maintained that Duke's failure to consider any conservation or energy efficiency programs that might cause non-participating customers to pay higher rates was inappropriate.

SACE witness Smith testified that Duke has not done an adequate job of aggressively pursuing energy efficiency. He stated that Duke does not have to build a new plant immediately since it has a 17% reserve margin, and that the Commission should deny the application and instruct Duke to give greater weight to energy efficiency and renewable resources. He did not rule out other resources, but stated that Duke should fully exploit DSM and renewables first.

The Commission has carefully considered the evidence as to the role of DSM and renewables in the present docket. The Commission recognizes that the approval of new programs and the appropriate regulatory treatment of costs are matters to be decided in other proceedings. The matters at issue in this proceeding are whether more aggressive DSM programs and greater reliance on renewable sources of generation could delay or replace the Cliffside project and whether Duke has properly analyzed and pursued the true potential of DSM and renewables in planning the Cliffside project.

Some parties have raised questions as to the timeliness and thoroughness of Duke's DSM analyses, especially in light of the Commission's August 31, 2006 order in Docket No. E-100, Sub 103, requiring electric utilities to file "a comprehensive analysis of their DSM plans, activities, and relevant cost/benefit information" as part of, or as a supplement to, their 2006 plans. Some parties have raised even more fundamental questions as to the propriety of Duke's cost modeling techniques. The ED/NCSEA/NCWARN/SACE/SELB brief argues that Duke improperly screened out energy efficiency and renewables from further analysis by assuming levels much lower than their true potential; that Duke should have used the CEM model in a different programming mode, in which case it might have chosen less coal; and that Duke failed to carry forward its latest CEM runs, which also chose less coal, to the latest PAR analysis. The Attorney General's brief questions why Duke found the expertise and resources to conduct three comprehensive analyses of generation portfolios, but not even one analysis of specific, new DSM programs. Duke cites its collaboratives as its means of complying with G.S. 62-2(a)(3a), but the Attorney General views these as too little and too late since construction of baseload generation is being proposed.

The Commission shares certain of these questions and concerns. Duke's estimates in its 2006 plan of an additional 100 MW of demand-response and an additional 101 MW of energy efficiency seem to have been essentially

placeholders. The Commission believes that Duke may well be able to accomplish substantially more than these levels – especially in light of the fact that Duke’s chief executive officer has taken an aggressive, national leadership position in support of energy efficiency. Despite the Commission’s concerns as to Duke’s DSM analysis, the Commission cannot conclude that the weaknesses suggested by the intervenors are sufficient to justify a delay while new cost studies are required. Duke witnesses indicated that, while Duke has not negotiated firm contracts for components to be used in the Cliffside units, it has reached preliminary arrangements whereby it has been given a “place in the queue” of utilities shopping for equipment. If Duke has to perform new studies while its application is denied or held in abeyance, it would likely lose its place in the vendors’ queues. The result could well be higher costs and delays resulting in later completion dates if the units are ultimately approved. Later completion dates create a risk that insufficient generation will be in place when needed and at its present estimated cost. Complex studies are never perfect, and they can always be improved. The Commission acknowledges that revised cost studies could provide valuable new information; however, given the circumstances of this case, the Commission does not believe that the benefits to be gained from requiring Duke to redo its studies outweigh the possible delays and cost increases resulting from the loss of Duke’s preliminary arrangements with vendors. Thus, on the present record, the Commission concludes that Duke cannot rely upon either DSM measures or additional renewable generation in the short term to eliminate or delay construction of additional supply-side resources.

Although the Commission does not believe that cost-effective DSM and renewables can eliminate or delay Duke’s need for additional baseload generating capacity in 2011, the Commission does believe that the public convenience and necessity require Duke to take reasonable and cost effective, but aggressive, steps to reduce demand and to retire its older, less efficient coal plants. The granting of the certificate for the Cliffside project must, in the Commission’s view, be tied to implementation of energy efficiency and demand side programs that will allow Duke to realize sufficient MW savings to retire its older, less efficient coal plants as rapidly as reasonably practicable, as witness Rogers committed in his testimony. Accordingly, the Commission will require Duke to honor its commitment to invest, on an annual basis, 1% of its annual retail revenues from the sale of electricity in energy efficiency and demand side programs, subject to the ongoing collaborative workshops and subject to Commission approval and to such appropriate regulatory treatment as the Commission may determine to be just and reasonable, and to retire older coal-fired generating units on a MW-for-MW basis, considering the impact on the reliability of the entire system, to account for actual load reductions realized from these new programs, up to the MW level added by the Cliffside unit certificated by this order. Duke will be required to submit a comprehensive plan for verifying MW savings from new energy efficiency programs and identifying the exact number of MW and the specific coal units to be retired pursuant to this commitment.

The Commission is eager for the uncertainty regarding the future of DSM to be resolved. The Commission is pleased with Duke's commitment to dramatically increase investment in cost effective energy efficiency and demand side programs in North Carolina, and the Commission urges Duke to pursue its collaboratives to a prompt and productive conclusion. With Duke CEO Rogers providing the leadership and with the stakeholder collaboratives providing the process, the Commission fully expects that Duke will have more meaningful data in its future filings and that Duke will achieve greater levels of DSM savings than those factored into its recent plans. The Commission believes that, for present purposes, the best approach is to act on the basis of the present record, to encourage Duke to pursue its stakeholder collaboratives, and to require that Duke adhere to its commitment to invest 1% of annual retail electricity revenues in energy efficiency and demand side programs and to match load reductions on a MW-for-MW basis with retirements of its older coal-fired generating units.

EVIDENCE AND CONCLUSIONS FOR FINDING OF FACT NO. 12

The evidence supporting this finding of fact is found in the testimony of Duke witness Rogers, SACE/ED/SELC witness Schlissel, and Public Staff witness Lam.

Witness Rogers testified that it would not be a good idea to substitute nuclear generation for the Cliffside project because a nuclear unit cannot be completed by the time that Duke needs baseload capacity. He stated that Duke is considering the possibility of building nuclear units in addition to the Cliffside project, but that there are many contested issues surrounding nuclear power, particularly the issue of waste disposal, and that there can be no certainty that a nuclear unit will ever be built. In the second hearing, Rogers testified that the ability of new nuclear power plants to achieve commercial operation by the year 2016 is uncertain. No nuclear plant has been licensed under the new regulations of the Nuclear Regulatory Commission (NRC) that permit a combined construction and operating license. While this new NRC approach is promising, it has not yet been tested, and the regulations continue to be revised. There is also uncertainty as to the ultimate cost of new nuclear units.

In the second hearing, SACE/ED/SELC witness Schlissel testified that it is highly uncertain when the new generation of nuclear plants will be built and how much they will cost.

Public Staff witness Lam testified that Duke's proposed in-service date of 2016 for future nuclear units is likely to be delayed because Duke would be among the first in over 30 years to seek a license and begin construction in the United States.

The Commission concludes that Duke cannot rely upon new nuclear generating facilities to meet its need for additional baseload capacity in 2011. The NRC's regulations are still being revised, and no new nuclear plant has yet been licensed. The new nuclear generating units anticipated by Duke would be among the first in the United States in the last 30 years, and it is uncertain whether Duke will be able to place such a unit in commercial operation by 2016, much less by 2011.

EVIDENCE AND CONCLUSIONS FOR FINDING OF FACT NO. 13

The evidence supporting this finding of fact is found in the testimony of Duke witnesses Rogers, McCollum, and Hager; NCWARN witness Schlesinger; SACE witness Smith; SACE/ED/SELC witness Cortez; CUCA witness O'Donnell; and Public Staff witness Lam.

Another alternative available to Duke is the construction of an IGCC plant. IGCC is an emerging coal technology that causes less pollution than other forms of coal-fired generation. Witness Rogers testified that Duke considered IGCC technology instead of SCPC technology for the Cliffside project but that Duke ultimately chose not to use IGCC at Cliffside for the following reasons. The initial capital costs of IGCC are expected to be approximately 15% higher than SCPC generation. Although IGCC is more efficient than SCPC in controlling pollutants, it is still a developing technology. There are presently only two operating IGCC units in the United States, both of which are small compared to the proposed Cliffside units. New SCPC plants control pollution very well, even if not as well as IGCC, and they represent the state of the art in commercially available coal-fired generation today. As technology progresses and CO₂ scrubbers become cost-effective for SCPC units, they can be installed at the Cliffside plant. Rogers testified that Duke Energy Indiana will be using IGCC at a plant to be built in Indiana. However, Indiana is a coal-producing state where there is strong government support for IGCC, and Indiana provides tax benefits for IGCC; North Carolina does not. Further, if IGCC plants are to achieve their full potential for controlling CO₂ emissions, the emissions must be sequestered by piping them into an underground geological formation. Suitable formations have been identified in Indiana, but not in North Carolina.

Duke witness McCollum testified that IGCC is a promising, but still developing, technology and that it presents issues of higher initial costs, limitations on load following and cycling capability, and the lack of suitable geological formations in the Carolinas for carbon sequestration. There are only two operational IGCC generating plants in the United States. IGCC plants involve "some very complex and finicky pieces of equipment," and IGCC demonstration plants have taken six to eight years to reach 80% capacity factors. At the second hearing, McCollum testified that the 600-MW Edwardsport IGCC plant that Duke Energy Indiana is planning for 2011 would be the first operational unit of that size in the world. The Edwardsport project is still in a conceptual

design phase. Specific bids for major pieces of equipment have yet to be obtained. He stated that there would be a minimum two-year delay to replace the Cliffside project with an IGCC plant. Witness McCollum asserted that IGCC is not the right technology to meet Duke's needs at this time. To the extent that some intervenors suggest building a pipeline to haul CO₂ from the plant to regions where sequestration would be viable, McCollum testified that construction of such a pipeline could easily cost hundreds of millions of dollars. McCollum also testified that Duke is participating in a pilot demonstration project to capture CO₂ from SCPC plants through chilled ammonia technology, and that this technology may bring the cost of carbon capture from SCPC units more in line with the projected cost of IGCC carbon capture.

Duke witness Hager testified that, as compared to a 1600-MW SCPC plant on a brownfield site, the capital cost for a new 600-MW IGCC plant is estimated to be 36% more expensive on a \$/kW basis. In preparing the 2006 Annual Plan, it was found that the capital-cost advantage of SCPC was over 50% on a \$/kW basis. IGCC was not selected as the most cost-effective option under any scenario analyzed in the 2005, 2006, or the updated modeling, including scenarios that included a carbon tax. Witness Hager testified that IGCC is a potentially viable commercial technology, even in North Carolina where carbon sequestration is not possible, but that it can only be considered as a developing technology, not as a viable option, at present.

NCWARN witness Schlesinger testified that, because of its greater efficiency and lower emissions, IGCC is a potentially attractive option for baseload plants. Even if CO₂ sequestration is not now available in North Carolina, the construction of an IGCC plant would preserve the option of piping the CO₂ to some distant location or sequestering it in some other manner in the future.

SACE witness Smith testified that IGCC can be an excellent baseload generation technology if the CO₂ emissions are sequestered, and that the Eason Chemical Company⁵ is successfully operating an IGCC plant in Tennessee. On cross-examination, he acknowledged that the Eason plant is not an electric generating plant.

SACE/ED/SELC witness Cortez testified regarding the relative costs of SCPC and IGCC generation and the impact of carbon capture on those costs, based on a statistical study of published studies by independent investigators. Based on his review and Duke's updated cost information, he was confident that an "apples to apples" comparison of building similarly sized IGCC and SCPC units at Cliffside would reveal that IGCC is the lower cost resource. With respect to carbon sequestration, he stated that moving CO₂ a distance of 500 miles to sites in central Appalachia does not appear to be an economic barrier to IGCC.

⁵ Although the transcript reads Eason Chemical Company, the witness more likely referred to the Eastman Chemical Company.

On cross-examination, witness Cortez testified that, while he generally believed IGCC to be superior to SCPC, it was not his testimony that the Commission should choose one technology over the other in this case. He stated that he had not attempted to directly compare the viability of IGCC units and SCPC units at the Cliffside site. Cortez stated his opinion that IGCC is an improving technology and that it has not proven to be as reliable as SCPC.

Public Staff witness Mr. Lam testified that IGCC generation facilities do not have the established reliability history of SCPC facilities and have higher capital costs.

The Commission concludes that Duke cannot rely upon IGCC technology to supply its need for additional baseload generating capacity beginning in 2011. IGCC units have yet to be constructed as a large-scale electric generating resource. Even if such units could be built, they would achieve commercial operation at least two years later than the Cliffside project. Given the geology of North Carolina, a cost effective method for carbon sequestration is, at best, an unresolved issue. Further, IGCC may not operate as effectively as its proponents anticipate. Reliability issues and the higher capital costs associated with IGCC may outweigh any advantages in pollution control; it is too early to know at present. IGCC is still a developing technology, and it is not a reliable alternative to the Cliffside project.

Notwithstanding this conclusion, the Commission is not at all hostile to IGCC technology. In fact, the Commission views IGCC as a promising technological option for the future. G.S. 62-2(a)(5) provides for public utility regulation to "encourage and promote harmony between public utilities . . . and the environment," and the Commission encourages the State's electric utilities to give serious consideration to IGCC as it develops.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NOS. 14-16

The evidence supporting these findings of fact is contained in the testimony of Duke witnesses Rogers, McCollum, and Hager and Public Staff witness Lam.

The only truly viable alternative to SCPC generation, under the evidence in this case, is the construction of gas-fired CC units. Duke witness Hager testified that the choices for meeting Duke's load in the 2011-12 time frame are either the Cliffside project or CC generation. She stated that Duke has discussed replacing a portion of the Cliffside project with CC if part of the project is sold; however, she strongly believes that it would not be in customers' best interests to replace the entire Cliffside project with CC generation.

Duke witness Rogers testified that, if Duke were to build no more coal generation, i.e., only natural gas generation and nuclear generation, 6% of the Company's energy would come from natural gas and Duke's fuel factor would be 30% higher than it is today. If Duke were to build all gas and no nuclear, 15% of its energy would come from natural gas, and its fuel factor would be 70% higher. He further testified that 50% of the electricity in the United States currently comes from coal and that 50% of the new generation to be built over the next 15 years is projected to be coal-fired, even with carbon regulation, for reasons of energy security. He stated that the country is in the same place with respect to the importation of natural gas today as it was with respect to the importation of oil in the 1960s. Consequently, he questioned whether it makes sense for the country's electric grid to be dependent on imports for its gas supply, in the same way that other sectors of the economy are dependent on foreign oil. Further, if CO₂ emissions are federally regulated in the future, and large numbers of gas-fired units are in use, gas demand will rise faster than gas supply, driving prices up.

Public Staff witness Lam testified that the only viable alternative to SCPC generation for supplying Duke's baseload capacity needs in the 2011-12 time frame is gas-fired CC generation. Witness Lam stated, however, that reliance on this option is inferior to the proposed SCPC units for the following reasons. The use of natural gas will result in an increased system fuel cost compared to SCPC and will rely on a currently decreasing domestic gas supply. Because CC units operate at lower capacity factors than baseload coal units, relying on them as a resource option would necessitate timely completion of the proposed nuclear units by 2016. Further, reliance on CC units would cause current non-emission-controlled, older coal units to operate at higher capacity factors than today, with the potential for expensive pollution control equipment and decreased system reliability.

With respect to the advantages of SCPC, Duke witness Rogers testified that the Cliffside project represents state-of-the-art technology in terms of emissions control as well as operational efficiency. By using SCPC technology at Cliffside and retiring Cliffside Units 1-4, Duke can substantially increase its baseload capacity without significantly increasing its environmental footprint. He further stated that the Cliffside project will give Duke the flexibility to run its older, highest-emitting coal units less frequently and to accelerate the retirement of some of those units on a MW-for-MW basis as demand reduction goals are met. Witness Rogers asserted that, as the proposed Cliffside SCPC units displace an equivalent capacity of older coal units, Duke will be able to burn less coal and produce more electricity.

Witness McCollum testified that the Cliffside project, including the retirement of Units 1-4, will reduce total current SO₂ emissions at the Cliffside site by nearly two-thirds, reduce total site NO_x emissions under normal operations, reduce water withdrawal from the Broad River, and eliminate the existing thermal

discharge into the river. He further testified that new Cliffside generation would be the first coal generation dispatched on the Duke system and would have a beneficial impact on overall emissions from the entire Duke coal-fired fleet.

Witness Lam testified that use of new, highly efficient SCPC technology will keep Duke's overall system emission levels neutral, or potentially lower, on a per-unit-of-delivered-energy basis, because these units will displace less efficient coal units.

The Commission concludes that gas-fired CC generation is less attractive than SCPC generation for meeting Duke's baseload capacity needs and that Duke should not rely upon gas-fired CC for all of the 800-MW baseload need identified beginning in 2011. The Commission reaches this conclusion for several reasons. CC generation technology is well established and commercially available; however, there are several practical reasons why CC technology must be considered less desirable than SCPC technology in this case. One of these reasons is the greater volatility of natural gas prices compared to coal prices. Obviously, it is impossible to predict future fuel prices with any certainty, but it is clear that gas prices tend to vary over a wider range than coal prices. Duke's fuel factor could be adversely impacted if Duke builds only CC generation. Further, CC plants typically operate at lower capacity factors than SCPC plants. This is appropriate for intermediate or peaking needs, but less so for baseload capacity. Gas-fired CC generation has its appropriate place in a balanced generation portfolio, but if CC generating units were built for baseload generation (instead of SCPC at Cliffside), Duke would have to run its older coal-fired units more often and would not be able to retire Cliffside Units 1-4.⁶ Greater use of the older coal units will lead to increased emissions or increased cost for pollution control. Finally, the United States' future supply of natural gas is expected to become increasingly dependent on imports. Over-reliance on gas in baseload applications would not be prudent.

The best remaining alternative available to Duke is SCPC technology as proposed for Cliffside, and the Commission concludes that use of SCPC has significant advantages and is the most desirable technology for Duke under the present circumstances. There is an abundant, domestic supply of coal. The fact that coal prices are not as volatile as gas prices makes coal a more attractive choice for baseload generation. Duke is already planning to build considerable gas-fired generation for intermediate needs, and fulfilling the present baseload needs with coal adds to the company's overall fuel diversity and security. As witness Hager testified, "History has shown that 'putting all your eggs in one basket' or, in this case, relying on a single fuel to meet all future demand is not the most prudent course of action for customers." Under the Shared Ownership portfolio, which is equivalent to our present decision in terms of fuel diversity, Duke would end up depending on gas-fired generation for only 25% of capacity

⁶ Duke's All Gas and Nuclear and its All Gas portfolios did not include retirement of Cliffside Units 1-4.

and 3% of energy in 2021. Finally, coal plants typically operate at a higher capacity factor than gas plants, allowing Duke greater flexibility to accelerate the retirement of older coal units. The Commission concludes that use of modern SCPC technology, together with the retirement of Cliffside Units 1-4, will make for a more diverse and secure generation fleet and will allow Duke to increase its baseload generating capacity without significantly increasing its environmental footprint.

Duke's commitment to retire Cliffside Units 1-4 applies in the present case, where the Commission has certificated only one Cliffside unit. One of the original portfolios presented by witness Hager, the Balanced Single Unit Cliffside portfolio, included the retirement of Cliffside Units 1-4 along with construction of only one 800-MW unit at Cliffside. At the second hearing, Hager presented the Shared Ownership portfolio. During cross examination by the Attorney General, witness Hager testified that the Shared Ownership portfolio assumes that a partner would own 800 MW, that Duke would not buy back any of the partner's capacity, and that Cliffside Units 1-4 would still be retired. She testified, "So we would own 800 of it, but we would retire 200, leaving us with a net [of] 600 for the analysis." At another point, witness Hager testified that "you get the same megawatts out of [both the Balanced Single Unit Cliffside portfolio and the Shared Ownership portfolio]." Duke's testimony foresaw that it may end up owning only one unit, that it would nonetheless retire Cliffside Units 1-4, and that it would gain 600 MW of capacity in such an event. The retirement of Cliffside Units 1-4 will, therefore, be made a condition of the certificate granted herein.

EVIDENCE AND CONCLUSIONS FOR FINDING OF FACT NO. 17

The evidence supporting this finding of fact is contained in the testimony of Duke witness McCollum and Public Staff witness Lam.

Duke witness McCollum testified to the comprehensive three-phase siting study that Duke conducted to determine the optimum location for its new baseload generation. The study identified the Cliffside site and an alternate site in South Carolina as the recommended locations for the new generating units. Duke selected the Cliffside site because it received the highest combined ranking in the siting study and because its existing critical infrastructure will keep construction and operating costs low and will minimize environmental impacts. The Company has a long-established presence in the community and has received strong support for the project from both Rutherford and Cleveland Counties.

Public Staff Witness Lam testified that the Cliffside site is an "excellent" choice, due to its existing infrastructure and available land. No party introduced evidence challenging the selection of the Cliffside site.

The Commission concludes that Duke appropriately selected the site for the Cliffside project.

EVIDENCE AND CONCLUSIONS FOR FINDING OF FACT NO. 18

The evidence supporting this finding of fact is contained in the testimony of Duke witnesses McCollum, Rose, and Hager; and Public Staff witnesses Maness and Lam.

Duke submitted confidential cost estimates for the Cliffside project, under seal pursuant to G.S. 132-1.2, in Attachment 1 to McCollum Exhibit 1. At the September hearing, McCollum testified that the Company evaluated proposals from four leading power engineering, procurement, and construction contractors and compared these proposals to industry-standard EPRI data and to Duke's own experience to formulate the cost estimate for the Cliffside project. Duke selected Shaw Stone & Webster as contractor to develop firm scope, schedule, terms, and pricing for the project.

Public Staff witnesses Maness and Lam testified that they reviewed and found the estimated construction cost to be reasonable.

Duke provided updated cost information to the Commission in its October 25, 2006 filing that showed a significant increase in the bid prices from vendors. At the second hearing, witness McCollum testified that Shaw Stone & Webster and Duke have received and evaluated bids for the boiler, steam turbine generator, and air quality system controls and that these bids suggest that the capital costs for major components of the Cliffside project could be 40 percent higher than estimated at the first hearing. Witness Rose explained that there has been a rapid increase in steel and other prices. He attributed this to a substantial increase in demand for the materials both domestically and internationally. After receiving the certificate and air permit, Duke will receive firm bids and enter into contracts with various equipment vendors.

Duke witness Hager was asked about the construction cost of the Balanced Single Unit Cliffside portfolio during the second hearing, and she testified as to the cost of building one 800-MW unit at Cliffside. She testified that the cost "for a single unit is \$1.53 billion without AFUDC, and the AFUDC is \$400 million."⁷

The granting of a certificate requires Commission approval of the cost estimate for the construction being proposed and a finding that the construction is consistent with the Commission's plan for expansion of electric generating capacity. We find that the Company has reasonably forecasted the costs associated with the Cliffside project vis-a-vis alternatives. Witness Hager testified as to the cost of building one 800-MW unit at Cliffside. We find her estimate to be reasonable, and it is approved for purposes of this proceeding. The Commission notes that its approval is made only in the context of this proceeding, which is

⁷ This testimony was given during a confidential portion of the January 19, 2007 hearing, but Duke authorized its use in this order by its March 14, 2007 letter.

concerned with approving whether or not Duke can proceed with the construction of the plant, and does not apply to any ratemaking determination or proceeding.

The Commission further notes that Duke is required by G.S. 62-110.1(f) to provide the Commission with an annual progress report and any revisions to the cost estimate. Witness Maness noted that the estimated costs of the project are expected to be finalized shortly after the first quarter of 2007. He recommended that Duke be directed to file a special report within 30 days after the estimate is finalized, but in no event later than May 31, 2007, and that Duke be given the opportunity to file supplemental reports updating the estimate every 30 days after the initial report. The Commission agrees with Maness's recommendations on the filing of cost estimates by Duke. The ordering paragraphs set out below will provide for these reports.

EVIDENCE AND CONCLUSIONS FOR FINDING OF FACT NO. 19

Duke witness Hager testified about a time in the 1960s when Duke had to build a new generating plant. Least cost planning showed that an oil-fired plant with a pipeline to Charleston would be the best choice. However, Hager testified, Duke management was uncomfortable with that course and, instead, "we built the Marshall plant which...has consistently won the most efficient coal plant in the country many times over...we used management judgment and I think our customers are significantly better off because we did that." The Commission now finds itself in a similar situation. The Commission is charged with responsibility for certificating new electric generating plants. This has been a particularly complex undertaking in this case and a difficult decision, but the Commission has used its best judgment based upon the evidence presented.

First, the Commission examined the need that the proposed generation must serve. Based upon Duke's most recent plan and upon Duke's consideration of selling up to half of the generation it proposes, the Commission cannot find that Duke has shown a need for 1600 MW of new baseload capacity. Duke presented no evidence of a regional or joint need, beyond its own need, to be served by the proposed plant. Duke did present evidence that it needs 800 MW of baseload generating capacity beginning in 2011, which it proposes to meet with coal.

Next, given a need for 800 MW of baseload capacity, the Commission has examined the various alternatives available to Duke. Each of them presents difficulties. If Duke takes no action, it would become dependent on purchases, and other utilities may have insufficient power available for sale in periods of peak demand. Duke did not issue a request for proposals (RFP) for its 2011 baseload capacity needs. Duke witness Hager testified that Duke has used the wholesale market for peaking and intermediate capacity, but that baseload capacity is fundamentally different. Hager cited possible transmission interruptions outside its control area ("there is no baseload merchant generation

in our service area or even in the ...region that we're aware of") and supplier defaults ("monetary compensation for failure to perform under a baseload contract [is] a poor substitution for the energy that a baseload unit would produce") as key concerns with using the wholesale market for baseload capacity. On the present record, without setting a precedent for other cases, the Commission cannot conclude that Duke should have issued an RFP for the capacity at issue herein. Duke is expanding its DSM initiative and has committed to invest significant funds in this effort, but the Commission cannot conclude that cost effective DSM programs can eliminate or delay the need for new generation facilities in 2011. The main benefits of Duke's DSM efforts will be realized in the years beyond that time. Similarly, the Commission cannot conclude that there are sufficient renewable resources to eliminate the need for construction of a more conventional generating plant by 2011. Furthermore, Duke will not be able to bring a nuclear plant into operation by 2011. Although Duke has offered evidence that a nuclear facility might be completed by 2016 at a favorable cost, it is entirely possible that such construction may be delayed and its costs may increase. IGCC causes less pollution than other forms of coal-fired generation, but carbon sequestration has not yet been perfected, there are no suitable geological formations for sequestration in North Carolina, and IGCC is an emerging technology that is not currently viable.

Finally, Duke -- and the Commission -- are left with a choice between natural gas CC generation and SCPC. The Commission concludes that there are several practical reasons why natural gas CC must be considered less desirable. One of these reasons is that gas prices tend to vary over a wider range than coal prices. A second reason is that natural gas CC plants typically operate at lower capacity factors than coal plants. If Duke builds gas-fired generation now, Duke will have to run its older coal-fired units more often than if it builds coal-fired generation now. The United States' natural gas supply is expected to become increasingly dependent on imports and, thus, not as secure for baseload applications as the domestic supply of coal. Finally, Duke is planning to build a number of gas-fired generating plants in the coming years, and using coal for its baseload capacity needs in 2011 will tend to diversify its generation fleet. Even without the economies of scale that would have been associated with building two SCPC units at Cliffside, the Commission believes that SCPC generation is the appropriate choice for all of the above reasons. One final advantage of the present decision is that technology appears to be moving forward in the areas of pollution control and IGCC generation. Approving one unit now will allow time for these technologies to develop before Duke needs to build more baseload generation. Approving one unit now, together with the retirement of older, coal-fired units, limits Duke's carbon footprint and serves as a hedge against the prospect of carbon regulation.

At one point, Hager testified that "we won't know which was the right decision for many, many years ultimately." That is true with respect to this order; however, given the level of need demonstrated by Duke's testimony and 2006

plan, the size and mix of Duke's existing capacity, the estimated construction costs, the uncertainties of the future, the various risks as to plant costs and fuel costs, the costs and benefits of alternative technologies and developing technologies, and the necessity to make a decision now for commercial operation of coal-fired generation in 2011, the Commission concludes that approval of one 800-MW coal-fired unit is the best of the alternatives available and is consistent with the Commission's plan for expansion of electric generating capacity.

IT IS, THEREFORE, ORDERED as follows:

1. That a certificate of public convenience and necessity should be, and is hereby, granted to Duke Energy Carolinas, LLC for the construction of one 800-MW supercritical pulverized coal electric generating facility to be located at the existing Cliffside Steam Station situated on the border of Cleveland and Rutherford Counties, North Carolina, together with related transmission facilities, subject to the following ordering paragraphs, and the present order shall constitute the certificate.

2. That Duke shall retire existing Cliffside Units 1 through 4 no later than the date of the commercial operation of the one 800-MW unit certificated herein.

3. That Duke shall honor its commitment to invest, on an annual basis, 1% of its annual retail revenues from the sale of electricity in energy efficiency and demand side programs, subject to the results of the ongoing collaborative workshops and subject to such appropriate regulatory treatment as the Commission may determine to be just and reasonable, and that Duke shall retire older coal-fired generating units (in addition to Cliffside Units 1 through 4) on a MW-for-MW basis, considering the impact on the reliability of the entire system, to account for actual load reductions realized from these new programs, up to the MW level added by the one Cliffside unit certificated herein.

4. That all such energy efficiency and demand side programs shall be submitted to the Commission for approval and shall be accompanied by a comprehensive plan for verifying MW savings. Duke shall file an annual report with the Commission on March 1 of each year setting forth the investment in each approved program for the preceding year. In addition, on March 1 of each year, Duke shall submit an annual plan for identifying the number of MW saved and the coal units to be retired.

5. That, within 30 days after the estimated cost of the Cliffside project is finalized, but in no event later than May 31, 2007, Duke shall file with the Commission a report detailing such estimated costs, and Duke may file with the Commission a report updating the initial report every 30 days thereafter, until the filing of the first annual report provided in the following ordering paragraph.

6. That, during the month of February of each year, beginning in 2008, Duke shall file with the Commission a progress report which shall provide information upon which the Commission may evaluate the current status of the construction of the unit certificated herein, including the cost thereof and any revisions to the cost estimate, and the time at which it is anticipated that said unit will become operational.

7. That the unit certificated herein shall be constructed and operated in strict accordance with all applicable laws and regulations, including the provisions of all permits issued by the North Carolina Department of Environment and Natural Resources.

8. That issuance of this order does not constitute approval of the final costs associated herewith for ratemaking purposes and this order is without prejudice to the right of any party to take issue with the ratemaking treatment of the final costs in a future proceeding.

9. That, should renewable portfolio standard legislation be enacted either by the United States Congress or the North Carolina General Assembly, Duke shall discuss such legislation with the parties to this docket.

ISSUED BY ORDER OF THE COMMISSION.

This the 21st day of March, 2007.

NORTH CAROLINA UTILITIES COMMISSION

Gail L. Mount

Gail L Mount, Deputy Clerk

Commissioner Robert V. Owens, Jr. dissents.

Ah032107.01

DOCKET NO. E-7, SUB 790

Commissioner Robert V. Owens, Jr., dissenting:

There comes a point, as one young lady public witness said in Charlotte, when you must quit talking the talk and begin walking the walk, when you just have to put your foot down and say "Enough!" For me, as one commissioner, in the building of coal-fired electric generating facilities, that time is now.

Much of the history of the United States is marked by innovation to meet necessity, by sacrifice of the comfortable and expedient in order to meet a glaring need or deficiency. Nowhere in our society is the need for that characteristic greater today than in energy production. Until we put our foot down and say "It's Time!" and, as a society, make the hard decisions and sacrifices required, we will not begin the process of remaking our energy production process into one which will not continue to destroy the environment. We are regulators, chosen and governed by a process and laws designed to let us to make independent decisions, decisions which are not politically expedient. We are uniquely situated to make the hard decisions which the industry or other, more politically directed, decision makers cannot or will not make. As John Kennedy asked: "If not us, who? If not now, when?"

If we are to approach the current environmental crisis like President Jimmy Carter said we should attack the energy crisis of the late 70's, as "the moral equivalent of war," then we must prepare ourselves to make sacrifices for our survival on this earth. The American public, if not the American shareholder, have proven time after time to be remarkably resilient and willing to make such sacrifices when necessary and when the goals are worthy and clear. There is no clearer need and no worthier goal than trying to reduce the damage we continue to do to the environment and to preserve a livable planet for our children and grandchildren.

So far, American industry in general, and the electric power industry in particular, has been reluctant to participate in environmental and green power programs. Management, directed by its investors, has pursued profits at the expense of the long-term health of our world. Sometimes, it has given token attention to the environmental destruction it causes, and sometimes has given lip service to reducing its impact. But it's usually only when the government steps in that industry can be forced to act. Only when the legislature threatened harsh legislation did the industry negotiate the clean smokestack bill, for instance. That is understandable because if a power industry manager were to take some kind of courageous pro-environmental stand which would cause his or her shareholders to sacrifice profit and the public to pay higher rates, he or she would be unemployed virtually instantly. That is neither new nor unique. Since the Industrial Revolution, industry has had to be forced to act in anything other than its own selfish interest. Safety, labor and environmental improvements in industry have come only when

they have been forced upon industry by popular will, by collective force or by government. From the latter half of the 20th century, it has more often than not been government who has stepped in to force industry to clean up its impact on our air and water and other natural resources. The free market, as much as I and others love it and work hard to protect it, has not led to the kind of innovation we absolutely must employ in this struggle. Besides, our electric industry does not operate in a free market. It is regulated by its investors and by the government. Its investors are not willing to make the kind of sacrifices required to preserve the environment over the long term. Government must act if it is to be done. As the direct regulators of the industry and the closest government agency to the problem, we have the authority and the legal and moral responsibility to do something about it.

We have forced our electric utilities to adopt demand-side management programs, integrated resource management programs, energy efficiency programs and green power programs throughout the years. In this order, the majority requires more such efforts from Duke (although any actual program is still in someone's mind) to the tune of one per cent of its annual retail revenues. As the kids of today say: "Say What!" Such efforts are laudable but woefully inadequate. The efforts made up to now and which the majority will require in this case amounts to a band-aid on a gaping wound. It might help stop a little bit of the bleeding, but it doesn't do much to correct the problem.

The problem is so well-documented and universally acknowledged by scientists worldwide that it is not even seriously debated anymore. The burning of fossil fuels pollutes our air and leads to global warming. The results are dramatic and drastic and its long-term effects potentially catastrophic for future generations. The only way to stop it is to stop burning fossil fuels. We will fail in our legal responsibilities to the people of North Carolina and in our moral responsibilities to our children and grandchildren if we do not take bold, decisive action to address the problem, not just deal with the symptoms.

North Carolina General Statute §62-110 and §62-110.1 set out the legal standards for granting a certificate of public convenience and necessity for constructing a plant to generate electricity. Neither of those statutes repeals, changes or modifies §62-2, the General Assembly's declaration of policy. In addition to the provisions about protecting the public interest and ensuring fair treatment for the utilities and the public, there is provision (5) which directs us to "[e]ncourage and promote harmony between public utilities, their users and the environment". It is not a subservient or secondary provision. It stands on equal footing with the other provisions. §62-2 gives us the authority and the responsibility to regulate public utilities to carry out the General Assembly's policy. The continued burning of fossil fuel to generate electricity does nothing to encourage or promote harmony between the utilities and the environment, in fact it does just the opposite. I see it as my legal duty to do all I can to prevent it.

I do not dispute Duke's need for 800 megawatts of new generating capacity and I applaud the majority's decision to cut the 1600 megawatt request in half. Where I differ with the majority is in the building of a coal-fired facility to achieve the new capacity. Certainly the retirement of older coal-fired units as required by the majority is desirable and must be accomplished. But replacing, megawatt for megawatt, coal-fired generation with coal-fired generation, no matter how much cleaner the new generation, continues to contribute to the problem.

The GDS Associates and La Capra Associates studies prepared for us and included in the record of this docket indicate that sufficient savings from energy efficiency and existing renewable energy sources could eliminate the need for this new coal-fired plant. Duke fails to adequately account for either resource and completely ignores available renewable energy resources in its analysis. The time and effort spent on developing new pollution sources would more wisely be spent on developing non-polluting sources of generation; just as the time and money spent trying to recover nuclear development costs early could more efficiently be spent developing the resource.

Governments, state and federal, are going to force utilities to reduce their contributions to global warming eventually. It is as inevitable as the companies' resistance to such change. The companies will try to negotiate a smaller reduction or a less costly alternative just like always. But if we are serious about the environmental impact of generating electricity, we will prohibit coal-fired plants being built to replace coal-fired plants. While we may not in our lifetimes see coal completely replaced as a fuel of choice for electricity production, and while we may not see fossil-fuel completely eliminated as a fuel source, nuclear-powered plants and the growing abundance of renewable resources can and, I think, eventually will replace coal in electricity generation. We should encourage such replacement when we can and require it when we can. The surest way to speed it up, however, is to begin here and now; to walk the walk, to put our collective foot down and say "Enough!"

Because I believe we should prohibit the building of another coal-fired generating facility in North Carolina, I respectfully dissent.

\s\ Robert V. Owens, Jr.
Commissioner Robert V. Owens, Jr.