

1 options considered by Duke Energy Carolinas. Finally, I will discuss why obtaining a
2 Certificate of Public Convenience and Necessity (“CPCN”) is critical to limiting the
3 Cliffside Project’s exposure to additional price increases.

4 Q. PLEASE DESCRIBE THE EVENTS THAT LEAD DUKE ENERGY CAROLINAS TO
5 PROVIDE UPDATED COST INFORMATION TO THE COMMISSION AND OTHER
6 PARTIES.

7 A. Prior to the September 2006 evidentiary hearing in this case, the Company had developed
8 cost estimates for the Cliffside Project based upon the best information available - -
9 indicative pricing proposals received from four engineering, procurement and
10 construction (“EPC”) firms, industry-standard Electric Power Research Institute
11 Technical Assistance Guide (“EPRI TAG©”) data, and the Company’s own experience.
12 As I explained in my direct testimony, Duke Energy Carolinas selected an EPC firm,
13 Shaw Stone & Webster (“SSW”), to assist us with the joint development of firm scope,
14 schedule, terms and pricing for the Cliffside Project. Part of this joint process includes
15 bidding and selecting major equipment and open book pricing of all other materials,
16 equipment and services. As I discussed in my prior testimony, SSW and the Company
17 will not finish evaluating all major equipment proposals, reflecting the selected
18 equipment in the plant design, and finalizing the cost estimate for the entire Cliffside
19 Project until the first quarter of 2007. However, subsequent to the September evidentiary
20 hearing, SSW and the Company have begun to receive and evaluate competitive
21 proposals from suppliers for various components of the Cliffside Project. SSW and the
22 Company have now received and evaluated proposals for the boiler, steam turbine
23 generator, and air quality control system, which suggest that the capital costs for these

1 major components could now be as much as 40% higher than was reflected in the latest
2 cost estimate prior to the September hearing. These three major scopes of power plant
3 equipment represent approximately 20-25% of the total cost of the new Cliffside units.
4 Given the significant cost increases reflected in these actual proposals, the Company
5 wanted to ensure that the Commission and other parties had the latest information prior to
6 the Commission issuing a decision on this CPCN application.

7 Q. PLEASE PROVIDE MORE DETAILS ON THE PROPOSALS RECEIVED FOR
8 THESE THREE COMPONENTS OF THE CLIFFSIDE PROJECT.

9 A. SSW and the Company received and evaluated actual proposals from three suppliers for
10 the air quality control system, which the Company defines as that equipment which
11 reduces emissions in the flue gas to levels below air permit limits, which encompasses
12 essentially all equipment downstream of the boiler. These air quality control system
13 proposals are approximately thirty-five percent higher than their cost that was reflected in
14 the latest cost estimate prior to the September hearing. We received final proposals from
15 two boiler suppliers. We are still in the process of evaluating the boiler proposals, but
16 they are approximately fifty percent higher than reflected in our estimate prior to the
17 September hearing. Finally, the Company received proposals from three suppliers for the
18 steam turbine generator. The steam turbine generator proposals are approximately thirty-
19 five to forty percent higher than the indicative bids received prior to the September
20 hearing. Because of the significant cost increases on these three major components, the
21 Company asked SSW to quickly update the overall project cost estimate based on their
22 most current understanding of market pricing they have seen for this and other projects.

1 Q. BASED UPON THE NEW INFORMATION RECEIVED, WHAT IS THE REVISED
2 COST ESTIMATE FOR THE CLIFFSIDE PROJECT?

3 A. SSW's evaluation indicates that the overall project costs for the Cliffside Project are
4 likely to increase in the same proportion as the 20-25 percent of the project I just
5 discussed. Therefore, the revised cost estimate would be [CONFIDENTIAL]

6 Q. WHAT CAUSED THE COST ESTIMATE TO INCREASE BY THAT MAGNITUDE
7 IN SUCH A RELATIVELY SHORT TIME PERIOD?

8 A. Unfortunately, there is significant lag between the development of a cost estimate,
9 obtaining a CPCN, and beginning construction. As I discussed in my prior testimony, we
10 expected to finish evaluation of major equipment proposals in the first quarter of 2007
11 and update the cost estimate at that time. However, there are several market factors in
12 flux that are affecting not only the Cliffside Project, but electric generation construction
13 plans across the country. The Company's witness Mr. Rose discusses some of these
14 market events in more detail in his testimony, but in just the past few months we have
15 certainly seen a trend of fewer bidders, higher prices, earlier payment schedules and
16 longer delivery times as vendors react to the significant increase in volume of work
17 resulting from the announcement of new power plant projects and other large energy
18 projects both in the United States and abroad.

19 Q. IS THE INCREASE IN THE ESTIMATED COST OF THE CLIFFSIDE PROJECT
20 INDICATIVE OF INCREASING COSTS FOR OTHER ALTERNATIVE
21 TECHNOLOGIES AS WELL?

1 A. Yes. As Mr. Rose also discusses in his testimony, the reality is that the increased cost
2 estimate for the Cliffside Project is driven by factors that impact all supply side
3 generation resources.

4 Q. WHAT ARE THE NEW COST ESTIMATES THAT WERE DEVELOPED BASED
5 UPON THE BEST INFORMATION AVAILABLE TO THE COMPANY NOW?

6 A. The Company's new capital cost estimates for the commercially available and feasible
7 technologies are as follows: **[CONFIDENTIAL.]**

8 Q. HOW DID DUKE ENERGY CAROLINAS DEVELOP THE UPDATED COST
9 ESTIMATES FOR THESE TECHNOLOGIES?

10 A. I have already discussed how we developed the new cost estimate for the Cliffside
11 Project. The IGCC cost estimate is based upon actual contractor cost estimates received
12 for Duke Energy Indiana's Edwardsport IGCC project. For combined cycle, we
13 obtained indicative pricing from SSW based on their recent combined cycle combustion
14 turbine projects. For simple cycle combustion turbine, we estimated that upward market
15 pressures would be similar to combined cycle, but the effects would be less pronounced
16 because there is a smaller percentage of piping, electrical, and other "commodities." For
17 nuclear, we used the latest information from the technology provider, however I should
18 note that extensive engineering and supply chain work is planned for 2007 in order to
19 further develop the cost estimate for the Lee Nuclear Station.

20 Q. HOW CONFIDENT IS DUKE ENERGY CAROLINAS THAT THE UPDATED COST
21 INFORMATION YOU HAVE DISCUSSED IS RELIABLE?

1 A. We believe that these new cost estimates are current and reflect the best information
2 available to us at this time. As Mr. Rose discusses in his testimony, our cost estimates
3 are also supported by what his international firm is seeing in the market. We believe
4 these updated cost estimates are reliable and appropriate for Duke Energy Carolinas and
5 the Commission to use in determining how to best meet the substantial capacity needs of
6 our customers in North Carolina and South Carolina.

7 Q. HOW IS THE INCREASE IN COST REFLECTED IN THE COMPANY'S UPDATED
8 IRP ANALYSIS?

9 A. As Company witness Janice Hager explains in her testimony, the new cost information I
10 have discussed in my testimony was used as an input to the updated IRP analysis. It is
11 my understanding that if the nuclear cost estimate increases, then the Company's
12 recommendation of the Cliffside Project becomes even more compelling.

13 Q. HOW DID THE COST UPDATE AFFECT THE SELECTION OF SUPERCRITICAL
14 PULVERIZED COAL FROM A TECHNOLOGY PERSPECTIVE?

15 A. Our analysis still shows supercritical pulverized coal technology as a cost-effective,
16 commercially available, and reliable option for Duke Energy Carolinas to meet its
17 customers' needs. In addition, the Cliffside Project with its state-of-the art environmental
18 controls still provides the significant benefits I testified to previously. The Cliffside
19 Project will reduce current emissions of SO₂ at the Cliffside site by nearly two-thirds,
20 reduce site NO_x emissions under normal operations, and dramatically reduce water
21 withdrawal from the Broad River and eliminate the existing thermal discharge to the
22 River. In addition, the new Cliffside units will be the most efficient on the Duke Energy
23 Carolinas fossil system which is already recognized as the most efficient in the nation.

1 Finally, development of the Cliffside Project will allow retirement of the existing, less
2 efficient, 1940s vintage Cliffside Units 1-4.

3 Q. HOW DOES THE TIMING OF RECEIPT OF THE CPCN AFFECT THE COST FOR
4 THE CLIFFSIDE PROJECT?

5 A. The Company cannot start construction of the Cliffside Project until receipt of the CPCN.
6 Until we are certain of the date we can start construction, we cannot determine when
7 major equipment must be delivered to support the construction schedule; therefore, we
8 cannot finalize orders for long lead major equipment items so we cannot finalize the
9 schedule and cost estimate. Ultimately, this adversely affects our ability to procure major
10 pieces of equipment in a timely manner. Thus, the sooner the Company can obtain the
11 CPCN, the sooner it can finalize contracts with suppliers and subcontractors for the
12 Cliffside Project and lock in prices for major equipment and services. Any further delay
13 in receiving a CPCN beyond February 28, 2007, could result in further significant cost
14 increases to the Cliffside Project.

15 Q. ARE THERE ANY ADDITIONAL CONSIDERATIONS THAT COULD AFFECT
16 THE COST OF THE CLIFFSIDE PROJECT?

17 A. Yes. Duke Energy Carolinas has applied for federal tax credits created by the Energy
18 Policy Act of 2005 for the Cliffside Project. These tax credits are designed to spur
19 investment in advanced clean coal facilities, like the Cliffside Project. The Company
20 expects to learn by November 30, 2006, whether the IRS has selected the Cliffside
21 Project to receive tax credits of up to \$125 million. We have not yet, however, included
22 the lower costs resulting from these tax credits in the cost input used in the updated IRP
23 analysis.

1 Q. DOES THIS CONCLUDE YOUR SUPPLEMENTAL TESTIMONY?

2 A. Yes, it does.