060220-EC

SEMINOLE ELECTRIC COOPERATIVE, INC.

Petition to Determine Need for

Electric Power Plant

March 2006

Direct Testimony of:

William T. Lawton

Seminole Electric

IN PARTNERSHIP WITH THOSE WE SERVE

060220-EC

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

SEMINOLE ELECTRIC COOPERATIVE, INC.

DIRECT TESTIMONY OF WILLIAM T. LAWTON

DOCKET NO. 06____-EU

MARCH 10, 2006

Q. Please state your name and business address.

A. My name is William T. Lawton. My business address is 16313 North Dale Mabry Highway, Tampa, Florida 33688-2000.

Q. By whom are you employed and what is your position?

A. I am employed by Seminole Electric Cooperative, Inc ("Seminole") as Staff Economist.

Q. Please describe your duties and responsibilities as Staff Economist.

A. The two primary responsibilities of my present position are to develop long term forecasts of electric demand and energy for Seminole and its member cooperatives (Members) and to conduct appliance saturation surveys of the Members' residential consumers. Both are joint efforts between Seminole and its Members.

Q. Please describe your educational background and business experience.

A. I have over 15 years of experience in electric demand and energy forecasting. My electric utility forecasting experience includes work at Kentucky Utilities Company

as a Financial Analyst and at Seminole as a Corporate Planning Analyst and Staff Economist. I received a Bachelor of Arts degree with honors in Economics from Michigan State University and a Master of Arts degree in Economics from the University of Detroit.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to describe Seminole's load forecasting methodology, the results of Seminole's two most recent long term load forecasts, and the demand side management (DSM) and conservation activity of Seminole's Members.

Q. Are you sponsoring any exhibits in this case?

A. Yes. I am sponsoring Exhibit WTL-1, which is a map of Seminole's Members' service territories, and Exhibit WTL-2, which is Seminole's History and Forecast of Energy and Demand.

Q. Are you sponsoring any part of the Need Study in this proceeding?

A. Yes. I am co-sponsoring Sections V, VI, VIII, as well as Appendices D and L.

Q. Please describe the existing service territory of Seminole's Members.

A. The Members' service area is primarily rural and extends approximately 400 miles from the northern border to the southwestern part of Florida. Seminole's Members provide electricity to over 800,000 consumers, serving a population of over 1.6 million people in 46 counties. This service territory encompasses a variety of

million people in 46 counties. This service territory encompasses a variety of geographic and weather conditions as well as a diverse mix of economic activity and demographic characteristics.

Q. Please describe the existing consumer base of Seminole's Members.

A. The Members' consumer mix is 90 percent residential, 9 percent commercial/ industrial, and 1 percent other. Residential consumers represent 70 percent of total energy sales, with commercial/industrial consumers representing 28 percent, and other consumers representing 2 percent. Commercial/industrial energy sales are primarily to small to medium sized retail businesses. Industrial sales, primarily small manufacturing and mining, represent only a small portion of total energy sales. Other consumers consist of irrigation, street and highway lighting, public buildings, and sales for resale.

Q. What have been Seminole's recent energy sales and peak demands?

A. Seminole provided 15,348 GWh of energy to its Members in 2004. This represents an increase of 3.7 percent from 2003 and an average annual compound growth rate (AAGR) of 5.2 percent over the past 5 years. The 2003/2004 winter peak of 3,365 MW and the 2004/2005 winter peak of 3,776 MW were both lower than the 2002/2003 winter peak of 3,982 MW due to milder winters. Seminole's highest peak demand on record occurred on February 14, 2006 at 4113 MW (estimated). The volatility in winter demands over the past four years illustrates the weather sensitive nature of Seminole's winter peak demand. Seminole's summer peak shows much

more stable growth and reached 3,448 MW in 2005, representing an increase of 11.6 percent over 2004 and an AAGR of 6.1 percent over the past 5 years.

Q. How does Seminole's consumer growth compare to the State of Florida as a whole.

A. Historically, Seminole's Members' residential consumer growth has consistently exceeded the State of Florida as a whole. Since 2000, residential consumer growth has averaged 3.4 percent annually for Seminole's Members, compared with 2.5 percent for Florida as a whole. This growth is driven by the expansion of urban areas into the Members' service territories, which is replacing farmland with housing developments. This trend is expected to continue; therefore, the Members' consumer growth rate is projected to remain higher than the consumer growth rate for Florida as a whole.

Q. Please summarize Seminole's load forecast methodology.

A. Seminole's Staff uses econometric and end-use modeling techniques to forecast the number of consumers, energy, and monthly peak demands for each of its Members. These models were developed by Staff to run on Seminole's mainframe computer. Individual Member model results are aggregated to derive the Seminole forecast.

Q. Please describe Seminole's process to forecast energy sales.

A. The Seminole energy sales forecast is the sum of the forecasts of Members' energy purchases from Seminole. Seminole's Staff follows a four step process to develop an

energy forecast for each of its Member systems. First, forecasts of consumers by revenue class are developed using econometric models. Second, forecasts of energy usage per consumer by revenue class are derived using a combination of econometric and end-use methods. Third, sales by revenue class are derived by multiplying the number of consumers times the energy usage per consumer for each revenue class. Fourth, Member energy purchases from Seminole are calculated by summing the revenue class energy forecasts and then multiplying the sums by an adjustment factor (representing losses and billing cycle differences).

Average annual consumers are forecast for the Members' residential and commercial/industrial revenue classes using econometric models. Population is the primary explanatory variable in the models. Forecasts of annual consumers are converted to monthly forecasts using an algorithm derived by Seminole Staff.

Monthly usage per consumer is forecast for the Members' residential and commercial/industrial revenue classes using econometric end-use models. Heating and cooling degree days, space conditioning equipment saturations, the real price of electricity, real per capita income, and total non-farm employment are the primary explanatory variables in the models.

Member energy purchases from Seminole are a two step calculation. First energy sales by revenue class are summed to derive total retail energy sales. Second, total retail energy sales are multiplied by an adjustment factor, which is the historical

average of the ratio of Member energy purchases from Seminole to the Member's total retail energy sales.

Q. Please describe Seminole's process for forecasting peak demands.

A. The Seminole peak demand forecast is derived after the Member monthly peak demands and hourly load forecasts have been created. The Seminole peak demand forecast represents the maximum demand on Seminole in each month after summing the Members' hourly load forecasts. The Seminole Staff follows a four step process to develop a monthly peak demand forecast for each of its Members and the subsequent peak demand forecast for Seminole.

First, monthly load factors are forecast using winter (November – March) and summer (April – October) season econometric models. Cooling and heating degree variables, space conditioning equipment saturations, and weekend variables are the primary explanatory variables. Second, monthly demands are forecast by combining the load factor forecast with the energy purchases from Seminole. Third, hourly demands are created using an algorithm containing the following inputs: normal monthly hourly profiles, maximum and minimum monthly demands, and energy. Fourth, Seminole peak demands are derived by summing the Members' hourly loads and identifying the monthly coincident maximum demands.

Q. Please summarize the key assumptions used in the load forecast.

A. Demographic, economic, end-use, and weather data are the four assumption categories behind Seminole's forecasts. The main demographic and economic data are population, income, non-farm employment, and the price of electricity. County population projections are produced by the Bureau for Business and Economic Research (BEBR) at the University of Florida. County real per capita income and total non-farm employment projections are produced by Moody's Economy.com. Monthly real price of electricity is calculated by Staff from revenue and energy data provided by its Members. End-use information is obtained from Seminole's Residential Consumer Survey. Information on housing characteristics, demographic composition, and appliance saturations has been collected for each Member system since 1980. Weather information is produced by the National Oceanic and Atmospheric Administration. Seminole uses 25 year averages of six weather stations in and around the Members' service areas as representative of normal weather.

Q. Please describe Seminole's current consumer, energy, and seasonal peak demand forecast.

A. Seminole's Members are expected to continue to experience strong growth in the number of consumers, increasing at an AAGR of 2.8 percent over the next ten years and reaching 1,087,362 consumers in 2015. Consumer growth for the following five years (i.e., 2016-2020) is projected to slow down, increasing at an AAGR of 2.0 percent and reaching 1,199,628 consumers in 2020.

As shown on the first page of Exhibit WTL-2, Seminole's energy sales are projected to increase at an AAGR of 4.1 percent over the next ten years, reaching 24,021,037 MWH in energy sales in 2015. Energy sales for the following five years will increase at a slower AAGR of 3.4 percent, reaching 28,390,424 MWH in 2020.

As shown on page 3 of Exhibit WTL-2, Seminole's summer peak demand is forecast to increase at an AAGR of 3.9 percent over the next ten years, reaching 4,802 MW in 2015. The summer peak for the following five years will increase at a slower AAGR of 3.1 percent, reaching 5,603 MW in 2020. As shown on page 2 of Exhibit WTL-2, Seminole's winter peak demand is projected to increase at an AAGR of 4.1 percent over the next ten years, reaching 6,089 MW in 2015. The winter peak demand for the following five years will increase at a slower AAGR of 3.3 percent, reaching 7,173 MW in 2020.

Q. How does Seminole's current load forecast compare to its prior forecast?

A. Seminole's current forecast is relatively consistent with its prior forecast, as depicted in Exhibit WTL-2 (shown as the "2005 LFS" and the "2003 LFS" respectively). The current forecast shows a lower AAGR over the 2006–2020 period. This is a reflection of a consumer forecast with a higher AAGR; offset by a lower AAGR in energy usage per household over this time period. The current forecast is more reliable for planning purposes because it incorporates the most recent population and economic projections, and it has two additional years of history.

Q. Is Seminole's most recent load forecast reasonable for planning purposes?

A. Yes. Seminole's most recent load forecast, which is detailed in Appendix D of the Need Study, is based on generally accepted forecast methodologies and reasonable assumptions and is consistent with historical experience. Seminole, its Members, and the Rural Utilities Service (RUS) have consistently relied on Seminole's forecasts as the basis for power supply planning, rate development, and financial planning.

Q. Does the RUS approve Seminole's load forecasts?

A. Yes. Consistent with RUS rules, Seminole must update its load forecast at least every two years, and each forecast must be approved by the RUS. Each of the two forecasts Seminole used during the planning cycle associated with meeting its need for base load capacity has been approved by the RUS.

Q. Does Seminole offer any DSM or Conservation programs to end-use consumers?

A. No. As a Generation and Transmission cooperative, Seminole provides wholesale power to its Members and does not serve end-use consumers.

Q. Does Seminole promote the use of DSM or conservation in other ways?

A. Yes. Through its rate structure, which has been approved by its Members, Seminole provides its Members price signals that reflect Seminole's cost of supplying power in aggregate. Each Member may use this price signal to evaluate the cost-effectiveness of DSM and conservation measures for its own circumstances. In addition, Seminole's rate structure bases Seminole's billing to its Members on their demand at

the time of Seminole's peak, not the individual peaks of each Member. This encourages Members to concentrate their load management efforts on controlling Seminole's overall system peak rather than their separate peaks. As discussed by Mr. Woodbury, the Commission has previously found that Seminole provides price signals to its Members that are properly designed to provide incentives to lower on-peak demand.

Q. Do any of Seminole's Members have Commission-approved DSM and/or conservation programs?

A. No. Neither Seminole nor its Members have Commission approved DSM goals, programs or plans like investor owned and large municipal utilities.

Q. Do Seminole's Members nonetheless offer DSM programs?

A. Yes. Seminole's Members currently have 237 MW of DSM in the form of load control switches, voltage control, and distributed generation. Load control switches account for 69 MW, voltage control for 71 MW, and load management generation for 97 MW of the total 237 MW of DSM.

Q. Do Seminole's Members also offer conservation programs?

A. Yes. A number of Seminole's Members offer a variety of conservation programs. These conservation programs include: energy audits, energy surveys, consumer awareness, low interest energy loans, lighting conversion, Good Cents Homes, and making available for purchase high efficiency electric water heaters. Seminole

monitors the types of programs offered by the Members, but the design and implementation of DSM and conservation programs are within the management discretion of each Member.

Q. Does Seminole's load forecast reflect the effects of DSM and conservation programs?

A. Yes. Seminole's load forecast methodology captures the historic effect of the Members' residential and commercial DSM and conservation programs. In aggregate our Members are not projecting to increase their DSM capabilities over the forecast period, so reliance on historical effects is appropriate. For conservation however, forecasted energy and demand reflect not only the historic aggregate conservation impacts on Seminole's system, but also incremental conservation at the same rate of adoption.

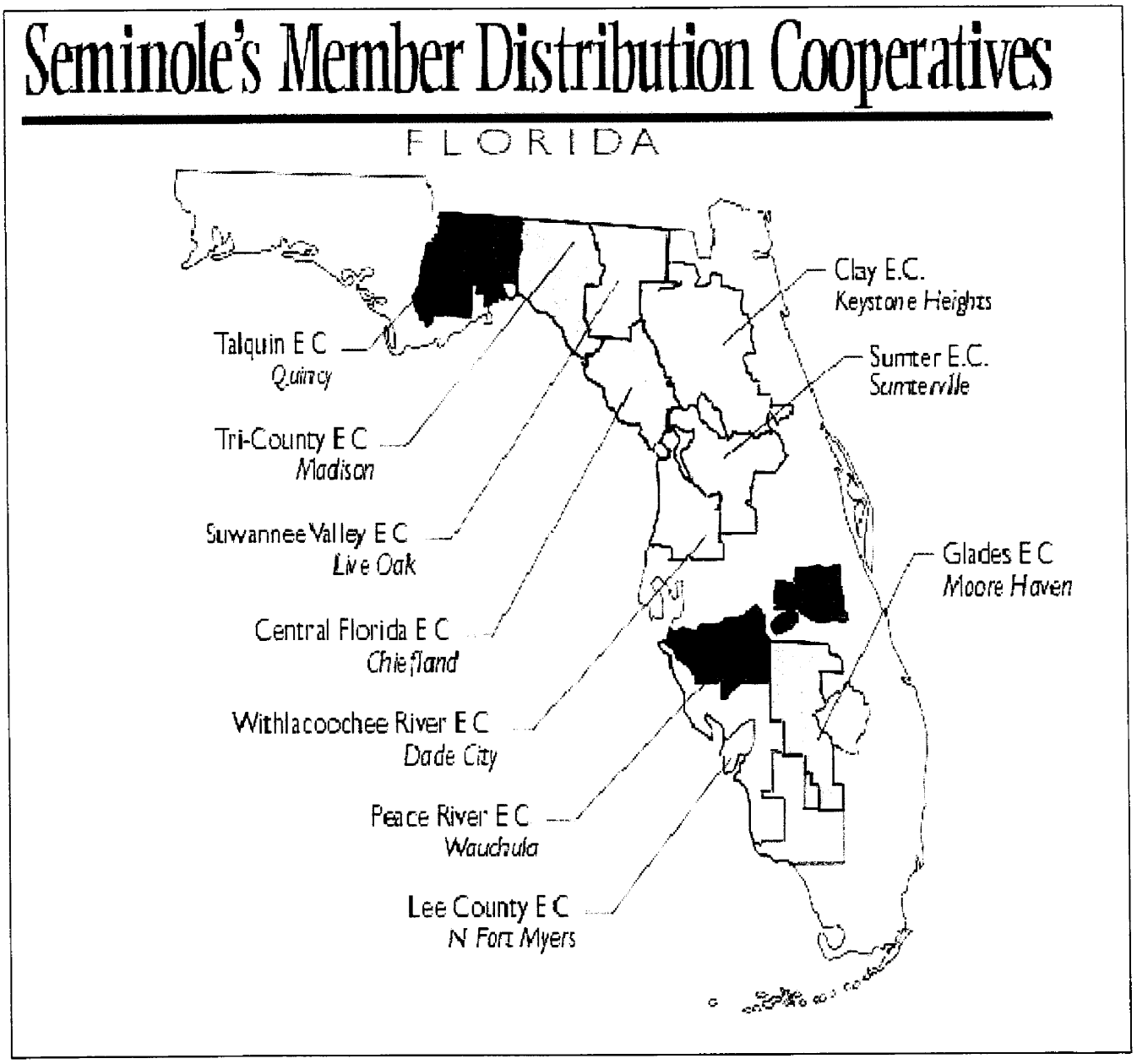
Q. Is there a sufficient amount of reasonably achievable additional DSM and conservation to mitigate the need for SGS Unit 3?

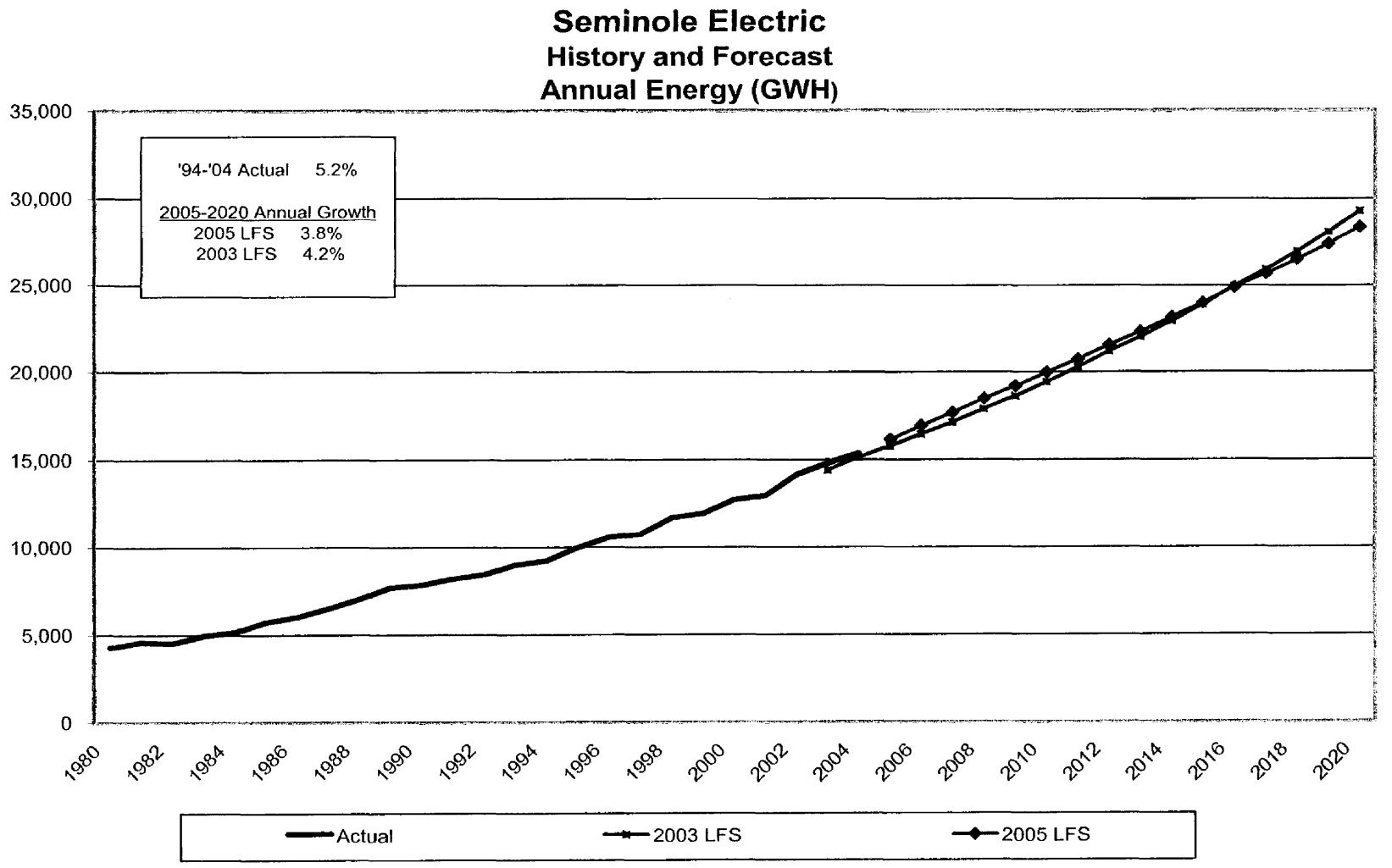
A. No. Due to a combination of load growth and expiring purchase power contracts Seminole's total resource need in 2012 is 1261 MW, which is significantly greater than the SGS Unit 3 750 MW capacity rating. Because the need is so large, because DSM tends to avoid peaking rather than base load capacity, and given the structure of the Seminole system, it does not appear reasonable that enough cost-effective reductions from DSM or conservation programs could be achieved by 2012 to eliminate the need for SGS Unit 3.

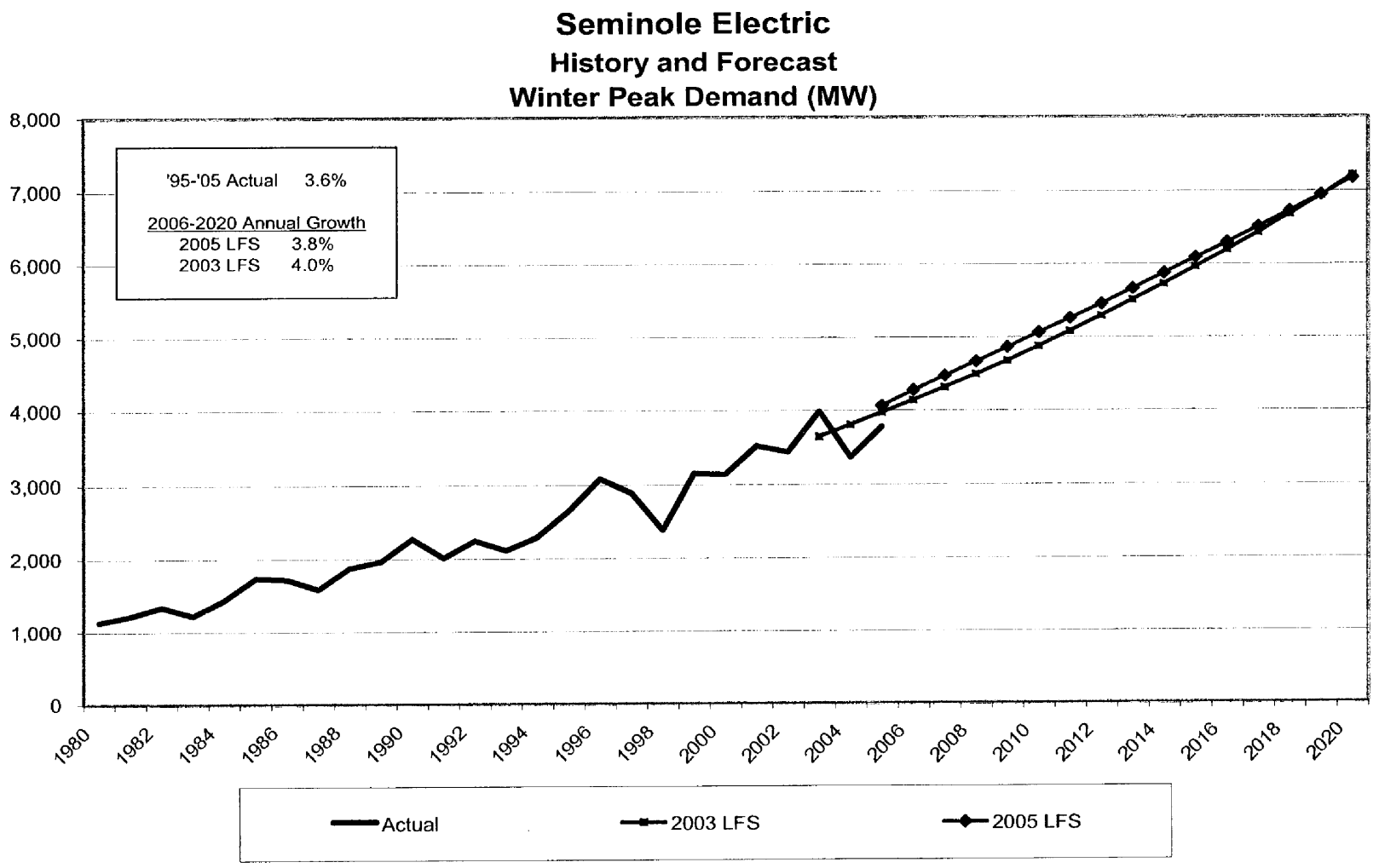
Q. Does this conclude your testimony?

A. Yes.

Seminole's Member Distribution Cooperatives




Seminole Electric
History and Forecast
Annual Energy (GWH)
'94-'04 Actual 5.2%
2005-2020 Annual Growth
2005 LFS 3.8%
2003 LFS 4.2%
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
1980
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008
2010
2012
2014
2016
2018
2020
Actual
2003 LFS
2005 LFS


Seminole Electric
History and Forecast
Winter Peak Demand (MW)
'95-'05 Actual 3.6%
2006-2020 Annual Growth
2005 LFS 3.8%
2003 LFS 4.0%
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
1980
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008
2010
2012
2014
2016
2018
2020
Actual
2003 LFS
2005 LFS

Seminole Electric Cooperative
History and Forecast
Summer Peak Demand (MW)