BEFORE THE
FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 07_____-EI
FLORIDA POWER & LIGHT COMPANY

IN RE: FLORIDA POWER & LIGHT COMPANY'S PETITION TO DETERMINE NEED FOR TURKEY POINT NUCLEAR UNITS 6 AND 7 ELECTRICAL POWER PLANT

DIRECT TESTIMONY & EXHIBITS OF:

GERARD YUPP

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

FLORIDA POWER & LIGHT COMPANY

DIRECT TESTIMONY OF GERARD J. YUPP

DOCKET NO. 07____ EI

OCTOBER 16, 2007

Q. Please state your name and business address.

A. My name is Gerard J. Yupp. My business address is 700 Universe Boulevard, Juno Beach, Florida 33408.

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

A. I am employed by Florida Power & Light Company (FPL or the Company) as Director of Wholesale Operations in the Energy Marketing and Trading Division.

Q. Please describe your duties and responsibilities in that position.

A. I am responsible for managing the daily activities of the Wholesale Operations Group. Daily activities include natural gas and fuel oil procurement and fuel management for FPL's oil and/or natural gas burning plants, coordination of plant outages with wholesale power needs, real-time power trading, short-term power trading, transmission procurement and power scheduling. My longer-term responsibilities include fuel planning and evaluating opportunities within the wholesale power markets based on forward market conditions, FPL's outage schedule, fuel prices and transmission availability.

Q. Please describe your educational background and professional experience.

A. I graduated from Drexel University with a Bachelor of Science Degree in Electrical Engineering in 1989. I joined the Protection and Control Department of FPL in 1989 as a Field Engineer and worked in the area of relay engineering. While employed by FPL, I earned a Master of Business Administration degree from Florida Atlantic University in 1994. In May of 1995, I joined Cytec Industries as a plant electrical engineer where I worked until October of 1996. At that time, I rejoined FPL as a real-time power trader in the Energy Marketing and Trading Division. Since rejoining FPL in 1996, I have moved from real-time trading to short-term power trading, power trading manager and assumed my current position in December, 2004.

Q. Are you sponsoring any exhibits in this case?

A. Yes. I am sponsoring Exhibits GJY-1 through GJY-2, which are attached to my direct testimony.

Exhibit GJY-1	Historical Fuel Prices
Exhibit GJY-2	Nuclear Fuel Savings

Q. Are you sponsoring any sections of the Need Study document?

A. Yes. I am sponsoring Sections V.A.2.a, V.A.2.b, V.A.2.c (parts i through iii) and V.A.2.c (parts v and vi) and I am co-sponsoring Appendix E of the Need Study document.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to present and explain: (1) the benefits of fuel diversity in FPL's system that would result from the addition of up to 3,040 MW

of new nuclear generation; (2) the natural gas pipeline and supply issues that FPL and Florida will face in continuing to rely on increasing amounts of natural gas; (3) the reliability benefits associated with the addition of Turkey Point Nuclear Units 6 & 7 (Turkey Point 6 & 7) as compared to a natural gas-fired plant and the estimated costs of building and operating fuel inventory capability for a natural gas-fired plant that would provide similar reliability benefits offered by Turkey Point 6 & 7; (4) the inherent uncertainty in oil and natural gas price forecasts which necessitates the use of scenario analysis in the long-term economic evaluation of Turkey Point 6 & 7; (5) the methodology used to develop the multiple fuel oil, natural gas and solid fuel price forecasts used by FPL witness Sim in FPL's economic evaluation of its Plan with Nuclear, Plan without Nuclear -- CC that added combined cycle units and Plan without Nuclear -- IGCC that added integrated gasification combined cycle units; (6) the results of those forecasts; and (7) the benefits of reduced reliance on natural gas and fuel oil in FPL's generating fleet.

Q. Please summarize your testimony.

A. Maintaining fuel diversity in FPL's generation portfolio will enhance reliability and reduce fuel price volatility. A fuel-diverse system is more reliable than one that is dependent on only one or two fuel sources. A system that maintains a balanced fuel portfolio is better able to withstand delays or interruptions in the delivery of any one particular fuel, as evidenced by FPL's ability to withstand severe natural gas production curtailments during the 2005 hurricane season. The addition of Turkey Point 6 & 7 will enhance the reliability of the FPL

system compared with a natural gas-fired plant. A fuel-diverse system will help reduce fuel price volatility as the susceptibility to severe price swings in any one fuel type is mitigated in a more balanced fuel portfolio.

FPL developed multiple fuel oil, natural gas and solid fuel price forecasts to address the variability among fuels over time in the economic evaluation of Turkey Point 6 & 7 because projections for future prices of fuel oil, natural gas and solid fuel are inherently uncertain due to a significant number of unpredictable and uncontrollable drivers that influence the short- and long-term price of fuel oil, natural gas and solid fuel. FPL's fuel oil, natural gas and solid fuel price scenarios provide a reasonable set of long-term price outcomes for economic evaluation purposes.

Turkey Point 6 & 7 will reduce FPL's reliance on natural gas and its exposure to fuel cost volatility, as well as facilitating significant fuel cost savings over the years.

BENEFITS OF FUEL DIVERSITY

Q. What are the benefits of maintaining fuel diversity in FPL's system?

A. The primary benefits of maintaining fuel diversity are greater system reliability and reduced fuel price volatility. An electric system that relies on one or two fuels to generate a significant portion of the electricity needed to meet its customers' demand, all else being equal, is less reliable than a system that uses a

more balanced, fuel-diverse generation portfolio. In addition, greater fuel diversity mitigates the impact of sudden swings in the price of any one fuel, a phenomenon that has characterized the fuel oil and natural gas markets over the last several years.

Q. Please explain how fuel diversity enhances system reliability.

A. An electric system that relies to a substantial extent on one fuel is more susceptible to events that cause delays or interruptions in the production and delivery of that fuel. For example, in September 2005 a significant number of natural gas production facilities in the Gulf of Mexico were shut down as a result of Hurricanes Katrina and Rita. FPL was forced to manage its system fuel requirements with much lower than normal natural gas volumes throughout these extreme weather events. Although these supply disruptions presented many challenges to FPL in the area of fuel management, FPL continued to produce sufficient energy to meet its customers' demand for electricity. In part, this was attributable to the diversity of FPL's fuel mix (in 2005: 42% natural gas, 17% fuel oil, 19% nuclear, 18% coal, and 4% from other sources). Because FPL's system offers a significant amount of flexibility through a diverse fuel mix and substantial storage capability, FPL was able to continue to meet its customers' demand for electricity with alternate fuel sources until natural gas production was restored. Had FPL's system relied to a greater extent on natural gas to produce electricity, there would have been a greater risk of failing to meet customers' requirements.

Q. Please explain how fuel diversity helps reduce price volatility.

A. Fuel diversity helps to mitigate the impact of price increases in one or two fuels on the total system cost of fuel. As shown on Exhibit GJY-1, natural gas and fuel oil have experienced extreme price increases over the past several years, while nuclear fuel costs have remained stable. To the extent that multiple fuels are used to produce electricity, the impact of price increases in any one fuel is lessened when that particular fuel does not make up a significant percentage of the total fuel mix. Stated another way, a more balanced fuel portfolio will result in less volatile total fuel costs over time. Additionally, a more balanced fuel portfolio will help mitigate some of the price exposure created by extreme weather events. For example, throughout the duration of each severe weather event in September 2005, natural gas prices rose dramatically and FPL incurred approximately $88 million in incremental cost to replace a portion of the firm natural gas supply that was curtailed as a result of each weather event. Had FPL's reliance on natural gas been greater during that time, its exposure to this extreme price movement throughout each event would have been greater, resulting in even higher replacement fuel costs. Although it is impossible to predict future fuel prices with certainty, based on current fuel price forecasts, the exclusive addition of natural gas-fueled generation in the future would likely result in more volatile and higher fuel costs over time.

NATURAL GAS PIPELINE AND SUPPLY ISSUES

Q. Does FPL believe that future additions of natural gas-fired generation will require changes to the current natural gas infrastructure serving Florida?

A. Yes. Natural gas is currently delivered into Florida from the U.S. Gulf Coast on-shore and off-shore regions via the Florida Gas Transmission (FGT) and Gulfstream Natural Gas System (Gulfstream) pipelines and from the regasification of imported liquefied natural gas (LNG) at the Elba Island, Georgia terminal via the Cypress pipeline. On May 1, 2007, Phase I of the Cypress pipeline was placed into service and began providing an incremental 220,000 MMBTU per day of natural gas into Florida. Phase I of the Cypress pipeline operates near or at capacity today, and future Phase II and Phase III expansions should be available by 2008 and 2010. While the FGT and Gulfstream infrastructure has provided a high level of reliability over the years, the demands on both pipelines have continued to grow. FGT is currently fully subscribed and by mid-2009 Gulfstream will be fully subscribed. Even with the planned Phase II and Phase III expansions of the Cypress pipeline, the addition of incremental natural gas-fired generation will likely require an expansion of the gas transportation infrastructure in the State.

However, as described above, natural gas production curtailments from the 2005 hurricanes limited the amount of natural gas available to Florida from the Gulf of Mexico for a period of time. Simply expanding the existing infrastructure will

not help reduce this vulnerability. Therefore, the need to consider alternatives to promote the diversity of supply will become critical to maintaining system reliability.

Q. What are the alternatives to expanding the existing pipeline system?

A. Alternatives could include the addition of a new interstate pipeline, additional underground natural gas storage, on-site LNG storage facilities, and the development of alternate supply sources, including access to new producing regions as well as the addition of LNG supply. LNG imports are projected to increase to meet U.S. natural gas demand growth from approximately 1.6 billion cubic feet (BCF) per day in 2006 to approximately 14.3 BCF per day by 2020. By 2020, LNG supply is projected to account for approximately 20% of total U.S. natural gas supply. Although LNG supply is projected to play an essential role in helping meet U.S. natural gas demand growth, it is important to note that as LNG's percentage of total U.S. natural gas supply increases, the risks associated with foreign supply fuel sources will become more prevalent in the overall U.S. natural gas picture.

FPL has recognized the need to implement alternative strategies even in today's environment. In an effort to create supply diversity and help strengthen reliability, FPL recently contracted for additional natural gas storage and firm transportation on a new pipeline that will bring on-shore natural gas supply from East Texas into the Mobile Bay area in the Gulf of Mexico. While both of these projects will help strengthen reliability by helping to mitigate FPL's exposure to

supply disruptions, the new pipeline will also provide long-term supply diversity. The cost of implementing mitigating strategies will vary depending on the type of alternative being considered. However, it is important to recognize that this investment in infrastructure and supply alternatives will have to be made in order to maintain today's level of natural gas reliability in the future as demand for natural gas grows. It is reasonable to expect that the gas transportation charges that FPL and other users have to pay will reflect this substantial increase in investment.

BENEFITS OF IN-REACTOR NUCLEAR FUEL INVENTORY

Q. Does the addition of Turkey Point 6 & 7 enhance the reliability of the FPL system from a fuel supply perspective, compared to a natural gas-fired plant?

A. Yes. Nuclear generation offers several fuel supply characteristics that enhance system reliability compared to a natural gas-fired plant. FPL generally maintains three days of on-site back-up fuel oil storage at its natural gas fired plants. Therefore, a natural gas-fired plant is more susceptible to interruptions from fuel supply problems such as supply or pipeline curtailments. In contrast, as Mr. Villard explains, a nuclear unit has the ability to produce power for an 18-month period without the need for additional fuel supply and is not exposed to the risk of fuel supply interruptions within that period. Additionally, Mr. Villard explains that nuclear units can continue power production beyond the scheduled

end of a refueling cycle by slightly reducing power output over time. This flexibility could prove very useful in mitigating the impact of supply disruptions for other fuel types. For example, if natural gas supply were interrupted when a nuclear unit was planning to shut down for refueling, the nuclear unit could stay on-line and continue producing power to help meet customer demand until the natural gas supply was restored. Beyond the system reliability benefits, these operating characteristics of nuclear units also help reduce fuel price volatility. To the extent that a particular fuel type is not exposed to price swings caused by short-term supply disruptions, there will be a reduction in the volatility of total fuel costs throughout each event. Substantial, expensive on-site storage would have to be added at a natural gas-fired plant for it even to approach the system-reliability and price-volatility reduction benefits inherent in a nuclear plant's in-reactor fuel inventory.

UNCERTAINTIES IN FOSSIL-FUEL FORECASTING

Q. Please identify the key factors that contribute to uncertainty in forecasting the future price of fossil fuels.

A. Future fuel oil and natural gas prices, and to a much lesser extent, coal and petroleum coke prices, are inherently uncertain due to a significant number of unpredictable and uncontrollable drivers that influence the short- and long-term price of fuel oil, natural gas, coal, and petroleum coke. These drivers include: (1) current and projected worldwide demand for crude oil and petroleum products; (2) current and projected worldwide refinery capacity/production; (3)

expected worldwide economic growth, in particular in China and the other Pacific Rim countries; (4) Organization of Petroleum Exporting Countries (OPEC) production and the availability of spare OPEC production capacity and the assumed growth in spare OPEC production capacity; (5) non-OPEC production and expected growth in non-OPEC production; (6) the geopolitics of the Middle East, West Africa, the former Soviet Union, Venezuela, etc.; (7) the impact upon worldwide energy consumption of various factors including worldwide environmental legislation and politics; (8) current and projected North American natural gas demand; (9) current and projected U. S., Canadian, and Mexican natural gas production; (10) the worldwide supply and demand of LNG; and (11) the growth in solid fuel generation on a U.S. and worldwide basis.

Q. Why has FPL developed multiple fuel oil, natural gas and solid fuel price forecasts to support the economic evaluation of Turkey Point 6 & 7 and the alternative plans?

A. In the economic evaluation of Turkey Point 6 & 7, the differential between fuel prices is a key driver in the overall economic outcome of each expansion plan. Therefore, variations in fuel price forecasts will impact the potential fuel savings. The volatility of natural gas and fuel oil prices, as compared with solid fuel and nuclear fuel prices, clearly underscored the need to develop a set of plausible fuel oil, natural gas and solid fuel price scenarios that bound the reasonable set of long-term price outcomes for economic evaluation purposes.

Accordingly, to support the economic evaluation of Turkey Point 6 & 7 and the alternative expansion plans, FPL developed several fuel price forecasts. These forecasts are referred to as the Medium Gas Cost, Low Gas Cost and High Gas Cost forecasts, all of which are described in detail below.

FUEL FORECAST METHODOLOGY

Q. What is the methodology for FPL's Medium Gas Cost forecast for fuel oil, natural gas and solid fuel used to support the economic evaluation of Turkey Point 6 & 7 and the alternative plans?

A. FPL's Medium Gas Cost forecast methodology is consistent for fuel oil and natural gas. For fuel oil and natural gas commodity prices, FPL's Medium Gas Cost forecast applies the following methodology: (1) for 2007 through 2009, the methodology used the July 31, 2007 forward curve for New York Harbor 1% sulfur heavy oil, U. S. Gulf Coast 1% sulfur heavy oil and Henry Hub natural gas commodity prices; (2) for the next two years (2010 and 2011), FPL used a 50/50 blend of the July 31, 2007 forward curve and monthly projections from the PIRA Energy Group; (3) for the 2012 through 2020 period, FPL used the annual projections from the PIRA Energy Group; and (4) for the period beyond 2020, FPL used the rate of real (constant dollar) price changes from the Energy Information Administration (EIA). All constant dollar changes were then converted to nominal dollars using a 2.5% annual escalation rate. In addition to the development of commodity prices, price forecasts also were prepared for fuel

oil and natural gas transportation costs. The addition of commodity and transportation projections resulted in delivered price forecasts.

FPL has used a consistent approach in developing the Medium Gas Cost forecast methodology for coal and petroleum coke prices. Coal and petroleum coke prices were based upon the following approach: (1) the price forecasts for Central Appalachian coal, South American coal, and petroleum coke were provided by JD Energy; (2) the marine transportation rates from the loading port for coal and petroleum coke to an import terminal were also provided by JD Energy; (3) the terminal throughput fee was based on a range of offers from comparable facilities throughout the Southeast U.S.; and (4) the rail transportation rates from Central Appalachia and from the import terminal facility were based on the proposed rail transportation rates as of the second quarter of 2007. In order to achieve the maximum fuel supply diversity and delivery flexibility for FPL's customers, FPL assumed that the delivered price of solid fuel for IGCC units in FPL's Plan without Nuclear -- IGCC would be a mix of 25% Central Appalachian coal, 25% South American coal, and 50% petroleum coke.

These delivered price forecasts for fuel oil, natural gas and solid fuel were used in the economic evaluation of Turkey Point 6 & 7 and the alternative expansion plans.

Q. What is the methodology for the development of the alternative fuel oil, natural gas and solid fuel price forecasts used in the economic evaluation of Turkey Point 6 & 7 and the alternative plans?

A. The development of FPL's Low and High Gas Cost forecasts for fuel oil, natural gas, coal, and petroleum coke prices was based upon the historical relationship of the high and low prices realized by FPL's customers for each fuel between January 2000 and April 2007, to the average fuel prices in that same time frame. For example, the January 2000 through April 2007 average natural gas price delivered to FPL's system was $6.65/MMBtu. The high price range was $9.09/MMBtu or 137% of the average and the low price range was $4.57/MMBtu or 69% of the average. These factors were multiplied by the monthly Medium Gas Cost forecast to determine the Low and High price for each commodity for the duration of the forecast period. This same process was applied to fuel oil, coal and petroleum coke consistently. FPL developed these forecasts to account for the uncertainty that exists within each commodity as well as across commodities. These forecasts align with FPL's actual price variability realized during the January 2000 to April 2007 period, thus ensuring that the analyses of the three Resource Plans will reflect a range of reasonable forecast outcomes.

FORECAST RESULTS

Q. Are FPL's Medium, Low, and High Gas Cost forecasts reasonable and appropriate for the economic evaluation of Turkey Point 6 & 7 and the alternative plans?

A. Yes. FPL's long-term oil, natural gas and solid fuel price forecasts are reasonable and appropriate for the economic evaluation of Turkey Point 6 & 7 and the alternative plans. FPL's fuel price forecasts identify a reasonable set of forecast outcomes based on an actual historical range of prices realized by FPL's customers during the January 2000 through April 2007 period, a period of time that experienced high variability among commodity prices, high price volatility on a domestic and worldwide basis, and periods of both low and high price differentials between commodities.

Q. Have you provided FPL's forecasts for the price of fuel oil, natural gas and solid fuel?

A. Yes. FPL's forecasts for the price of fuel oil, natural gas and solid fuel are provided in Appendix E of the Need Study document.

Q. Will future environmental regulations impact the price differential between natural gas and other fuel types?

A. It is difficult to quantify how future environmental regulations will impact the price differential between natural gas and other fuel types, as there are many variables to consider. Nonetheless, it is reasonable and intuitive to expect that, if future environmental regulations were to impose high compliance costs on

carbon emissions, the demand for natural gas would most likely increase as natural gas-fueled generation became preferable from an economic standpoint. In theory, that increase in demand would widen the price differential between natural gas and other fuel types. Although there may be other, countervailing factors, we would not expect those factors to fully offset this widening of the price differential as environmental compliance costs increase.

REDUCED RELIANCE ON NATURAL GAS AND FUEL OIL

Q. Will Turkey Point 6 & 7 reduce FPL's reliance on natural gas for electric generation?

A. Yes. Turkey Point 6 & 7 will greatly reduce FPL's reliance on natural gas. The operation of Turkey Point 6 & 7 will displace approximately 114 BCF of natural gas consumption per year. Stated another way, during its first 19 years of operation, Turkey Point 6 & 7 will displace and prevent the need for the consumption of as much natural gas as FPL's system consumed in the 7-year period from 2000 through 2006

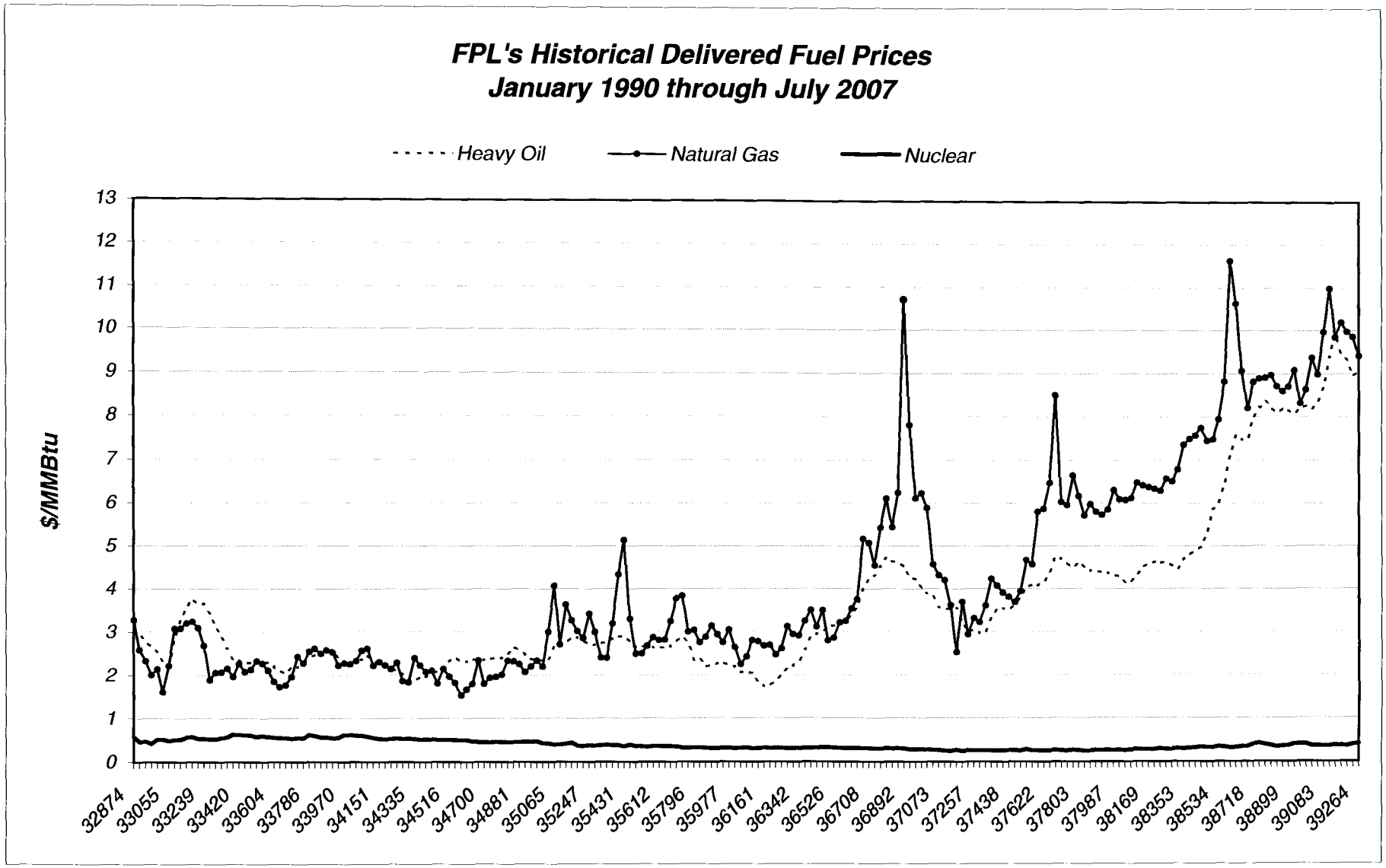
Q. Has the operation of FPL's existing nuclear fleet helped mitigate some of the impact of extremely volatile natural gas and fuel oil prices over the last several years?

A. Yes. As shown in Exhibit GJY-1, beginning in 2000, natural gas and heavy oil prices began an overall upward trend with extreme price fluctuations at particular points in time. Conversely, FPL's nuclear fuel prices remained stable

and low throughout the same period. Exhibit GJY-2 quantifies the economic benefit that FPL's existing nuclear generation fleet has had on FPL's total fuel costs during this period and demonstrates the benefits of fuel diversity from a reduction in the volatility of overall fuel costs. Exhibit GJY-2 is comprised of three components: FPL's actual nuclear fuel costs (by year), equivalent natural gas/heavy oil fuel costs (by year) and cumulative net fuel savings due to FPL's nuclear generation over the period January 2000 through July 2007. The equivalent natural gas/heavy oil fuel costs represents additional fuel costs FPL would have incurred to produce the same net MWh that FPL's nuclear generation fleet produced over this period of time with natural gas and heavy oil. These equivalent fuel costs were calculated using actual system average heat rates for natural gas and heavy fuel oil, actual delivered natural gas and heavy oil prices, and the actual fuel mix of natural gas and heavy oil. As shown on Exhibit GJY-2, FPL's total fuel costs would have been approximately $8.7 billion higher during this period if nuclear generation was not part of FPL's generation portfolio. Additionally, FPL's total system fuel costs experienced less volatility as a result of a portion of these total system fuel costs coming from stable, low-cost nuclear generation.

Q. Does this conclude your direct testimony?

A. Yes.



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Historical Fuel Prices
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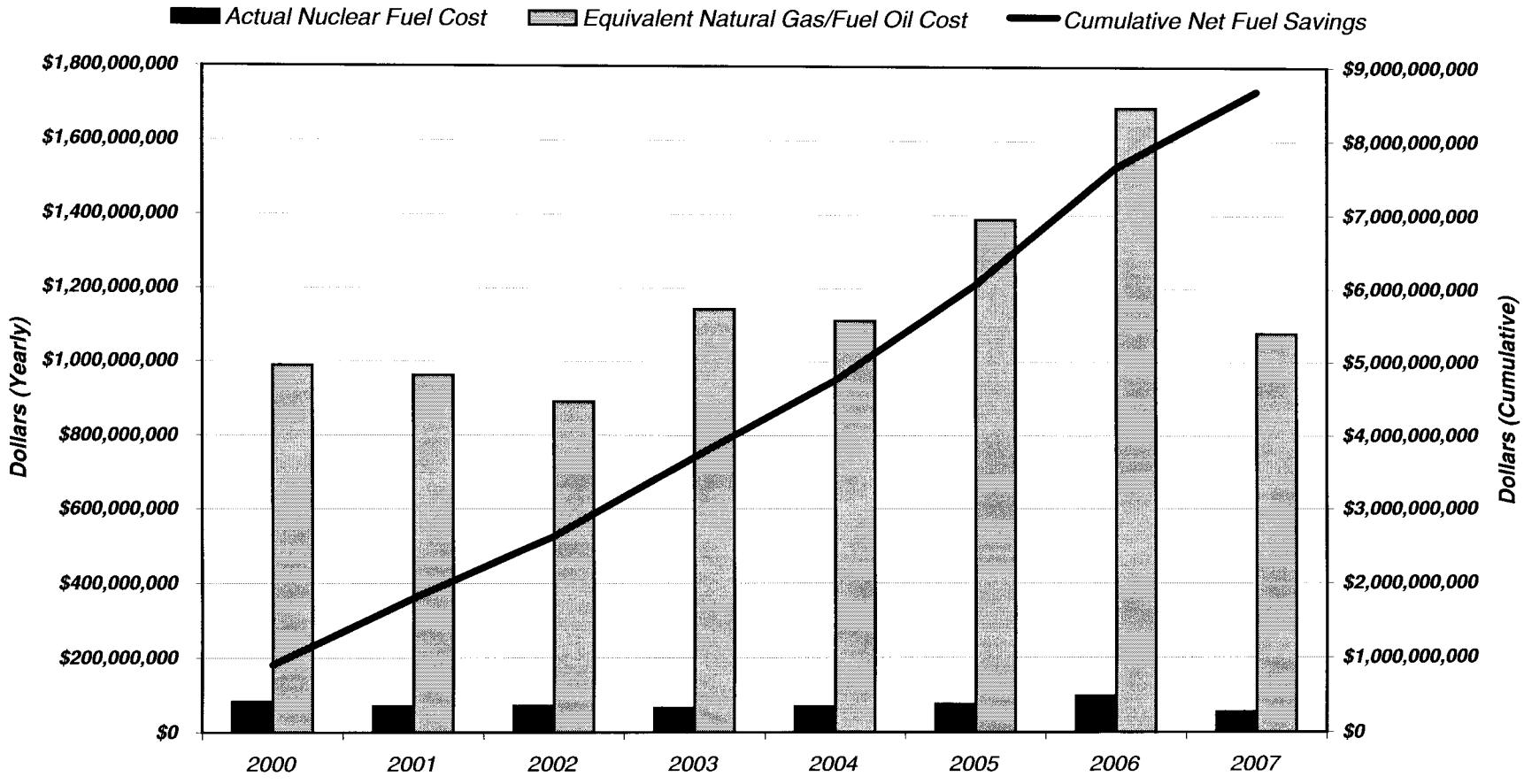
Actual Nuclear Fuel Cost vs. Natural Gas/Fuel Oil Cost Equivalent
January 2000 through July 2007



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