BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 080677-EI
FLORIDA POWER & LIGHT COMPANY

IN RE: PETITION FOR RATE INCREASE BY FLORIDA POWER & LIGHT COMPANY

TESTIMONY & EXHIBITS OF:

J. A. STALL

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

FLORIDA POWER & LIGHT COMPANY

DIRECT TESTIMONY OF J.A. STALL

DOCKET NO. 080677-EI

Q. Please state your name and business address.

A. My name is J.A. (Art) Stall. My business address is Florida Power & Light Company (FPL), 700 Universe Boulevard, Juno Beach, Florida, 33408-0420.

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

A. I am employed by FPL Group, Inc. as President, FPL Group Nuclear.

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

A. I am responsible for the overall strategic direction for all of FPL's nuclear assets, consisting of four nuclear units in Florida – two at Turkey Point Nuclear Plant near Florida City, Florida, (1,386 MW) and two at St. Lucie Nuclear Plant, near Jensen Beach, Florida (1,677 MW). I also hold this same responsibility for the nuclear plants owned by FPL's affiliates – one unit at Seabrook Station in Seabrook, New Hampshire (1,294 MW), one unit at Duane Arnold Energy Center in Palo, Iowa (600 MW), and two units at Point Beach Nuclear Plant in Two Rivers, Wisconsin (1,036 MW).

Q. Please describe your educational background and overview of your experience in nuclear operations.

A. I earned my Bachelor of Science degree in nuclear engineering from the University of Florida in 1977. I also earned a Master's degree in Business

Administration from Virginia Commonwealth University in 1983. I am a career nuclear professional with approximately 30 years of nuclear operating experience. I joined Virginia Power Company in 1977, where I held various positions of increasing responsibility, including superintendent of operations, assistant station manager for safety and licensing, and superintendent of technical services. I also held a senior nuclear reactor operator license from the U.S. Nuclear Regulatory Commission (NRC) while working at Virginia Power Company's nuclear plants. In 1996, I joined FPL as the Site Vice President at the St. Lucie Nuclear Plant. From 2000 to 2001, I was Vice President for Nuclear Engineering at FPL. I was named Senior Vice President, Nuclear Operations, and Chief Nuclear Officer at FPL in June 2001, and in 2008 I was named Executive Vice President, Nuclear Operations, and Chief Nuclear Officer. In these positions, I was responsible for the day-to-day operations of all of FPL and NextEra Energy Resources (formerly known as FPL Energy) nuclear plants. In January 2009, I was named President, FPL Group Nuclear.

Q. Are you sponsoring any exhibits in this case?

A. Yes, I am sponsoring the following Exhibits:

- JAS-1 – FPL Nuclear Personnel Safety
- JAS-2 – INPO Index
- JAS-3 -NRC Performance Indicators for St. Lucie and Turkey Point
- JAS-4 –NRC Inspection Findings for St. Lucie and Turkey Point for 2008

- JAS-5 –NRC Regulatory Status for St. Lucie and Turkey Point
- JAS-6 – Capacity Factors for FPL Nuclear
- JAS-7 – Equivalent Availability Factor for FPL Nuclear
- JAS-8 –Annual Capital Expenditures for St. Lucie and Turkey Point
- JAS-9 –Cumulative Capital Investment 2006-2011
- JAS-10 – Annual Operations & Maintenance (O&M) Expenditures for St. Lucie and Turkey Point

Q. Are you sponsoring or co-sponsoring any Minimum Filing Requirements (MFRs) in this case?

A. Yes, I am sponsoring the following MFR:

- F-4, NRC Safety Citations

I am co-sponsoring the following MFRs:

- B-12, Production Plant Additions (Subsequent Year)
- B-13, Construction Work in Progress
- B-16, Nuclear Fuel Balances
- B-24, Leasing Arrangements
- C-8, Detail of Changes in Expenses
- C-15, Industry Association Dues (Test Year, Subsequent Year)
- C-16, Outside Professional Services
- C-41, O&M Benchmark Variance By Function
- C-43, Security Costs

I am also sponsoring or co-sponsoring the following 2009 supplemental MFR schedules that FPL has agreed with the Commission Staff and the Office of Public Counsel to file:

- F-4, NRC Safety Citations
- B-13, Construction Work in Progress
- C-15, Industry Association Dues
- C-41, O&M Benchmark Variance By Function

Q. What is the purpose of your testimony in this proceeding?

A. The purpose of my testimony is to (1) describe how FPL's nuclear fleet performance has yielded significant benefits to FPL customers; (2) describe challenges facing FPL's nuclear operations, including new and evolving NRC requirements; (3) describe additional steps FPL is taking or plans to take to address these challenges and to improve efficiencies; (4) discuss FPL's accomplishments on items discussed in my testimony filed in FPL's 2005 Rate Case; and (5) discuss the resulting impact of topics (1) through (4) on the 2010 Test Year and 2011 Subsequent Year costs for FPL's nuclear operations.

Q. Please summarize your testimony.

A. FPL's nuclear power plants are a source of reliable, safe, and cost effective energy for FPL's customers. These plants are a key component of FPL's energy mix that benefits FPL's customers in terms of fuel savings, enhanced system fuel diversity, and reductions of greenhouse gas (GHG) emissions, all of which are very important considerations in light of the current difficult economic situation. In order to continue the reliable, safe, and cost effective operation of FPL's nuclear power plants, to meet the significant operational and regulatory challenges and evolving NRC requirements facing these plants, and to position our plants for operation into their renewed license terms, FPL is required to increase its capital and O&M spending to implement required equipment upgrades, and recruit and retain a qualified workforce.

BACKGROUND ON FPL'S NUCLEAR ENERGY OPERATIONS

Q. Please describe FPL's nuclear plants.

A. FPL's long and successful involvement with nuclear power started in the mid-1960s with the first order for nuclear generation in the South. FPL's plans to build nuclear units at the Turkey Point Plant were announced in 1965, and the first nuclear unit achieved commercial operation in 1972. FPL is currently licensed by the NRC to operate the St. Lucie Nuclear Plant, Units 1 and 2, and the Turkey Point Nuclear Plant, Units 3 and 4. Turkey Point Units 3 and 4 are pressurized water reactors designed by Westinghouse. Unit 3 commenced commercial operation in 1972, and Unit 4 did so in 1973. St. Lucie Units 1 and 2 are pressurized water reactors designed by Combustion Engineering (now owned by Westinghouse). Unit 1 went into commercial operation in 1976, and Unit 2 did so in 1983.

Q. Describe the ownership structure for FPL's nuclear units.

A. FPL owns 100 percent of Turkey Point Units 3 and 4 and St. Lucie Unit 1. FPL owns 85.10449 percent of St. Lucie Unit 2. The balance of St. Lucie

Unit 2 is owned by the Florida Municipal Power Agency, which owns 8.806 percent, and the Orlando Utilities Commission, which owns 6.08951 percent.

Q. **How long are FPL's nuclear units currently licensed to operate?**

A. In June 2002, FPL received renewed operating licenses from the NRC for Turkey Point Units 3 and 4, and in October 2003, FPL received renewed operating licenses from the NRC for St. Lucie Units 1 and 2. The renewed licenses give FPL the authority to operate each unit for twenty years past the original license expiration date should FPL choose to do so. Accordingly, the current license expiration dates are for Turkey Point Unit 3, 2032; for Turkey Point Unit 4, 2033; for St. Lucie Unit 1, 2036; and for St. Lucie Unit 2, 2043.

Q. **Has FPL decided yet whether to operate its nuclear plants for the full period of extended operation as authorized by the renewed NRC operating licenses?**

A. No. FPL will periodically review the prudence of the continued operation of these plants, in light of changing regulatory requirements and the overall economics of continued operation. I should add, however, that I fully expect FPL to operate Turkey Point and St. Lucie well into their renewed license periods and the company is making necessary investments to preserve this option.

Q. **Is FPL pursuing power uprates to its nuclear plants?**

A. Yes. FPL is pursuing power capacity uprates for Turkey Point and St. Lucie. The power uprates at Turkey Point and St. Lucie will be implemented in 2011 and 2012. At Turkey Point, each unit is expected to increase gross power by about 14 percent. The net increase will be about 104 MW per unit for a two-unit total of about 208 MW. At St. Lucie, each unit is expected to increase gross power by about 11 percent. The net increase will be 103 MW per unit for a two-unit total of 206 MW.

This project is the best choice for addressing FPL's future capacity needs starting in 2012 and 2013. Since the electric power needs of Florida will continue to grow, uprating an existing nuclear plant, which will involve no new plant construction and can be accomplished within the existing nuclear plant footprints, is a reliable and an environmentally attractive way to generate additional electricity. The need for these projects was previously determined by the Florida Public Service Commission (Commission). FPL is authorized to recover certain costs through the Nuclear Cost Recovery Clause.

In an era of increasing uncertainty, FPL's focus is on creating and preserving a high level of resource options for its system. The addition of the nuclear capacity uprates will immediately benefit FPL's customers in terms of fuel savings and enhanced system fuel diversity, as well as result in deferral of new capacity additions.

Importantly, the Turkey Point and St. Lucie uprates will reduce FPL's system GHG emissions consistent with the policy directives of Governor Crist. Given FPL's current fuel mix, the addition of non-fossil fuel, non-greenhouse gas emitting sources for generation is necessary to maintain system reliability, increase fuel diversity and allow progress toward meaningful GHG reductions.

Q. Is FPL considering new nuclear capacity?

A. Yes. FPL is pursuing the necessary licenses and approvals to allow construction of two advanced-design nuclear plants at Turkey Point that would add 2,200 megawatts. If built, the units are expected to go into service in the years 2018 and 2020. The Commission's approval of the need for these units in April 2008, and subsequent approval of nuclear cost recovery for the project in November 2008, represent important steps in a process that will take 10 years or more. The nuclear cost recovery process sets forth a deliberate and transparent review process, by which FPL and the FPSC annually review the feasibility of the Turkey Point 6 and 7 project. The licensing and approvals process involves comprehensive reviews with government agencies and wide-ranging discussions and consultations with local residents and governments, including licensing review and project oversight by the NRC. Under the Florida Power Plant Siting Act, the Governor and Cabinet must also approve the project.

FPL'S NUCLEAR PLANT PERFORMANCE

Q. What metrics are used by FPL to measure the performance of FPL's nuclear plants?

A. FPL uses the following metrics to measure the performance of our nuclear plants: personnel safety, nuclear safety, reliability, regulatory performance as measured by the NRC, and overall plant performance as measured by an objective numerical index maintained by the Institute for Nuclear Power Operations (INPO). INPO is an organization that promotes the highest levels of safety and reliability by promoting excellence in the operation of nuclear electric generating plants. FPL is a member of INPO.

Q. Please describe the personnel safety performance of the Nuclear Business Unit.

A. FPL has an excellent personnel safety record. FPL measures its personnel safety performance using a standard from the Occupational Safety and Health Administration (OSHA) of the U.S. Department of Labor known as an OSHA recordable injury. Exhibit JAS-1 shows FPL's substantial improvement in the area of personnel safety over the last 14 years. In 1994, FPL had 68 recordable injuries in its nuclear operations. In contrast, there were less than 10 recordable injuries for each year in the 2001-2008 period. FPL is committed to conducting its nuclear operations in a safe and responsible manner that avoids injuries and promotes the physical safety and well being of its employees. This performance was recognized in 2007 when FPL received the Southeastern Electric Exchange award for the best nuclear industrial safety performance in the Southeast.

Q. Please describe the nuclear safety and reliability performance of FPL's nuclear power plants.

A. FPL's nuclear plant performance reflects a strong and improving nuclear safety and reliability record. FPL measures its nuclear plant performance using the INPO index (Exhibit JAS-2). The INPO index is a metric of nuclear plant safety and reliability widely used in the U.S. nuclear power industry. The INPO index is calculated by summing weighted values of the following key indicators:

1. Unit Capability Factor (15 percent)
2. Forced Loss Rate (15 percent)
3. Unavailability of High Pressure Safety Injection System (10 percent)
4. Unavailability of Auxiliary Feedwater System (10 percent)
5. Unavailability of Emergency AC Power System (Site Average) (10 percent)
6. Unplanned Automatic Reactor Trips (10 percent)
7. Collective Radiation Exposure (10 percent)
8. Nuclear Fuel Reliability/Fuel Rod Defects (10 percent)
9. Quality of Secondary Water Chemistry (five percent)
10. Industrial Safety (five percent)

Prior to 2004, FPL's performance as measured by the INPO index was in the top half of the industry. However, FPL's performance has been affected since that time by the need to make major component replacements associated with several key industry events. Industry events impacting INPO indices on U.S. pressurized water reactors during this time period were the discovery of degradation in reactor vessel head penetrations at multiple plants, most notably the findings at the Davis-Besse nuclear plant in 2002; continuing deterioration in alloy 600 steam generator tubes at a number of pressurized water reactor plants, including a tube rupture at the Indian Point plant; and pressurizer heater weld degradation at a number of plants.

To address these issues, FPL has completed the following major component replacements based on these industry events: replacement of reactor pressure vessel heads on each of its four units; replacement of the pressurizer at St. Lucie Unit 1; and replacement of the St. Lucie Unit 2 steam generators. The efforts by FPL to ensure major component integrity required extended outage durations for these component replacements which affected some of the INPO indicators. However, FPL was an early mover at addressing these industry issues. FPL's actions will ensure integrity of these major components for extended life operations for St. Lucie and Turkey Point, thereby saving customers significant expenditures for these replacements, and positioning its nuclear plants for safer, more reliable long term performance, as discussed in further detail in my testimony. These investments have already showed performance improvements that are reflected in the INPO index measurement in three consecutive years (2006-2008), and I expect this improvement to continue.

Q. How does the NRC rate FPL's nuclear safety record?

A. The nuclear safety aspects of FPL's nuclear operations are comprehensively regulated by the NRC. The NRC maintains and tracks a set of performance indicators as objective measures of nuclear safety performance. These indicators monitor performance in initiating events, performance of safety systems, maintenance of fission product barrier integrity, emergency preparedness, occupational and public radiation safety, and physical protection (security). As shown in Exhibit JAS-3, all four of FPL's nuclear units are in the "green" band of all NRC Performance Indicators, indicating good nuclear safety performance in 2008. As shown in Exhibit JAS-4, all of the NRC inspection findings for 2008 were also in the "green" band, illustrating no findings with any nuclear safety significance. Since the NRC performance indicator program was introduced in the fourth quarter of 2000, all of the performance indicators for FPL's nuclear plants have been in the "green" band with one exception for one quarter.

Q. How do FPL's nuclear plants compare to the remainder of the industry in terms of the NRC performance system?

A. From the NRC's perspective, FPL's plants compare favorably with the remainder of the industry. Based on the NRC's Performance Indicators and inspection activities, the NRC determines the appropriate level of agency response, including the need for supplemental inspections, regulatory actions, and senior management meetings. Nuclear plants in the "green" band receive only baseline NRC inspections. Approximately 17 percent of the nuclear plants in the United States are characterized by the NRC as having a level of plant performance requiring increased NRC regulatory involvement for those plants: the "regulatory response" category (14 plants having at least one regulatory finding of low to moderate safety significance in the past 12 months); the "degraded cornerstone" category (three plants), and the "multiple/repetitive degraded cornerstone" category (one plant having a regulatory finding of low to moderate safety significance, a regulatory finding of substantial safety significance, or a finding of high safety significance, usually coupled with inadequate corrective actions). As illustrated by Exhibit JAS-5, none of FPL's units falls into these categories. The NRC conducts additional inspections of plants with performance indicators showing degraded performance (white, yellow, or red). This regulatory structure places a premium on FPL's ability to identify and correct problems. Degraded performance can result in increased NRC regulatory activity, which in turn would require management attention to these NRC inspections and increase O&M costs accordingly. FPL's 2008 regulatory performance has ensured only baseline inspections at FPL's nuclear units.

Q. Please describe FPL's nuclear generation performance and compare this performance to the rest of the nuclear industry.

A. As shown in Exhibits JAS-6 and JAS-7, FPL's nuclear plants have continued to improve their generation performance as measured by capacity factors (including the planned extended refueling outages for major component replacements and other equipment related issues) and equivalent availability factors at or near the nuclear industry average. These factors were achieved and are improving while at all times maintaining solid levels of safety and regulatory performance. The benefit of this work has already manifested itself in capacity factors and equivalent availability factors that were improved in 2008 when compared to 2007 results. The lower capacity factor in 2005 was driven primarily by two major planned outages: the St. Lucie Unit 1 outage to replace the reactor pressure vessel head and the pressurizer; and the Turkey Point Unit 4 outage to replace the reactor pressure vessel head. The lower capacity factor in 2007 was to replace the reactor pressure vessel head and two steam generators at St. Lucie Unit 2 during the same outage. The work performed during these outages is resulting in long term benefits for FPL's customers, as discussed further below.

Q. Please summarize the benefits of the operations of nuclear generation to FPL's customers.

A. The preservation of FPL's nuclear generating assets immediately benefits FPL's customers in terms of fuel savings and enhanced system fuel diversity, and reductions in FPL's system GHG emissions consistent with the policy directives of Governor Crist. Given FPL's current fuel mix, the maintenance of non-fossil fuel, non-GHG emitting sources for generation is necessary to maintain system reliability, increase fuel diversity and allow progress toward meaningful GHG reductions.

Q. Please describe the benefits of operating a large nuclear fleet.

A. FPL and its affiliates are collectively the third largest nuclear operator in the United States, owning and operating eight nuclear units at five locations. FPL's affiliates own interests in and operate the Duane Arnold Energy Center in Iowa, the Point Beach Nuclear Plant, Units 1 and 2, in Wisconsin, and Seabrook Station in New Hampshire. There are several important benefits of owning and operating a large fleet of nuclear plants. First, we are able to directly share operational experience among the plants in its nuclear fleet. We also share operational experience in occupational health and safety matters that improve plant safety. Second, we continuously pursue standardization of programs and procedures and share best practices among our nuclear fleet, improving safety, efficiencies, and reducing costs. Third, we are able to leverage contracts for goods and services among our nuclear fleet, resulting in more favorable pricing and contract terms. Fourth, we are able to maintain a staff of subject matter experts to address specific technical or regulatory issues that may arise at our nuclear plants. It is increasingly difficult and expensive for smaller nuclear operators or operators of single nuclear units to retain such in-house expertise. Fifth, in a similar manner, each of our fleet's nuclear plants maintains an inventory of spare parts, enabling plants to share critical spare parts in some circumstances. Sixth, with the trend of consolidation in the nuclear industry, recruiting and retaining talent in an aging workforce has become a significant challenge. One of the key benefits of operating a large nuclear fleet is the existence of numerous business opportunities for employees to pursue career advancement in our nuclear program in different jobs at different locations. All of these benefits are not available to the operator of a smaller nuclear fleet or a single nuclear plant.

In summary, FPL is proud of its nuclear performance, both from a safety and reliability standpoint. However, this performance cannot be sustained without continued investment in our nuclear plants and our people.

COMPLIANCE WITH NEW AND EVOLVING NRC REQUIREMENTS

Q. Have new NRC requirements and commitments affected costs?

A. Yes. New NRC requirements, such as new gas accumulation limitations, new containment sump requirements, and regulatory commitments regarding alloy 600 issues have increased costs and also made costs less predictable, as explained in further detail below.

Q. Please describe new NRC gas accumulation requirements and the impacts on FPL.

A. The NRC recently issued Generic Letter 2008-01 which requires each licensee to demonstrate that gas voids within the Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems are maintained below the levels that would challenge system operability and that appropriate action is taken when gas accumulation is identified. Gas accumulation in safety related and safety significant piping systems can challenge system operability.

In order to address the NRC's technical concerns, FPL has installed vent valves, and will likely be required to install additional vent valves, to support operability of these systems. In order to determine where these vent valves need to be installed, walkdowns and analyses of the existing piping configuration will be performed; analyses will be required to determine susceptibility of pumps to gas intrusion issues based on walkdown results; pump testing may be required to determine allowable void fraction acceptance criteria; performance of ultrasonic testing of piping will be performed to determine the location of air pockets. Required modifications may include: installation of vent valves in certain locations based on walkdown results and analysis of susceptibility; installation of water accumulator tanks to piping systems; installation of removable panels in piping insulation; and installation of monitoring equipment. Industry experience indicates that the installation of as many as 50 additional vent valves as well as other modifications could be required at each nuclear plant in order to comply with the generic letter. The vent valve installations into existing systems will require extensive scaffold and platform erection, and insulation removal/re-installation. The overall cost of this work is estimated to be approximately $15.3 million in capital expenditures.

Q. Please describe the NRC's containment sump design and performance requirements.

A. In 2003 and 2004, the NRC issued generic communications to the nuclear industry to assess performance of pressurized water reactor containment sumps based on NRC's conclusion that current sump designs were non-conservative. The NRC requested licensees to confirm compliance with applicable regulatory requirements, or describe any compensatory measures implemented to reduce the potential risk for sump blockage, and requested FPL to perform plant specific evaluations of the potential for sump blockage resulting from postulated design basis accidents and to provide the results of the analysis and a schedule for completion of the modifications to bring the sump into compliance with the new requirements. The resulting analyses demonstrated that modifications to the existing sump configurations at all four FPL nuclear units were required to increase sump screen area.

FPL has completed its responses to the NRC and the design, analysis, testing, fabrication, and installation of containment sump strainers at St. Lucie and Turkey Point. FPL has also completed downstream effects analyses and chemical effects testing for its containment sump installations at its nuclear plants. This issue however, is, not yet resolved as NRC continues to question the downstream chemical effects methodology used by FPL and the industry to demonstrate the adequacy of the new containment sump installations. In September 2008, the NRC issued formal Requests for Additional Information that resulted in FPL agreeing to perform additional testing for St. Lucie Unit 1 and additional analyses for Turkey Point Unit 3. In addition, NRC concerns with a generic methodology to address downstream effects will require FPL to perform additional analyses after industry testing is completed. It is probable that additional expenditures will result from this testing and regulatory review, but these potential expenditures cannot be quantified at this time.

The total cost to date, for preparing the containment sump Generic Letter responses, plant specific analyses, modification design, equipment fabrication, and installation was approximately $59.4 million in capital expenditures (representing spending from 2006 through 2008).

Q. What impact could all of these challenges have on FPL?

A. Failure to maintain the condition of safety-related equipment at FPL's nuclear plants could have substantial economic, safety, reliability, and regulatory consequences for FPL, as illustrated by events at other nuclear plants. The discovery of the reactor head degradation at Davis-Besse caused that plant to be shut down for more than two years for regulatory reasons, with resulting impacts of more than $600 million to that company. In this context, the NRC received significant criticism from stakeholders, including members of Congress, for not taking a stronger position on ongoing equipment problems at Davis-Besse and for a perception that the NRC allowed Davis-Besse to continue operating for economic reasons. The result of the Davis-Besse event is that there is now a significant premium on critical self-identification and problem resolution. This has numerous implications for FPL and other nuclear plant operators, including reduced regulatory tolerance for equipment degradation issues in general. This reduced tolerance for equipment problems has resulted in longer and more expensive outages at FPL and throughout the industry.

Q. Does the age of FPL's nuclear plants exacerbate these challenges?

A. Yes. Turkey Point Units 3 and 4 have each been in service for more than 35 years, St. Lucie Unit 1 has been in service for 32 years, and St. Lucie Unit 2 has been in service for 25 years. As noted above, equipment aging is resulting in an increase in the amount of work necessary to operate safely and reliably, and has resulted in unplanned generation loss. In addition, the NRC regulatory environment since the Davis-Besse event strongly discourages operation with degraded equipment even if that degradation does not cause a direct threat to safety or reliability. Accordingly, FPL has invested in and must continue to invest in its nuclear program in order to preserve the viability of FPL's nuclear plants into the renewed license terms.

RESPONSES TO CHALLENGES TO FPL'S NUCLEAR PROGRAM

Q. How is FPL reacting to the challenges to its nuclear program?

A. The challenges to FPL's nuclear program are driving proactive and major investments in plant equipment programs, staffing, and training to preserve the nuclear option. As part of a long-range plan, FPL is focusing on the infrastructure necessary to ensure the successful execution of a multi-year capital investment program. The areas of focus are: improvements in plant material condition, address equipment reliability and aging, backlog reduction and staffing. In order to meet these challenges, FPL plans on making significant capital investments in its nuclear plants. FPL is also undertaking several operational programs which will result in significant additional O&M expenses.

Q. What is included in FPL's capital investment effort?

A. FPL is investing in updating the technology and maintenance at our nuclear facilities to maximize fuel savings, as well as environmental and fuel diversity benefits, of existing nuclear generation, to permit the safe and reliable operation of its nuclear units into their renewed license terms. The major projects included in the capital investment effort are:

1. Turkey Point Excellence Project;
2. Equipment Replacement Related to Alloy 600 Issues and the St. Lucie Pressurizers;
3. License Renewal Efforts;
4. St. Lucie and Turkey Point Long Term Equipment Reliability Projects;
5. Nuclear Asset Management System project implementation;
6. Control Room Digital Upgrades;
7. Spent Fuel Storage Initiatives; and
8. St. Lucie In-Core Instrument Thimble Replacements.

The details of each of these efforts and their cost impact are explained further below.

Q. Please explain the Turkey Point Excellence Project.

A. FPL has implemented a multi-year initiative for the Turkey Point Nuclear Plant called "Turkey Point Excellence." This initiative was implemented at Turkey Point in late 2007 in an effort to focus efforts on the restoration of equipment and material condition, on training and qualifying new staff, reducing attrition rate and on modifying processes and procedures to improve workforce efficiency.

The Turkey Point Excellence project is divided into three categories: addressing people, process, and plant improvements. In the "people" category, the project is focused on addressing filling station staffing to approved numbers, attracting and retaining talented employees, establishing and reinforcing standards and expectations, improving leadership skills, providing professional work environment for employees, and implementing a career development program. In the "process" category, the project focuses on implementing a procedure upgrade program, reducing the corrective action backlog, upgrading training programs, and implementing process improvements consistent with industry best practices. In the "plant improvement" category, the project is focused on reducing on-line and outage maintenance and corrective action backlogs, proactive management of age-related corrosion and coatings related issues, improving operational margin, and implementing a preventative maintenance optimization program. FPL estimates that the capital expenditures of the Turkey Point Excellence Project from 2007-2011 will be approximately $220 million. The implementation of this project is designed to result in improved capacity factors and equivalent availability factors for Turkey Point, thereby resulting in benefits to customers through fuel savings and enhanced system fuel diversity, and reductions in greenhouse gas emissions.

Q. Please explain the alloy 600 issues affecting FPL's nuclear plants.

A. Operators of pressurized water reactors have experienced age-related degradation of alloy 600 materials within the nuclear steam supply system. Alloy 600 is a nickel chromium iron alloy that has been used for many years in applications which require resistance to corrosion and heat. Because of these traits, it was used extensively as a construction material in nuclear plants throughout the industry. The principal degradation mechanism for alloy 600 is primary water stress corrosion cracking. The issues have affected the following nuclear plant components:

1. Pressurizer penetrations (heater sleeves and instrument nozzles);
2. Alloy 600 weld materials (alloy 82/182) associated with pressurizer hot leg and cold leg piping connections including butt welds; and
3. Reactor vessel head penetrations.

Q. Please explain the necessity of addressing alloy 600 issues in pressurizers at FPL's nuclear plants.

A. In 2004, the NRC issued an Information Bulletin requiring all utilities to identify locations of alloy 600 materials in their pressurizers and requesting that utilities provide an acceptable inspection program to assure the integrity of the components for the future. The high operating temperature of the pressurizer makes the materials associated with the pressurizer and its connected piping especially susceptible to primary water stress corrosion cracking. Ten pressurizers at Combustion Engineering plants have developed leaks or cracks in more than 60 heater sleeve penetrations and instrument nozzles since 1998. St. Lucie Units 1 and 2 are Combustion Engineering plants and have experienced these same pressurizer penetration degradation issues. These leaks have resulted in increased inspection costs, repairs, and component replacements. Industry experience indicates that, by the time it is detectable, such cracking is proceeding at an accelerated rate.

In response to the Bulletin, the nuclear industry developed an initiative to take a proactive approach to addressing material degradation issues. Had the industry not developed its own initiative, the NRC would have imposed new regulatory requirements to deal with materials issues. As part of this initiative, FPL replaced the St. Lucie Unit 1 pressurizer using resistant materials during the Fall 2005 refueling outage concurrent with the reactor vessel head replacement. FPL performs visual inspections of the St. Lucie 2 pressurizer heater sleeves every refueling outage as part of normal procedures, which meets FPL's commitment to the NRC. The most recent inspection was performed during the Fall 2007 refueling outage, and no leaks were identified. FPL is planning to make repairs to the St. Lucie Unit 2 alloy 600 heater sleeves during the 2010 refueling outage. In the long run, repairs to the St. Lucie Unit 2 alloy 600 pressurizer heater sleeves will reduce occupational radiation dose to workers, will reduce the risk of extended outages to repair penetrations, and will save money to FPL customers since FPL's nuclear plants are the lowest cost energy providers within FPL's generation system. FPL estimates that the costs of the St Lucie Unit 2 pressurizer heater sleeve work from 2008 through 2010 will be approximately $16 million in capital expenditures.

Q. Please explain the necessity of addressing alloy 600 issues in hot leg and cold leg piping connections including butt welds at FPL's nuclear plants.

A. Material degradation concerns were also identified in the alloy 600 weld materials (i.e., alloy 82/182) associated with hot leg and cold leg piping connections in most pressurized water reactor units. The utility industry has developed an initiative to take a proactive approach to addressing material degradation issues. This initiative determined a schedule and frequency for periodic inspections of reactor coolant system alloy 600 (82/182) butt welds unless mitigated or replaced with resistant material. Visual inspections started in spring of 2004 and will continue for the life of each plant. Under the industry's materials initiative, more comprehensive volumetric inspections of the alloy 600 (82/182) butt welds started in 2007, and all initial inspections on all butt welds must be completed by the end of 2010. Performing the new volumetric inspection requirements and the impact of long term periodic inspections of the alloy 600 (82/182) butt welds have driven most nuclear plant operators to mitigate these welds. Mitigation of these welds reduces the life cycle cost of inspections, reduces occupational radiation exposure for plant workers, and increases plant reliability.

The largest scope of these butt welds are in the reactor coolant system cold leg locations at St. Lucie Units 1 and 2 and will have their first volumetric inspection to the new requirements prior to the end of 2010. Inspections and mitigation efforts associated with these welds are significant due to their number and size (there are eight 36 inch diameter welds per nuclear unit). FPL estimates that the cost to inspect and mitigate the alloy 600 (82/182) butt weld issue is approximately $72.2 million in capital expenditures (representing spending from 2006 through 2011).

The St. Lucie Unit 2 pressurizer butt welds were mitigated or replaced during the Fall 2007 refueling outage. The issue is not applicable to the Turkey Point reactor coolant system pressure boundary butt welds since they are made of materials that are resistant to primary water stress corrosion cracking.

The St. Lucie Unit 2 hot leg butt welds were mitigated during the Fall 2007 refueling outage. The St. Lucie Unit 1 hot leg butt welds were mitigated during the Fall 2008 refueling outage. Plans are being developed for the cold leg locations at St. Lucie Units 1 and 2 to determine whether inspection or mitigation is the best approach. Visual inspections of these alloy 600 (82/182) butt welds completed between 2004 and 2007 did not identify any leakage. FPL projects that it will meet the 2010 deadline for all required inspections.

Q. Please explain how FPL addressed alloy 600 issues associated with the reactor vessel heads for Turkey Point and St. Lucie.

A. As explained in more detail below, FPL has replaced the reactor vessel heads on all four of its nuclear units. Each replacement effort was conducted safely, on time, and within budget.

Q. Please describe FPL's license renewal efforts.

A. In June 2002, FPL received renewed operating licenses from the NRC for Turkey Point Units 3 and 4, and in October 2003, FPL received renewed operating licenses from the NRC for St. Lucie Units 1 and 2. The renewed licenses give FPL the authority to operate each unit for twenty years past the original license expiration date should FPL choose to do so. As a requirement of the renewed operating licenses for St. Lucie and Turkey Point, FPL committed to the NRC to implement a number of new programs unique to license renewal as part of equipment aging management. The NRC will undertake inspections, including document reviews and visual plant inspections, to determine whether FPL has met its commitments and determine whether it is acceptable for St. Lucie and Turkey Point to operate past their existing license terms. FPL is required to provide tangible proof that implementation of license renewal programs has been completed prior to beginning of the license renewal period for each nuclear unit.

FPL's required efforts include completion of preventative maintenance optimization programs; installation of equipment coatings; equipment single point vulnerability program completion; and procedure development and upgrades based on new industry standards. For accounting purposes, these efforts for Turkey Point are contained within the Turkey Point Excellence project budget. These efforts will be significant, with a total estimated capital expenditure of $99.1 million (representing spending from 2007 through 2011).

Q. Please describe the St. Lucie and Turkey Point Long Term Equipment Reliability Projects.

A. The long term equipment reliability projects address the ongoing component issues as part of the day to day operations of St. Lucie and Turkey Point. The primary components addressed in these projects consist of the replacement and refurbishment of pumps, motors, valves and breakers. From 2006 through 2011, FPL has incurred and will incur capital expenditures of approximately $80.2 million for St. Lucie and $81.7 million for Turkey Point for these projects.

Q. Please describe the NAMS Project.

A. The Nuclear Asset Management System (NAMS) is an integrated software system being implemented across the entire nuclear fleet at FPL Group. This effort will utilize the Ventyx Asset Suite software to upgrade and standardize work management, engineering, action tracking, document management, purchasing, inventory, contract management, procurement engineering, and accounts payable for all of the nuclear sites.

The FPL sites currently run on a disparate group of systems including the Indus Passport System Version 1 which was heavily customized and implemented at FPL in the 1980s. That version of software is no longer supported by the vendor. Ventyx is the new company name and Asset Suite is the product that has replaced Passport. The version of Asset Suite that NAMS will implement is at least 10 versions newer than what the FPL sites currently use.

Q. What efficiencies/improvements does NAMS provide for FPL?

A. The NAMS system will standardize the processes and systems being used across the nuclear fleet. The system being implemented is an integrated solution which is used by over 70 percent of the nuclear industry. Accordingly, moving the FPL sites to this version is designed to enable FPL to leverage and share internal knowledge and expertise across sites more easily, reduce plant outage duration, reduce number of disparate systems being maintained and supported, and put FPL on a platform that is vendor supported.

The NAMS system is scheduled to be implemented by the end of the second quarter of 2010. FPL will begin to realize immediately the benefits I just described. The cost of the software and the system implementation is depreciated over 60 months, which offsets the value of those benefits through 2015. However, starting in 2016, approximately $5 million per year of annual savings before taxes is forecasted. From 2007 through 2010, FPL estimates it has spent and will spend approximately $32.8 million ($4.6 million in O&M; $28.2 million in capital) for this system.

Q. Please explain the necessity for the Control Room Digital Upgrades.

A. The Control Room Digital Upgrade capital project will replace older instrument and controls (I&C) in several critical plant control systems at the St. Lucie and Turkey Point. In many cases, analog technology will be replaced with digital technology. I&C maintenance costs are increasing with equipment aging. Existing equipment utilizes older technology that requires maintenance by specially trained personnel. Maintaining specialized personnel increases training costs as the workforce ages and retires. Additionally, many parts may not be available and custom refurbishment of existing parts is necessary. New modern control equipment will minimize the potential for extended plant shutdowns, and maintain plant reliability. Inventory and spare part costs will also be reduced since the availability of spare parts from vendors is increased. Costs associated with maintenance specialization will be reduced. FPL estimates the cost of these upgrades to be approximately $94.2 million in capital expenditures (representing spending from 2006 through 2011 excluding uprate projects).

Q. How is FPL affected by the United States Department of Energy's (DOE) failure to carry out its legal obligation to dispose of FPL's spent nuclear fuel?

A. FPL has previously provided the Commission with details of its attempts through litigation to seek recovery of past and future damages related to the U.S. Government's failure to dispose of FPL's spent fuel. FPL's efforts are continuing, and there is currently no trial date set for FPL's lawsuit against the U.S. Government to recover damages.

Q. Please explain the necessity for spent fuel storage initiatives.

A. As discussed above, FPL will incur capital and O&M expenditures to manage the DOE's failure to begin accepting spent fuel for disposal as required by law. On-site storage capacity for spent fuel in the spent fuel pools is limited. As existing capacity is utilized, alternative methods of storing the spent fuel are required. Alternative storage is required as a prudent operational measure whenever the spent fuel pools can no longer accommodate a full-core offload. Maintaining a full-core offload capability is a prudent measure in the event that all of an entire core of reactor fuel must be offloaded to accomplish emergent repairs to the reactor.

Storage space could also be lost at Turkey Point Units 3 and 4 due to degradation of the neutron absorbing material (Boraflex) in the spent fuel storage racks. To date, Boraflex degradation has only affected the loss of full-core offload capability at Turkey Point Unit 3. As discussed below, FPL is working toward development of alternatives to Boraflex.

Q. What are the specific spent fuel initiatives for St. Lucie?

A. To address the ongoing need for interim spent fuel storage in the nuclear fleet, FPL has chosen dry cask storage. The NRC provides a general license in its regulations (10 CFR Part 72 Subpart K) for operating nuclear plants to implement dry cask storage at Independent Spent Fuel Storage Installations (ISFSIs) at nuclear plant sites. A general license is a generic authorization not requiring the issuance of a specific license or an opportunity for a formal adjudicatory hearing from the NRC.

Dry cask storage consists of a system of concrete and steel storage casks placed on a secure onsite storage pad. Each spent fuel storage cask can contain as many as 32 spent fuel assemblies. Once operational, dry storage would extend the full-core reserve capability of each spent fuel pool. St. Lucie has completed the construction of its ISFSI and in 2008, the plant completed its first loading campaign of six casks. From 2006 through 2011, FPL estimates that it has spent and will spend approximately $71.7 million ($60.6 million in capital; $11.1 million in O&M) on spent fuel storage initiatives at St. Lucie. These initiatives include dry cask storage, upgrades of the cranes required to handle the spent fuel storage casks, cask pit rack installation, and addressing Boraflex issues.

Q. What are the specific spent fuel initiatives for Turkey Point?

A. Installation of a removable storage rack in the cask pit area of each spent fuel pool provides increased storage space for both units. In November 2004, the NRC approved the use of these racks and the racks have been installed. The cask pit racks extend the loss of full-core reserve dates for Turkey Point Units 3 and 4 to 2012.

These projected dates for the loss of the full-core offload capability dates are based on the existing spent fuel pool storage capacity without further degradation of Boraflex or assuming successful implementation of a solution to Boraflex degradation. FPL is implementing alternatives to eliminate the use of Boraflex, such as neutron-absorbing storage rack inserts to replace the need for Boraflex. A contract has been awarded to install these neutron-absorbing storage rack inserts, and NRC approval was obtained in July, 2007 allowing use of these inserts. The objective of this project is to restore the full storage capacity of the Turkey Point spent fuel pools with no reliance on Boraflex. FPL has also extended the storage capacity of the Turkey Point Unit 3 spent fuel pool by recovering storage cells that were previously unusable. This cell recovery project allows deferring the first loading of dry storage casks at Turkey Point plant by one operating cycle (approximately 18 months).

To extend Turkey Point operations for the long term, FPL is planning to implement dry cask storage at Turkey Point. In 2006, FPL initiated design work for an ISFSI at Turkey Point as well as spent fuel cask crane upgrades. FPL plans to start storing spent nuclear fuel in dry storage casks at the Turkey Point ISFSI by the end of 2011. From 2006 through 2011, FPL estimates that it has spent and will spend approximately $88.5 million ($82.5 million in capital; $6 million in O&M) on spent fuel storage initiatives at Turkey Point. These initiatives include dry cask storage, upgrades of the cranes required to handle the spent fuel storage casks, cask pit rack installation, and addressing Boraflex issues.

Q. Please explain the necessity of the St. Lucie In Core Instrument (ICI) Thimble Replacements.

A. Industry experience at another nuclear plant identified a dimensional discrepancy with a thimble support plate (TSP) in the reactor core. The TSP is part of the reactor in-core instrumentation system. This system is made up of thimble tubes containing detectors that are inserted into selected fuel assemblies for monitoring of nuclear fuel performance during operation. Thimble elongation is caused by the high level of radiation exposure experienced by the Zircaloy thimbles due to their extensive time in the reactor core. The Zircaloy material elongation is occurring at a rate greater than the amount anticipated in the original thimble design. When the thimbles elongate to the point where they contact the fuel assembly lower end fitting, the TSP can be lifted off its normal seated position in the reactor vessel, and the ICI thimbles may buckle. A long term resolution of this issue requires replacement of the zircaloy thimbles. Both St. Lucie Units 1 and 2 are affected by the unanticipated growth of the zircaloy tubes. The ICI thimbles were replaced in St. Lucie Unit 1 in 2007, and the ICI thimbles will be replaced in St. Lucie Unit 2 during the refueling outage in Fall 2010. The cost of this effort for St. Lucie Unit 1 was $20.4 million, and for St. Lucie Unit 2 the cost is projected to be $16.7 million all in capital expenditures.

REVIEW OF ISSUES FROM FPL'S 2005 RATE CASE

Q. Please summarize the results of the major projects included in the capital investment effort for the 2005 Rate Case.

A. In my testimony in the 2005 Rate Case, I explained that FPL would be undertaking a number of modifications to its nuclear plants to improve reliability, reduce occupational radiation exposure, reduce outage time, and to provide savings to FPL customers. I am proud to report that all of the projects that were undertaken were executed within the schedule allotted for each and within the overall budget. While FPL implemented the most significant of the planned projects, FPL dealt with emerging regulatory and operational issues and reprioritized projects as appropriate. FPL constantly faces such emerging issues and we are consistently required to re-evaluate projects based on safety, regulatory, and reliability factors.

FPL replaced the reactor vessel heads on all four of its nuclear units, the St. Lucie Unit 1 pressurizer, and the St. Lucie Unit 2 steam generators. The total combined budget for these projects was $570 million. FPL accomplished all of these projects with a total expenditure of $543 million (net of AFUDC). These projects were also accomplished within the schedule set for each project. In addition, the construction of the concrete storage pad and associated facilities and first cask loading campaign of the St. Lucie dry cask storage project was completed on budget and within the project schedule.

Q. How did FPL and its customers benefit from FPL's early decisions to replace the reactor heads, the St. Lucie Unit 2 steam generators, and the St. Lucie Unit 1 pressurizer?

A. FPL and its customers enjoyed a substantial cost savings by placing orders for these components prior to recent cost increases. Delayed procurement of these major components would have resulted in component costs more than $100 million higher than the prices paid by FPL. These increases have resulted from increased demand on the nuclear supply chain, including on forging suppliers, arising from the interest in new nuclear plant construction, replacement of components at nuclear plants worldwide, demand from the petrochemical industry, and new desalinization plants. As a result of this increased demand, prices for major nuclear components and the necessary lead times for component ordering have both doubled. FPL avoided all of these challenges by ordering new reactor vessel heads, the replacement steam generators for St. Lucie Unit 2, and the replacement pressurizer for St. Lucie Unit 1 in a timely fashion.

Delaying procurement also would have resulted in substantial additional O&M costs due to necessary inspection and repair of additional degradation of alloy 600, resulting in more extensive remediation and at least two more outages of expanded inspection and remediation at each affected nuclear unit for each component due to extended procurement lead times. These actions will result in increased efficiencies over the remaining lives of FPL's nuclear plants because of reduced inspection requirements and less frequent inspections, saving outage time and reducing occupational radiation dose. These factors result in direct benefits to customers in the form of fuel savings and enhanced system fuel diversity, and reductions in FPL's system GHG emissions.

FINANCIAL IMPACTS OF RESPONDING TO CHALLENGES

Q. How do the forecasted capital expenditures compare to historical values?

A. Exhibit JAS-8 shows the past several years the Nuclear Business Unit's capital expenditures. With the challenges going forward, these spending levels must be increased to preserve the nuclear option. The overall impact on capital expenditures is summarized as follows: For 2006, FPL incurred capital expenditures for the Nuclear Business Unit of approximately $193 million. In the 2010 Test Year, FPL expects that its capital expenditures for the Nuclear Business Unit will be approximately $276.0 million. In 2011, FPL expects that its capital expenditures for the Nuclear Business Unit will be approximately $175.5 million. Collectively, FPL expects that its capital expenditures for the Nuclear Business Unit from 2006 through 2011 will be approximately $1.4 billion in order to meet regulatory requirements and sustain long term operations of the nuclear units. The details of the projects that make up these expenditures are set forth in Exhibit JAS-9.

Q. Are there other O&M expenses, besides the Nuclear Business Unit's O&M expenses described earlier in this testimony, included in the FERC Nuclear O&M accounts and functional total presented in FPL's MFRs?

A. Yes. Included in the FERC Nuclear O&M accounts (accounts 517-532) and functional total are O&M expenses incurred or associated with other FPL business units that provide support to the Nuclear Business Unit (as defined by FERC). Examples of these expenses would include those incurred by Integrated Supply Chain and Information Management supporting the nuclear stations. There is also a reduction to the FERC Nuclear O&M accounts for the portion of expenses related to the owners of St. Lucie Unit 2. In Exhibit JAS-10, the total O&M by year reflects the O&M for all functional areas in order to reconcile the Nuclear Business Unit O&M expenses with the FERC Nuclear functional totals contained in the MFRs.

Q. How do the forecasted O&M expenditures compare to historical values?

A. Exhibit JAS-10 shows FPL's historical O&M expenditures for its nuclear plants. With respect to O&M expenditures, the overall impact is summarized as follows: In 2006, FPL incurred O&M expenditures for the Nuclear Business Unit of approximately $336.1 million. In the 2010 Test Year, FPL expects that its O&M expenditures for the Nuclear Business Unit will be approximately $424.3 million. In 2011, FPL expects that its O&M expenditures for the Nuclear Business Unit will be approximately $439.8 million.

Q. Please discuss the comparison of FPL's 2010 and 2011 O&M for the Nuclear Business Unit to the Commission's benchmark using 2006 as the benchmark year.

A. FPL's 2010 Test Year and 2011 Subsequent Year O&M for the Nuclear Production function exceeds the benchmark based on 2006 by $37.3 million and $44.7 million respectively. The major drivers of the variance are categorized as follows:

Regulatory Commitments:

First, the NRC has significantly increased the fees FPL must pay as a result of the nuclear units being regulated by the NRC. NRC licensing fees are charged at a per unit rate and inspection fees are charged at a per hour rate for services required. Second, FPL is required to load spent nuclear fuel in dry casks for

St. Lucie in 2010 and Turkey Point in 2011, which is discussed previously in my testimony.

Long Term Infrastructure Investment:

Although long term infrastructure investment typically refers to improvements to the capital of FPL's system, it is also true that long term safe, reliable operations of our nuclear units depends upon our maintaining a stable, high quality work force. As discussed in my testimony regarding aging workforce and competition for workers in the industry, FPL's compensation of the Nuclear Business Unit work force has to keep pace with industry expectations. As a result of these factors, the primary driver of increased costs in the area of competitive labor is the payroll escalation at four percent per year, which is necessary to ensure retention of talent given the shortage of qualified nuclear professionals in the industry, and a payroll staffing increase for 270 employees to address Operations staffing needs and the Maintenance & Engineering College Program.

Second, the primary driver of increased costs in the area of availability improvements is the addition of the Turkey Point Excellence project, discussed previously in my testimony, which commenced in 2007. Included as part of this project is costs associated with NRC commitments to implement a number of new programs unique to license renewal as part of equipment aging management. This project was not in place in 2006.

Q. What actions have been taken by the Nuclear Business Unit in response to the economic downturn experienced starting in 2008?

A. The Nuclear Business Unit had performed an evaluation of our business plans and determined the following measures were necessary to address this issue. First, several vacant positions within the Nuclear Business Unit were either deferred or eliminated. The associated positions were primarily fleet support positions deemed non-critical to ongoing safe and reliable operation of St. Lucie and Turkey Point. Second, various projects and initiatives were prioritized with some eliminated and some being deferred to future periods. All actions to address the economic downturn did not in any way compromise the safety or reliability to the operations of St. Lucie and Turkey Point.

Q. Can you explain why the salaries of FPL Nuclear employees are higher and are increasing more rapidly than salaries in other FPL business units?

A. Yes. As I discussed earlier, there is growing competition for talent in the nuclear industry, which is being driven by a shrinking skilled labor pool coupled with a high demand for skilled workers. There is also general attrition related to retirements because of the aging nuclear workforce. Another factor is the decrease in the number of U.S. nuclear engineering programs, from 65 in 1980 to 29 in 2007. There has also been talent migration from commercial nuclear operators to contracting firms, suppliers, engineering firms, etc. Finally, there is renewed interest in nuclear power, based on the number of NRC combined construction/operating license submittals to date and announced submittals.

FPL's total compensation costs for its nuclear employees have also been impacted by the following factors: an industry-wide practice of "poaching" existing talent from peer organizations due to the limited pool of available experienced talent, creating an inflated market rate for impacted job classifications; the shrinking size of experienced talent pool created by limited hiring zones due to agreements established as a result of asset acquisitions and attempted mergers; efforts to reduce attrition and to maintain requisite skill-sets; maintaining equity for similar positions and contributions across FPL's sites locations; increased pressure to ensure that the existing engineering design and support knowledge base is maintained resulting from NRC hiring a minimum of 350 new technical staff to support the licensing process for new reactors; architectural/engineering firms developing the capability through increased technical staffing to successfully compete for and execute the construction of new nuclear plants; and FPL's approach to aggressively establish and maintain an internal pipeline of talent.

There are also special cost factors driven by federal regulatory requirements applicable to operators who must be licensed by the federal government to operate FPL's nuclear plants. Federal law and NRC regulations at 10 CFR Part 55 require that any person who manipulates the controls of a nuclear power plant must have a personal, site-specific operator license issued by the NRC. NRC regulations further require each nuclear power plant control room to have a continuous presence of two licensed reactor operators (ROs) and one senior reactor operator (SRO) per nuclear unit. The hours that each RO and SRO can work are also limited by NRC requirements, so there must be an adequate number of licensed operators at each site that accounts for illness and attrition. Further, the licensing process for individual operators is time-consuming and costly.

It can take as long as eight to nine years to develop an operator candidate into an SRO. In general, the cost to FPL of training, examination development, and licensing of a single candidate who starts without a license to obtain an SRO license is approximately $160,000, not including payroll and benefits of each candidate, or the fees charged by the NRC for its review of the examination materials and oversight of the training and examination process. Additionally, FPL has been required to increase licensed operator class size (and hire additional training instructors to support such classes) to ensure adequate staffing in light of the competitive environment for nuclear professionals.

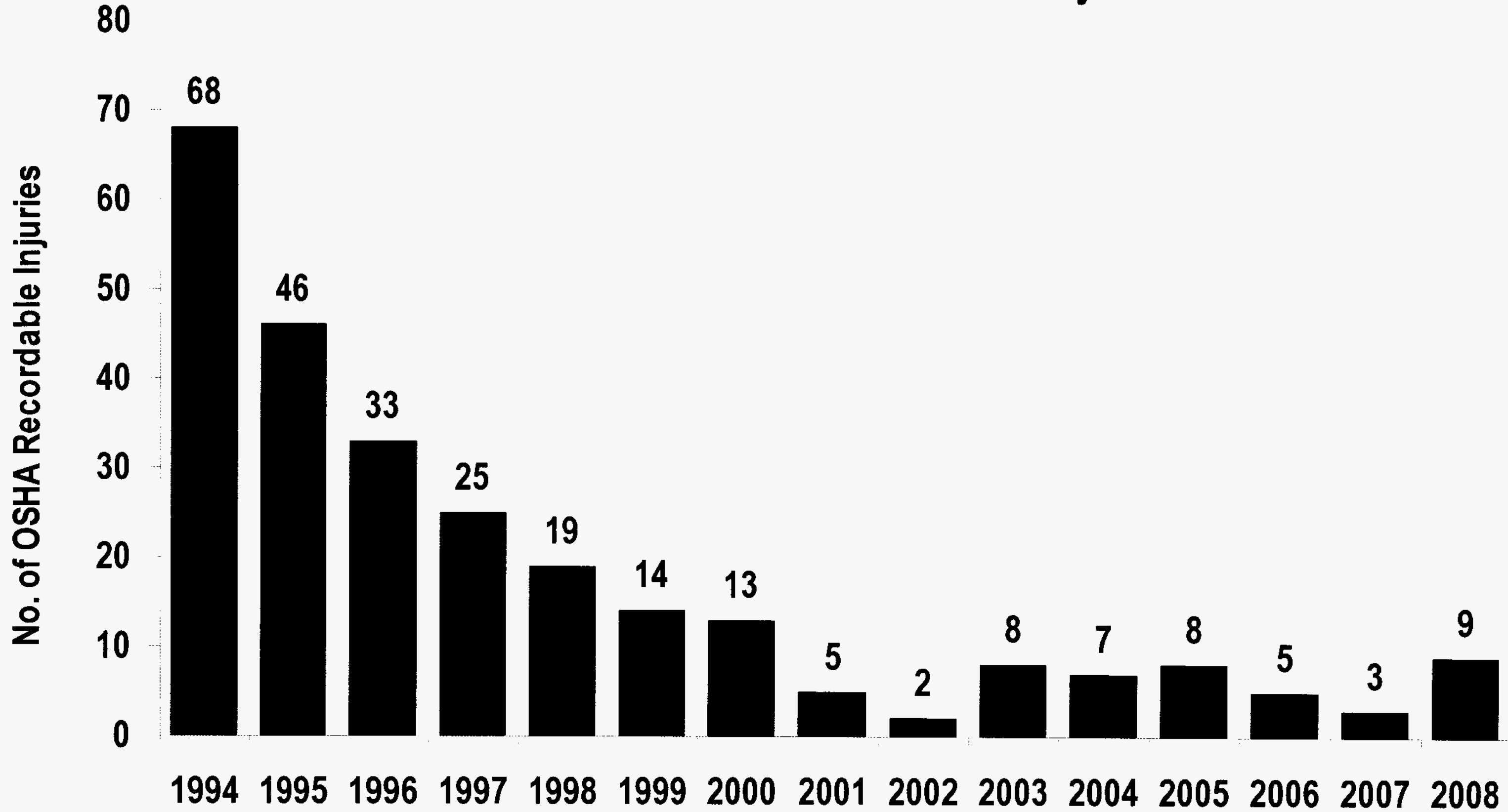
Q. Has FPL had to increase staffing for its nuclear plants in order to mitigate the increase in nuclear industry salaries?

A. Yes. A substantial percentage of the nuclear workforce is approaching retirement age, creating challenges for maintenance of needed expertise and creating demands for staffing adjustments and training of new workers. In particular, certain highly skilled classes within the Nuclear Business Unit will have approximately 660 employees eligible to retire within the next five years. The entire nuclear industry faces this issue. As a result, FPL cannot count on hiring from other nuclear entities to compensate for the workforce attrition issue. FPL is now required to add staff to anticipate and ultimately compensate for attrition and retirements. In 2006, FPL partnered with the Homestead campus of Miami Dade College (Miami Dade) and the Indian River State College (IRSC) to create an associate of science degree in electrical power technology to help meet FPL's need for more nuclear workers. As part of the FPL Professional Training Pipeline, FPL agreed with each of Miami Dade and IRSC, through 2016, to provide that a maximum of 30 internships will be made available by FPL each summer for candidates who complete all requirements of the first year of the program, and FPL agreed to hire at least 20 (if available) candidates per year who successfully complete the two-year program. FPL has also entered into a Memorandum of Understanding with its labor union, the International Brotherhood of Electrical Workers, System Council U-4, to implement a nuclear employee apprentice program to develop additional nuclear workers for St. Lucie and Turkey Point. FPL expects to incur an annual cost of less than $125,000 per year to administer the training pipeline. This low cost option will provide FPL a mechanism to address the attrition and retirements in the maintenance organization.

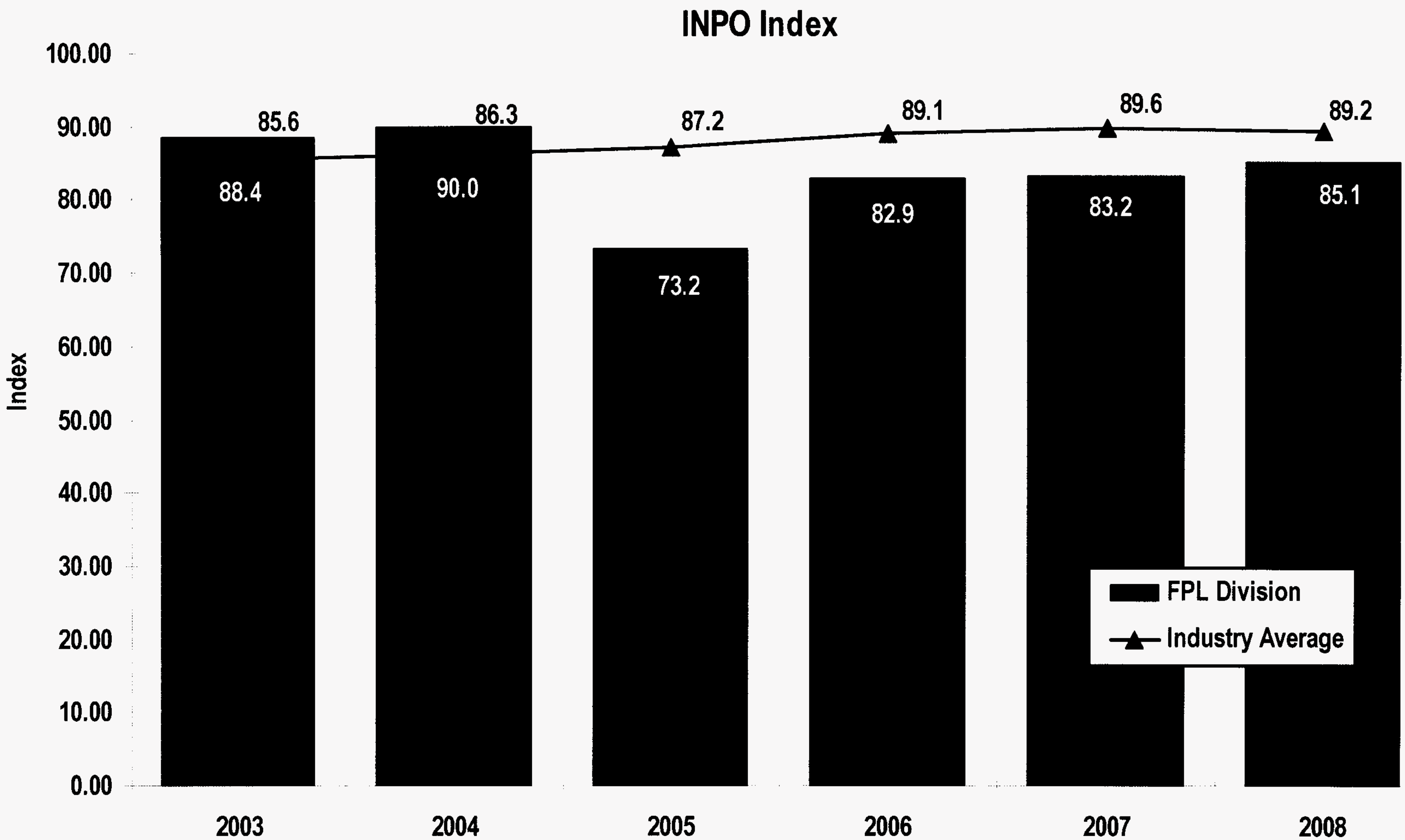
Q. Does this conclude your direct testimony?

A. Yes.

FPL Nuclear Personnel Safety



Docket No. 080677-EI
FPL Nuclear Personnel Safety
Exhibit No. JAS-1, Page 1 of 1



2005 INPO Index affected by planned work to address industry-wide issues; INPO Index gradually increased since 2005

Data source: Institute of Nuclear Power (INPO)
2008 Industry average data: 3rd Quarter 2008

As of December 31, 2008

NRC Performance Indicators for St. Lucie and Turkey Point

	Turkey Point Unit 3	Turkey Point Unit 4	St. Lucie Unit 1	St. Lucie Unit 2
Initiating Events Cornerstone				
Unplanned Reactor Scrams per 7000 Critical Hours (Automatic and Manual)	Green	Green	Green	Green
Unplanned Reactor Scrams with Loss of Normal Heat Removal	Green	Green	Green	Green
Unplanned Scrams with Complications	Green	Green	Green	Green
Mitigating Systems Cornerstone				
Mitigating System Performance	Green	Green	Green	Green
Safety System Functional Failures	Green	Green	Green	Green
Barriers Cornerstone				
RCS Activity	Green	Green	Green	Green
RCS Leakage	Green	Green	Green	Green
Emergency Preparedness Cornerstone				
Emergency Response Organization (ERO) Drill/Exercise Performance	Green	Green	Green	Green
ERO Drill Participation	Green	Green	Green	Green
Alert and Notification System Performance	Green	Green	Green	Green
Occupational Radiation Safety Cornerstone				
Occupational Exposure Control Effectiveness	Green	Green	Green	Green
Public Radiation Safety Cornerstone				
RETS/ODCM Radiological Effluent Occurrence	Green	Green	Green	Green
Physical Protection Cornerstone				
Protected Area Security Equipment Performance Index	Green	Green	Green	Green

Acceptable Performance Licensee Response Band	Green	Acceptable Performance Increased Regulatory Response Band	White	Acceptable Performance Required Regulatory Response Band	Yellow	Unacceptable Performance Plants not normally permitted to operate within this band	

Data source: U.S. Nuclear Regulatory Commission

Docket No. 080677-EI
NRC Performance Indicators for
St. Lucie and Turkey Point
Exhibit No. JAS-3, Page 1 of 1

As of December 31, 2008

NRC Inspection Findings for St. Lucie and Turkey Point

	Turkey Point Unit 3	Turkey Point Unit 4	St. Lucie Unit 1	St. Lucie Unit 2
Initiating Events	Green	Green	Green	Green
Mitigating Systems	Green	Green	Green	Green
Barriers	Green	Green	Green	Green
Emergency Preparedness	Green	Green	Green	Green
Occupational Radiation Safety	Green	Green	Green	Green
Public Radiation Safety	Green	Green	Green	Green
Physical Protection	Green	Green	Green	Green

Data source: U.S. Nuclear Regulatory Commission

Docket No. 080677-EI
NRC Inspection Findings for St.
Lucie and Turkey Point for 2008
Exhibit No. JAS-4, Page 1 of 1

As of December 31, 2008

NRC Regulatory Status for St. Lucie and Turkey Point

Turkey Point Unit 3	Turkey Point Unit 4	St. Lucie Unit 1	St. Lucie Unit 2
Column 1 Licensee Response	Column 1 Licensee Response	Column 1 Licensee Response	Column 1 Licensee Response

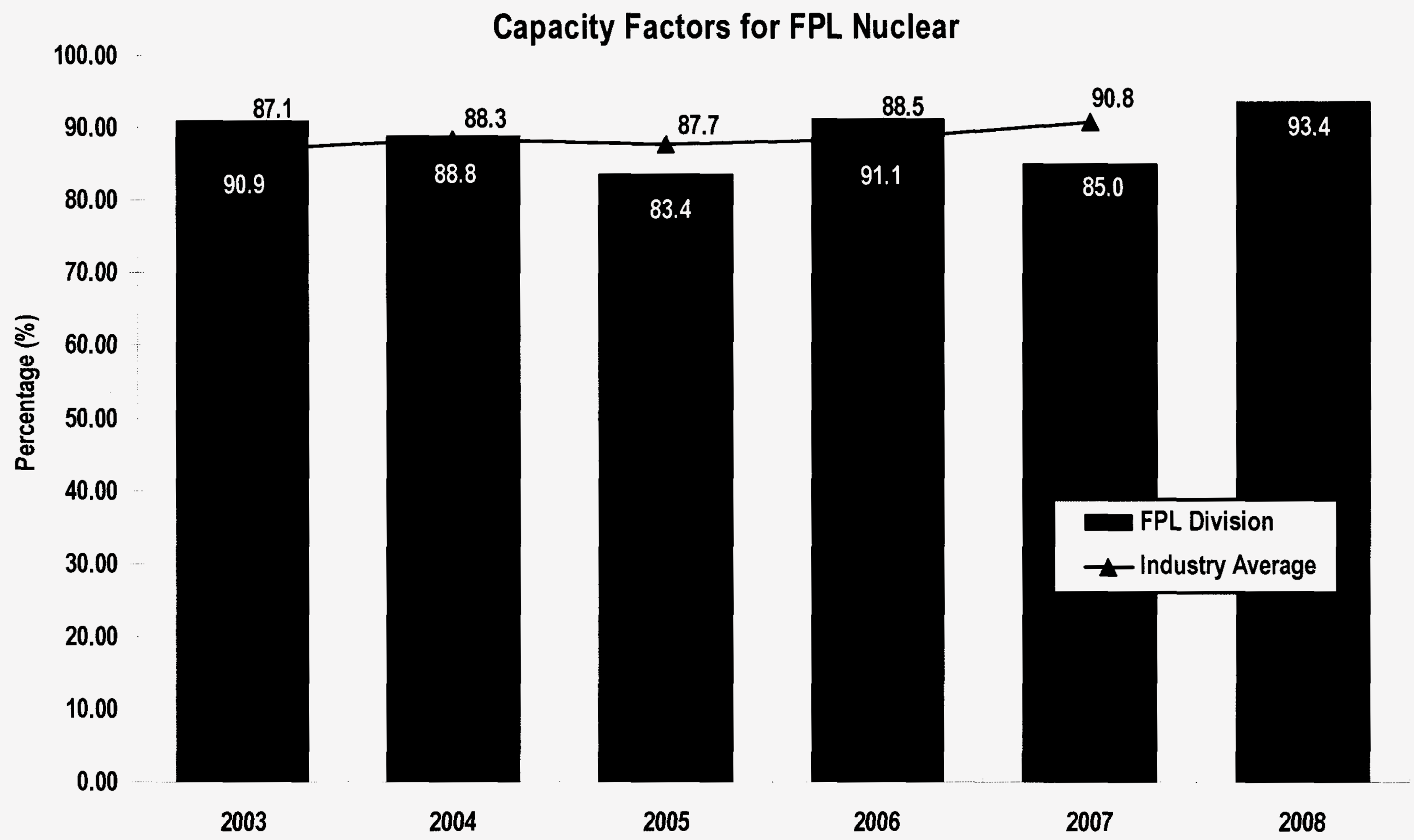
Best

Column 1 – Licensee Response
Column 2 – Regulatory Response
Column 3 – Degraded Cornerstone
Column 4 – Multiple/Repetitive Cornerstones
Column 5 – Unacceptable Performance

Worst

Data source: U.S. Nuclear Regulatory Commission

Docket No. 080677-EI
NRC Regulatory Status for St. Lucie and Turkey Point
Exhibit No. JAS-5, Page 1 of 1

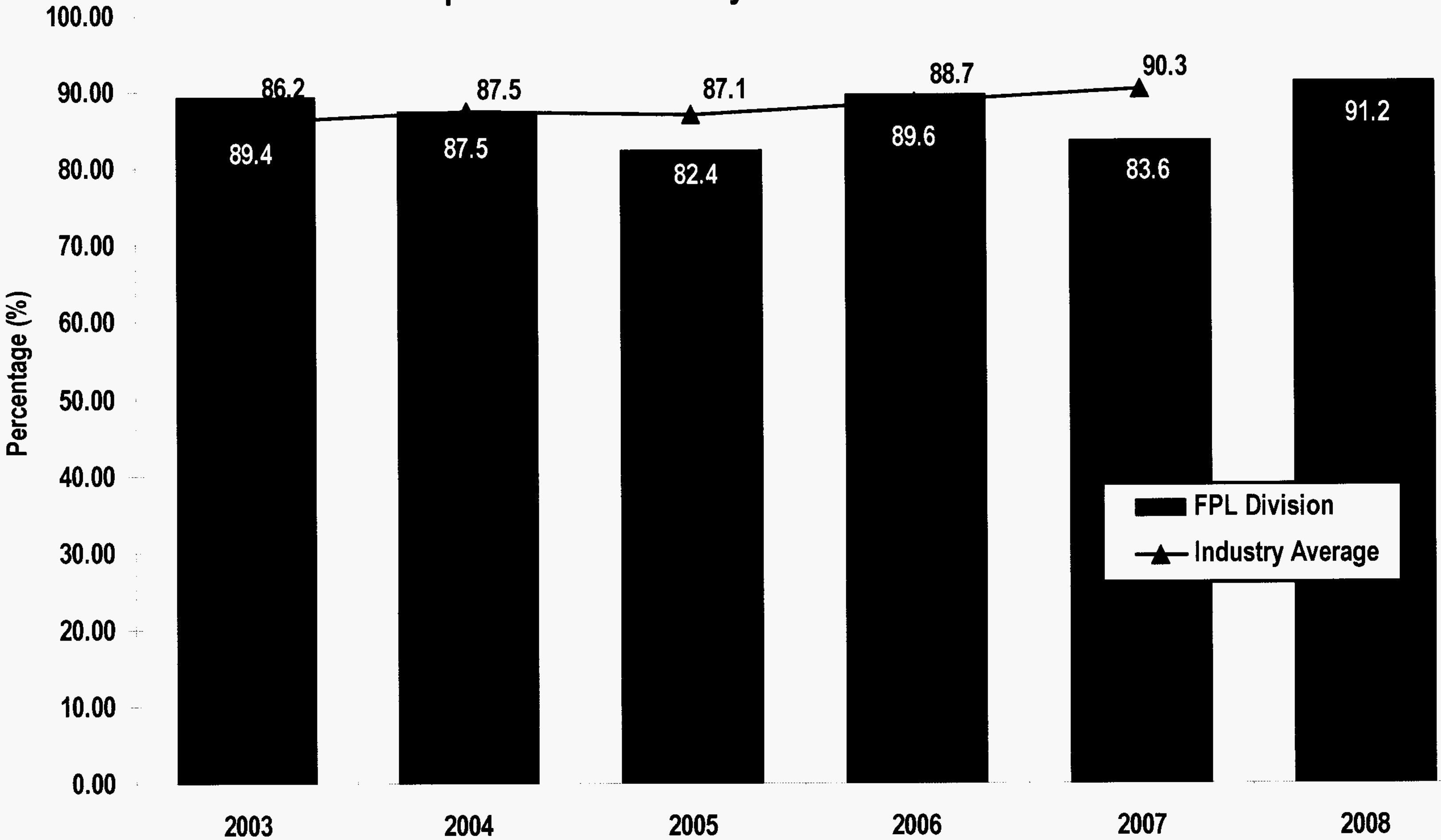


2005 and 2007 affected by planned work to address industry-wide issues

Data source: North American Electric Reliability Council – Generating Availability Data System (NERC-GADS)

Docket No. 080677-EI
Capacity Factors for FPL Nuclear
Exhibit No. JAS-6, Page 1 of 1

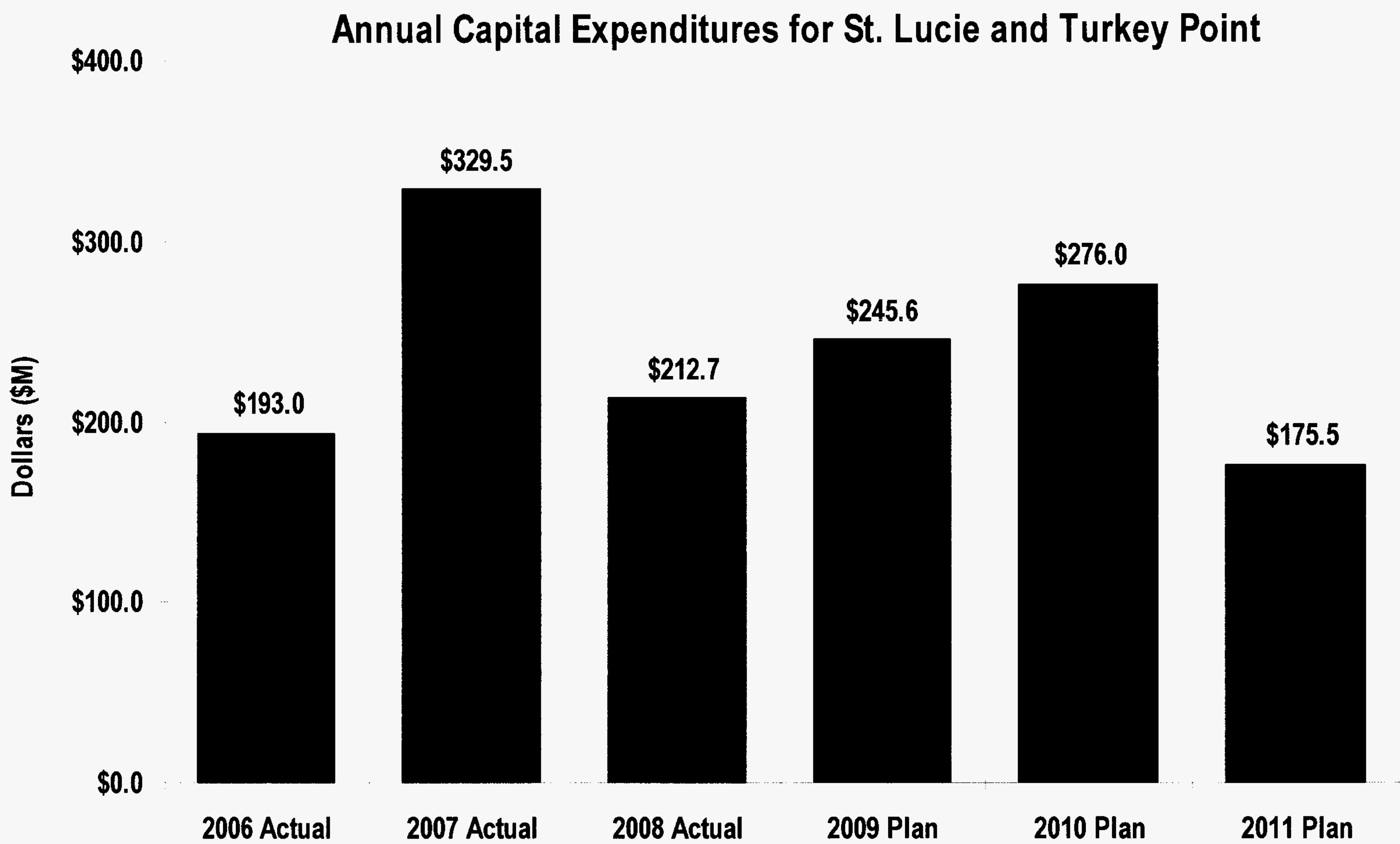
Equivalent Availability Factor for FPL Nuclear



2005 and 2007 affected by planned work to address industry-wide issues

Data source: North American Electric Reliability Council – Generating Availability Data System (NERC-GADS)

Docket No. 080677-EI
Equivalent Availability Factor for FPL Nuclear
Exhibit No. JAS-7, Page 1 of 1

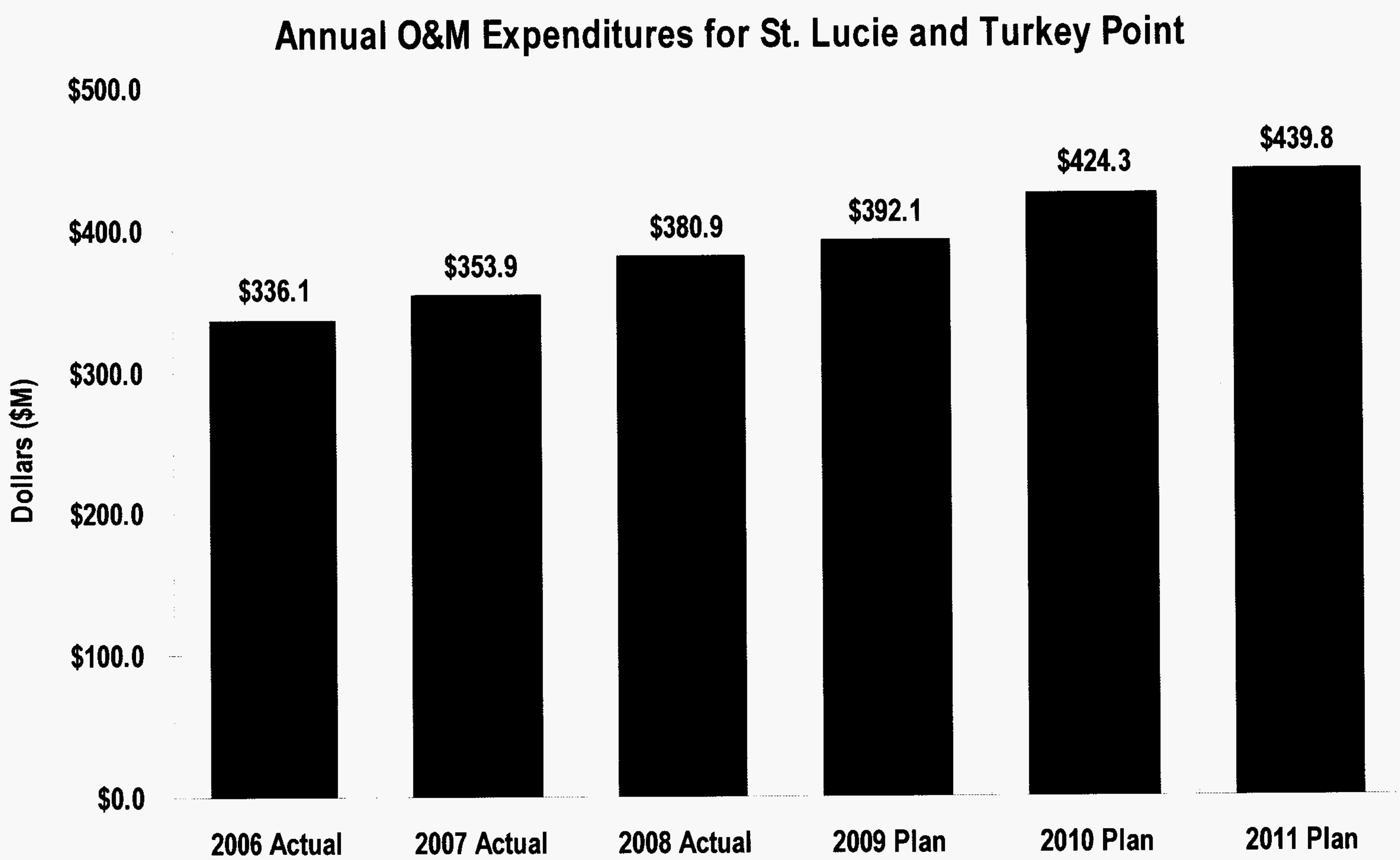


FPL's annual capital expenditures for St. Lucie and Turkey Point above do not include capital expenditures for the uprates.

Docket No. 080677-EI
Annual Capital Expenditures for
St. Lucie and Turkey Point
Exhibit No. JAS-8, Page 1 of 1

Cumulative Capital Investment 2006 - 2011

Project	2006	2007	2008	2009	2010	2011	Total
Turkey Point Excellence Program		1,308,179	47,874,142	65,087,180	70,408,201	35,306,780	219,984,482
St. Lucie Unit 2 Steam Generator Replacement	44,113,721	107,505,276	15,970,315	3,120,000	-	-	170,709,312
Turkey Point & St. Lucie Spent Fuel Management	25,946,552	28,476,585	18,704,700	35,024,625	27,431,396	7,459,408	143,043,265
Control Room Digitial Upgrade Project	19,315,293	20,930,696	16,717,352	12,667,753	17,200,075	7,341,294	94,172,464
Turkey Point Equipment Reliability	17,338,900	13,200,911	11,472,155	8,530,000	13,900,000	17,300,000	81,741,966
St. Lucie Equipment Reliability	14,442,392	13,179,050	8,665,888	13,760,754	13,400,000	16,800,000	80,248,084
Alloy 600 Mitigation Projects	394,887	9,958,450	7,895,478	7,411,615	45,808,599	761,040	72,230,069
Containment Sumps	6,749,298	38,580,986	14,042,528	-	-	-	59,372,812
St. Lucie Reactor Head Replacement	14,448,928	36,111,562	3,145,065	-	-	-	53,705,554
St. Lucie License Renewal		911,074	15,998,759	11,948,682	9,808,686	9,808,686	48,475,887
Turkey Point Projects & Turbine Generator	18,863,263	(1,961,032)	6,074,355	12,212,119	6,375,212	7,645,340	49,209,257
St. Lucie Minor Projects	5,363,728	5,360,237	(1,094,159)	4,850,970	7,267,853	18,882,848	40,631,477
St. Lucie ICI Thimble Replacements	1,702,192	18,656,894	(3,869)	500,000	16,166,598	-	37,021,815
St. Lucie RCP Motor Swaps		350,596	7,560,047	3,623,998	12,507,001	9,360,000	33,401,642
Turkey Point Unit 3 Turbine Generator	-	10,037,981	574,750	9,517,571	3,859,096	674,814	24,664,212
NFPA 805 Fire Protections			-	-	-	24,747,407	24,747,407
Turkey Point Unit 4 Turbine Generator	3,670,718	788,789	5,563,152	6,701,524	658,546	3,422,324	20,805,053
St. Lucie Maintenance Bldg			6,870,597	13,102,349	-	-	19,972,946
St. Lucie Unit 2 Turbine Generator	4,900,134	2,055,426	751,912	6,662,080	4,607,330	985,243	19,962,125
St. Lucie Unit 2 Pressurizer Heater Sleeve Repair			109,776	3,239,997	12,700,000	-	16,049,773
Generic Letter 2008-01 Gas Accumulation Project			7,728,663	7,600,000	-	-	15,328,663
St. Lucie Unit 1 Turbine Generator	111,228	2,742,636	3,076,221	935,135	4,496,262	3,787,128	15,148,609
Turkey Point Split Pin Replacements	2,348,151	6,278,921	5,158,072	-	-	-	13,785,144
Sub-Total	179,709,385	314,473,215	202,855,899	226,496,352	266,594,855	164,282,312	1,354,412,018
St. Lucie / Turkey Point Base Projects	13,247,847	14,990,143	9,809,939	19,093,647	9,453,144	11,197,687	79,623,781
Total	**192,957,232**	**329,463,358**	**212,665,838**	**245,589,999**	**276,047,999**	**175,479,999**	**1,434,035,799**



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Annual O&M Expenditures for
St. Lucie and Turkey Point
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