

**BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION**

**DOCKET NO. 150009-EI  
FLORIDA POWER & LIGHT COMPANY**

**MARCH 2, 2015**

**IN RE: NUCLEAR POWER PLANT COST RECOVERY  
FOR THE YEAR ENDING  
DECEMBER 2014**

**TESTIMONY & EXHIBITS OF:**

**NILS J. DIAZ**

1                   **BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION**

2                   **FLORIDA POWER & LIGHT COMPANY**

3                   **DIRECT TESTIMONY OF NILS J. DIAZ**

4                   **DOCKET NO. 150009-EI**

5                   **March 2, 2015**

6

7   **Q.    Please state your name and business address.**

8    A.    My name is Nils J. Diaz. My business address is 2508 Sunset Way, St.  
9           Petersburg Beach, Florida, 33706.

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

11   A.    I am the Managing Director of The ND2 Group (ND2). ND2 is a consulting  
12           group with a strong focus on nuclear energy matters. ND2 presently provides  
13           advice for clients in the areas of nuclear power deployment and licensing, high  
14           level radioactive waste disposal and storage issues, and advanced security systems  
15           development.

16 **Q.    Please describe your other industry experience and affiliations.**

17   A.    I presently conduct policy advising and consulting for governments and industry,  
18           and hold board memberships in private institutions. I recently chaired the  
19           American Society of Mechanical Engineers Presidential Task Force on Response  
20           to Japan Nuclear Power Plant Events and two major reviews of the Safety Culture  
21           and the Quality Assurance Program for the Hanford Waste Treatment Plant. I  
22           previously served as the Chairman of the United States Nuclear Regulatory  
23           Commission (NRC) from 2003 to 2006, after serving as a Commissioner of the

1 NRC from 1996 to 2003. Prior to my appointment to the NRC, I was the Director  
2 of the Innovative Nuclear Space Power and Propulsion Institute for the Ballistic  
3 Missile Defense Organization of the U.S. Department of Defense, and Professor  
4 of Nuclear Engineering Sciences at the University of Florida. I have also  
5 consulted on nuclear energy and energy policy development for private industries  
6 in the United States and abroad, as well as the U.S. Government and other  
7 governments. I have testified as an expert witness to the U.S. Senate and House  
8 of Representatives on multiple occasions over the last 30 years. I also served as a  
9 Commissioner on Florida's Energy and Climate Commission from 2008 to 2010.  
10 Additional details on my background and experience are provided in my resume,  
11 which is attached as Exhibit NJD-1.

12 **Q. Are you sponsoring any Exhibits in this case?**

13 A. Yes. I am sponsoring Exhibit NJD-1 - Summary Resume of Nils J. Diaz, PhD.

14 **Q. What is the purpose of your testimony?**

15 A. The purpose of my testimony is to review the prudence of Florida Power & Light  
16 Company's (FPL's) continued pursuit of a Combined Operating License (COL)  
17 for the Turkey Point Nuclear Units 6 and 7 (Turkey Point 6 & 7) project in 2014,  
18 in accordance with applicable nuclear industry and regulatory considerations.

19 **Q. How have you prepared for your review of FPL's approach to the licensing  
20 of Turkey Point 6 & 7?**

21 A. I continue to be well-informed of FPL's Combined Operating License Application  
22 (COLA) for the Turkey Point 6 & 7 project, since participating in the Need  
23 Determination proceedings and in subsequent Nuclear Power Plant Cost Recovery

1 proceedings for these units. I am also well-informed on the subject of the  
2 Westinghouse AP 1000 reactor referenced by FPL in its COLA, beginning with  
3 its Design Certification review when I was on the NRC, and continuing reviews  
4 after I left the Commission. I have reviewed FPL's project approach to the  
5 management and licensing of the Turkey Point proposed units, as described in  
6 detail in the Direct Testimony of Steven Scroggs, FPL's Senior Director for  
7 Project Development for the Turkey Point 6 & 7 project, filed with the  
8 Commission prior to 2015 and on this date. I have also discussed FPL's licensing  
9 approach and related project management issues with Mr. Scroggs, Mr. Maher  
10 (Senior Director Licensing), and other FPL personnel, including reviewing  
11 correspondence from the NRC to FPL related to the schedules of its  
12 environmental and safety reviews for the Turkey Point 6 & 7 project. Finally, I  
13 am cognizant of past and ongoing NRC reviews of other COL applications, and of  
14 key regulatory issues important to the timely licensing of the Turkey Point Units 6  
15 and 7.

16 **Q. Was FPL's approach to the continued pursuit of a COL for the Turkey Point**  
17 **6 & 7 project in 2014 prudent?**

18 A. Yes. Based on my review, the decisions and management approaches used by  
19 FPL during 2014 were prudent and consistent with a reasonable strategy for  
20 pursuing the licensing of the proposed Turkey Point 6 & 7 project.

21 **Q. Please discuss what major events or issues have recently challenged the**  
22 **NRC's capability to conduct their licensing processes?**

1 A. Since March 2011, there have been three major issues that have challenged the  
2 NRC's capability to orderly discharge their licensing obligations for nuclear  
3 power plants. These three major events or issues are: Japan's Fukushima multi-  
4 reactor event following a beyond-design-basis tsunami and the subsequent follow-  
5 up by the NRC to use a Lessons Learned approach for assuring the continuing  
6 safety of U.S. nuclear power plants; the suspension of licensing and the major  
7 generic environmental work conducted to respond to the U.S. Court of Appeals  
8 for the D. C. Circuit's order on the safety of spent fuel storage and the so-called  
9 Waste Confidence Rule; and the suspension and re-activation of the Yucca  
10 Mountain licensing proceedings. Each of these issues required significant  
11 redirection of NRC staff and Commission involvement and, therefore, challenged  
12 the effective and efficient licensing processes for nuclear power plants. A short  
13 summary of the status of each one of these issues is provided below.

- 14
- 15 • Status of NRC regulatory actions related to Fukushima: The vast majority of the  
16 NRC regulatory actions on the Fukushima Lessons Learned concerned operating  
17 reactors. The impacts on new reactor licensing are more easily addressed, and are  
18 mostly restricted to areas of seismic and flooding protection, blackout protection,  
19 fuel pool instrumentation and emergency response. The overriding criteria are to  
20 maintain cooling to the core, the containment, and the spent fuel pool. The NRC  
21 continues to recognize that the AP 1000 passive-safety reactor selected for the  
22 Turkey Point Units have significant safety enhancements inherent to the design  
23 addressing the safety criteria, and would only require appropriate improvements

1 in well-defined areas. Presently, the action matrix to address the Fukushima-  
2 related issues for the AP 1000 appears completed and no further licensing  
3 schedule impacts are expected from this issue for Turkey Point.

4

5 • Status of the Waste Confidence Rule: As anticipated, the NRC issued a final rule  
6 on the remanded Waste Confidence Rule on August 26, 2014. The ruling, made  
7 effective after publication in the Federal Register on September 19, 2014,  
8 effectively resolves the issues on the storage of spent fuel and ends the power  
9 reactor licensing suspension. The new rule, re-named the “Continued Storage of  
10 Spent Nuclear Fuel Rule”, adopts the findings from the NRC generic  
11 environmental impact statement; it establishes that spent nuclear fuel can be  
12 safely managed in dry casks for the short term (up to 60 years), the long term  
13 (another 100 years), and for indefinite time frames. The new rule does not rely on  
14 the availability of a repository for the safe storage of spent fuel. Therefore, the  
15 regulatory issue is presently resolved and no longer presents an impediment for  
16 the licensing of Turkey Point Units 6 and 7.

17

18 • Status of the Yucca Mountain Licensing Review: Since 2010, the review of the  
19 Yucca Mountain licensing application has been stopped and then restarted, with  
20 complex legal and budgeting issues complicating progress, and consequently  
21 caused instabilities in NRC’s staffing assignments. On October 16, 2014, the  
22 NRC issued the very important Volume 3 of the Yucca Mountain Safety  
23 Evaluation Report (“SER”), “finding that the Department of Energy’s repository

1 design meets the requirements that apply after the repository is permanently  
2 closed, including but not limited to the post-closure performance objectives in  
3 NRC's regulations" (NRC News, 10/16/2014). On December 18, 2014, the staff  
4 issued Volume 4 (Administrative and Programmatic Requirements) of the SER,  
5 and on January 29, 2015 the staff issued the final parts of the review, Volume 2  
6 (Repository Safety Before Permit Closure) and Volume 5 (Proposed Conditions  
7 and License Specifications), which completed the SER. Although the future of  
8 Yucca Mountain is still in doubt, the work done resolved a significant part of the  
9 overload on the NRC staff, and allows for the resumption of more standard review  
10 schedules.

11  
12 In summary, the above-discussed regulatory issues are resolved to the point that  
13 they no longer present a challenge to the licensing of Turkey Point Units 6 and 7.

14 **Q. Is the new NRC estimated schedule for the issuance of the Turkey Point**  
15 **Units 6 and 7 COL license reasonable?**

16 A. Yes. The NRC staff had previously identified issues affecting staff's ability to  
17 complete its safety review in areas of geology, seismology and geotechnical  
18 engineering, and in identifying alternative sites as an issue impacting the  
19 environmental review. FPL committed to address these concerns, performed  
20 pertinent site investigations supporting their RAI responses and developed an  
21 approach addressing the alternative site issues to conform to requirements by the  
22 NRC and USACE. With letters on April 17, 2014 and August 26, 2014, the NRC  
23 notified FPL that the Staff had received sufficient information to proceed with the

1 COLA and to provide new schedules for the safety and environmental reviews.  
2 Upon evaluation of the proposed safety and environmental review schedules, and  
3 the diligence of the FPL staff in closing out key areas of interest raised by the  
4 NRC staff, it is my opinion that these schedules are presently on track to meet the  
5 milestones. The new schedules call for a final EIS issued to the Environmental  
6 Protection Agency by February 2016 and a final SER by October 2016. Both  
7 dates are supportive of an estimated December 2016 - March 2017 issuance of the  
8 COL. I believe that it is reasonable to expect issuance of a COL to FPL's Turkey  
9 Point Units 6 and 7 by those dates.

10 **Q. Are there other NRC regulatory issues that FPL is monitoring?**

11 A. Yes. FPL continues to monitor progress on the design finalization, and especially  
12 on issues that could require review and approval by the NRC prior to issuance of  
13 the COL. FPL's COLA application is part of the AP 1000 Design Centered  
14 Review Process, with the Levy project as the lead COL. Presently, issues with  
15 Interim Staff Guidance 11 design changes to the control room and the condensate  
16 return feature are being analyzed, as well as how FPL can benefit from this work  
17 for the Levy COL. Another issue that is being monitored for the potential to  
18 impact regulatory licensing or inspection activities within the AP 1000 Design-  
19 Centered Working Group is the Instrumentation and Control (I&C) Systems  
20 Design Acceptance Criteria (DAC). The I&C systems at both the Vogtle and  
21 Summer reactor projects will be first-of-a-kind; it is expected that the issues  
22 resolved by their DAC would be complete enough to benefit the Turkey Point  
23 units. However, the complexity of the I&C systems and the lengthy regulatory

1 reviews for its acceptance deserve the consistent attention being given by the FPL  
2 staff. Finally, the NRC staff is trying to make improvements to 10 CFR Part 52  
3 and specifically to the clarity of AP 1000 Design Certification Document  
4 information, reducing ambiguity that could impact the extent of NRC review  
5 during construction. FPL staff continues to monitor these issues to increase the  
6 predictability of the Turkey Point 6 & 7 COL issuance.

7 **Q. Is it feasible for FPL to receive a COL to pursue construction and operation**  
8 **of Turkey Point 6 & 7?**

9 A. Yes. I am confident that FPL will receive a COL license by March 2017,  
10 satisfying NRC requirements for public health and safety, the environment and  
11 the common defense and security.

12 **Q. Does this conclude your direct testimony?**

13 A. Yes.

*Dr. Nils J. Diaz is the Managing Director of The ND2 Group, an expert and policy advisor group with a strong focus on the national and international nuclear power development and deployment arena, including new and existing plant licensing, regulatory, financial, policy and communications issues, and the Chief Strategic Officer of Blue Castle Holdings, Inc. The ND2 Group is presently or was recently engaged by governments developing new nuclear options and infrastructure, a major nuclear reactor vendor, US nuclear utilities, international engineering/ consulting firms, and the U.S. Department of Energy. He also provides developmental policy advice to OECD's Nuclear Energy Agency, and serves on two Boards of Directors. He recently served as a Commissioner, Florida Energy and Climate Commission, October 2008-October 2010.*

*Nils Diaz is a past Chairman of the U.S. Nuclear Regulatory Commission (NRC). Dr. Diaz was designated Chairman of the NRC by President Bush on April 1, 2003 and he served as such until his retirement from government service on June 30, 2006. As Chairman of the NRC, Dr. Diaz served as the principal executive officer of and the official spokesman for the NRC, and had ultimate authority for all NRC functions pertaining to an emergency involving an NRC license; he was directly responsible for all high level interactions with the US Executive Branch and the Congress, as well as the international relationships and the policy development under NRC's charter, including the nuclear security policies and implementation of nuclear plants safety enhancements after 9/11. Dr. Diaz was first nominated by President Clinton and confirmed by the Senate as a Commissioner with the NRC in August 1996, nominated by President Bush and confirmed by the US Senate again in 2001, and exercised the responsibilities of the position until he assumed the Chairmanship of the Commission. As Chairman, he was responsible for the exercise and direction of the Commission's policy-making, licensing and regulatory functions, and employed practical managerial, technical, and entrepreneurial skills to effect changes that enhanced new reactor licensing, license renewal, reactor oversight, enforcement and licensing processes, security and adjudication. Dr. Diaz created and implemented a multi-national initiative to improve the process for safety certification of reactors; the Multinational Design Evaluation Program continues under the umbrella of the Nuclear Energy Agency, OECD.*

*Prior to his appointment to the NRC, Dr. Diaz was the Director (1985-1996) of a national consortium for advanced nuclear power and propulsion (INSPI) for the Ballistic Missile Defense Organization (BMDO), Department of Defense, Professor of Nuclear Engineering Sciences at the University of Florida (1969-1996, and Dean for Research at CSULB (1984-1986). As a Director for BMDO, he exercised prime contractor management and Lead Scientist responsibilities for a diverse group of industries (including Aerojet, Boeing, Pratt & Whitney, Hughes Electronics, Rocketdyne and SRI), several national laboratories (including Los Alamos NL, Sandia NL, and Lawrence Livermore NL) and seven major universities, under contracts with the Department of Defense, the Defense Nuclear Agency, the Department of Energy and NASA. From 1969*

*to 1996, Dr. Diaz held senior positions at universities, Boards and industry, and consulted for the U.S. Government and other governments on civilian nuclear energy development. He also owned six small corporations serving the nuclear industry and government during that period, and spent six years at nuclear utilities and reactor vendors, often troubleshooting technical and management performance issues. He lived in Europe in 1981-1982, while serving as Principal Advisor to Spain's Consejo de Seguridad Nuclear, and consulting for nuclear industries and vendors in other European countries.*

*Dr. Diaz is internationally recognized for his broad expertise and contributions to nuclear sciences, reactor systems and fuels, to the regulation of nuclear facilities and radioactive materials, to the development of nuclear policy and deployment infrastructure. He has worked extensively in the international arena, including interacting and contributing to major policy, fora and decision-making efforts focusing on energy infrastructure development.*

*Dr. Diaz has published over 70 refereed technical articles and has participated in more than 200 international forums on nuclear energy, sciences and technology. He has been recognized worldwide for his statesmanship on nuclear affairs, including chairing the G8Nuclear Summit in Russia and leading the US Delegation to the International Atomic Energy Agency General Conference in 2005. He has received many national and international awards, including the Henry DeWolf Smyth 2008 Nuclear Statesman Award, awarded by the Nuclear Energy Institute, representing the nuclear industry, and by the American Nuclear Society. Dr. Diaz has been elected a Member of the Hispanic Hall of Fame and recognized as one of the top 50 Hispanics in Sciences and Engineering, and was named the National Hispanic Scientist of the Year for 2009.*

*Dr. Diaz holds a Ph.D. and M.S. in Nuclear Engineering Sciences from the University of Florida, and a B.S. Degree in Mechanical Engineering from the University of Villanova, Havana. He was licensed as a Senior Reactor Operator by the NRC and has formal training and practice in health physics, radiological sciences and nuclear medicine. He is a Fellow of the American Nuclear Society, the American Society of Mechanical Engineers, and the American Association for the Advancement of Sciences. He recently chaired the ASME Presidential Task Force in response to the Fukushima accidents.*

*February 2015*

**CERTIFICATE OF SERVICE  
DOCKET NO. 150009-EI**

I HEREBY CERTIFY that a true and correct copy of the foregoing testimony and exhibits was served electronically this 2nd day of March, 2015, to the following:

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