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September 4, 2025

-VIA ELECTRONIC FILING-
Adam Teitzman
Division of Commission Clerk
Florida Public Service Commission
2540 Shumard Oak Blvd.
Tallahassee, FL 32399-0850

Re: Docket No. 20250001-EI

Dear Mr. Teitzman:

Attached for electronic filing in the above docket are the prepared testimony of Florida Power & Light Company ("FPL") witness Daniel DeBoer. This testimony is submitted in support of FPL's Petition for Approval of its Levelized Fuel Cost Recovery Factors and Capacity Cost Recovery Factors for January 2026 through December 2026.

Please feel free to contact me with any questions regarding this filing.

Sincerely,

s/ David M. Lee
David M. Lee

Attachments
cc: Counsel for Parties of Record (w/ attachments)

CERTIFICATE OF SERVICE
Docket No. 20250001-EI

I HEREBY CERTIFY that a true and correct copy of the foregoing has been furnished by electronic service on this 4th day of September 2025 to the following:

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BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

FLORIDA POWER & LIGHT COMPANY

TESTIMONY OF DANIEL DEBOER

DOCKET NO. 20250001-EI

SEPTEMBER 4, 2025

Q. Please state your name and address.

A. My name is Daniel DeBoer. My work business address is 15430 Endeavor Drive, Jupiter, Florida 33478.

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

A. I am employed by Florida Power & Light Company ("FPL or the Company") as Vice President Nuclear Long-Range Strategy & Execution.

Q. Have you previously filed testimony in this docket?

A. Yes.

Q. What is the purpose of your testimony?

A. My testimony presents and explains FPL's projections of nuclear fuel costs for the thermal energy to be produced by our nuclear units measured in Million British Thermal Units or ("MMBtu") for 2026. Nuclear fuel costs were input values to the GenTrader model that is used to calculate the costs included in the proposed fuel cost recovery factors for the period January 2026 through December 2026. I am also supporting FPL's projected 2026 incremental plant security and Fukushima-related costs. Additionally, my testimony discusses unplanned outages that occurred at the nuclear power plants and over the period from August 2024 through July 2025.

Q. Aside from planned maintenance outages, does FPL project that its nuclear units will achieve 100% availability?

A. No, it does not. No nuclear plant in the industry projects 100% availability. Nuclear plants are complex industrial facilities that consist of dozens of interdependent systems, hundreds of major components, tens of thousands of sub-components, tens of thousands of tubes, miles of piping and many redundant safety features. FPL continuously improves the physical plant, procedures, and processes to improve reliability and maintain nuclear safety. However, even when prudent actions are taken, FPL's nuclear units – like all nuclear units in the industry – experience equipment failures and unplanned outages. My testimony describes outages that warrant further explanation for the Florida Public Service Commission.

Nuclear Fuel Costs

Q. What is the basis for FPL's projections of nuclear fuel costs?

A. FPL's nuclear fuel cost projections are developed using projected energy production at its nuclear units and current operating schedules for the period January 2026 through December 2026.

Q. Please provide FPL's projection for nuclear fuel unit costs and energy for the period January 2026 through December 2026.

A. FPL projects the nuclear units will burn 293,925,680 MMBtu of energy at a cost of $0.5541 per MMBtu for the period January 2026 through December 2026. Projections by nuclear unit and by month are listed in Schedule E-3 of Exhibit AM-5, which is attached to FPL witness Mohomed's testimony.

Nuclear Plant Incremental Security Costs

Q. What is FPL's projection of incremental security costs at its nuclear power plants for the period January 2026 through December 2026?

A. FPL projects that it will incur $32.4 million in incremental nuclear power plant security costs in 2026. The costs consist of $2.0 million of capital expenditures and $30.4 million of O&M expenses.

Q. Please provide a brief description of the items included in incremental nuclear power plant security costs.

A. The projection includes the additional costs incurred in maintaining a security force as a result of implementing the NRC's fitness-for-duty rule under 10 CFR Part 26, which strictly limits the number of hours that nuclear security personnel may work; additional personnel training; maintenance of the physical upgrades resulting from implementing the NRC's physical security rule under 10 CFR Part 73; and impacts of implementing the NRC's cyber security rule under 10 CFR Part 73. It also includes force-on-force modifications at the St. Lucie and Turkey Point nuclear sites to effectively mitigate new adversary tactics and capabilities employed by the NRC's Composite Adversary Force, as required by NRC inspection procedures.

Fukushima-Related Costs

Q. What is FPL's projection of Fukushima-related costs at its nuclear power plants for the period January 2026 through December 2026?

A. FPL's current projection of Fukushima-related costs for 2026 is approximately $945 thousand in O&M expenses.

Q. Please provide a brief description of the items included in this projection of Fukushima-related costs.

A. The projection includes FPL's share of costs incurred for equipment, storage, and transportation, to support the shared Regional Response Centers (a warehouse of off-site portable equipment shared by the industry).

Unplanned Outage or Downpower Events

Q. Please describe the unplanned outages or downpowers at FPL's nuclear plants from August 2024 through July 2025 for which FPL wishes to provide further information.

A. On October 12, 2024, Turkey Point Unit 3 was manually removed from service due to a condenser tube leak. On December 4, 2024, Turkey Point Unit 3 automatically tripped due to a reactor protection equipment instrumentation failure. Lastly, on June 21, 2025, Turkey Point Unit 4 automatically tripped due to a bus-lockout of a vital 4kV bus in response to an overcurrent condition sensed from the associated Emergency Diesel Generator. FPL's responses to the unplanned outage events were prudent and efficient, and the units were returned to service safely. More details are described below.

October 12, 2024, Turkey Point Unit 3

Q. Please describe the circumstances related to the October 12 event.

A. On October 12, 2024, Turkey Point Unit 3 experienced elevated steam generator sodium and chloride concentration due to a through-wall leak of a 3AS main condenser tube. This leak was of sufficient magnitude that it initially required a controlled power reduction and then a subsequent unit shutdown per procedural requirements.

Q. What did the investigation of the condenser tube leak find?

A. An unidentified defect in the affected tube was introduced during fabrication of the 3AS condenser water box assembly installed in 2013. Previous preventive maintenance activities, i.e., eddy current testing, determined this tube did not meet any established plugging criteria and therefore the tube was not plugged.

Q. What actions were taken to address this finding?

A. The affected condenser tube was removed and plugged. The tube was sent for forensic analysis which determined the failure occurred during fabrication. The unit was safely returned to service within approximately seven days.

Q. What actions does FPL plan to take to prevent recurrence?

A. The inspection and repair, as needed, of the Unit 3 (and Unit 4 – Extent of Condition) condenser tube bundles will occur at the next refueling outage. Additionally, the Turkey Point condensers Eddie Current Testing (ECT) technical requirements sheets were revised to include complex ECT signal measurements as potential tube plugging criteria to ensure reliability for the future.

December 4, 2024, Turkey Point Unit 3

Q. Please describe the circumstances related to the December 4 event.

A. On December 4, 2024, Turkey Point Unit 3 automatically tripped offline due to an unanticipated Reactor Protection System channel failure coincident with a redundant Reactor Protection System channel that was also out of service for planned surveillance testing.

Q. What did the investigation of the Reactor Protection Channel Failure find?

A. The Reactor Protection System Channel 2 loop calculation processor and associated data link handler printed circuit board cards randomly failed while within their expected useful life.

Q. What actions were taken to address this failure of the Reactor Protection System?

A. The failed cards in the Reactor Protection System channel loop processor subsystem were replaced with new circuit cards. Other similar circuit cards were evaluated and determined to have a prudent maintenance strategy. The unit was safely returned to service within approximately three days.

Q. What actions does FPL plan to take to prevent recurrence?

A. While the risk of a recurrence of this condition cannot be completely eliminated, the amount of time the unit is in a single point vulnerability condition to a unit trip during testing was evaluated to minimize the time the unit is in this condition. The applicable procedures were revised to implement these improvements. This would not have necessarily prevented the trip but will minimize the time the unit is vulnerable to the trip condition.

June 21, 2025, Turkey Point Unit 4

Q. Please describe the circumstances related to the June 21 event.

A. During the performance of the 4A Emergency Diesel Generator (EDG) post maintenance testing, Turkey Point Unit 4 reactor automatically tripped because of a 4A 4kv bus lock-out. The bus lock-out was caused by the bus protective relay scheme in response to an overcurrent condition sensed from the EDG.

Q. What did the investigation of the trip find?

A. An existing testing procedure provided general guidance for placing and removing a relay positioning hold during testing of alarms. This is considered "skill of the craft" and repeated on multiple relays. The investigation determined the blocking mechanism remained in place on one of the voltage balance relays, keeping the relay in an actuated state. This issue alone would not have caused the bus lock-out and subsequent reactor trip. The presence of a blown fuse was discovered in the 4A 4kV bus voltage reference circuit, resulting in a missing phase of reference voltage. Both conditions were necessary to facilitate the bus lock-out. There were no discernable ties to identify that a blown fuse existed in the circuit.

Q. What actions were taken to address this issue?

A. The blocking device was removed to restore the electrical circuit. Necessary testing to restore operability of the bus and the diesel generator was performed prior to unit restart. Additionally, the failed fuse was replaced to restore the sensing circuit. The unit was safely restored to service in approximately five days.

Q. What actions will FPL take to prevent reoccurrence?

A. A non-conductive, high-visibility tool (wedge) for EDG Voltage Balance Relay testing is being fabricated. Also, the testing procedure is being revised to require use of this tool. Training sessions will also be conducted with the team to ensure the proficiency of workers installing this device.

Q. Does this conclude your testimony?

A. Yes.