FPL.

L-2013-100
10 CFR 52.3

March 26, 2013

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555-0001

Re: Florida Power & Light Company
Proposed Turkey Point Units 6 and 7
Docket Nos. 52-040 and 52-041
Response to NRC Request for Additional Information Letter 120830 (eRAI 6353 Rev. 2) Related to ESRP Section 9.3.1 Alternative Site Selection Process

Reference:

1. NRC Letter to FPL dated August 30, 2012, Environmental Request for Additional Information Letter 120830 Related to Environmental Standard Review Plan Section 9.3.1, Alternative Site Selection, for the Combined License Application Review for Turkey Point Units 6 and 7

2. FPL Letter L-2012-369 dated October 15, 2012, Schedule for Response to NRC Request for Additional Information Letter 120830 (eRAI 6353 Rev. 2) Related to ESRP Section 9.3.1 Alternative Site Selection Process

3. FPL Letter L-2013-008 dated January 10, 2013, Revised Schedule for Response to NRC Request for Additional Information Letter 120830 (eRAI 6353 Rev. 2) Related to ESRP Section 9.3.1 Alternative Site Selection Process

4. FPL Letter L-2013-053 dated February 12, 2013, Revised Schedule for Response to NRC Request for Additional Information Letter 120830 (eRAI 6353 Rev. 2) Related to ESRP Section 9.3.1 Alternative Site Selection Process

Florida Power & Light Company (FPL) provides, as an attachment to this letter, its response to the Nuclear Regulatory Commission's (NRC) Request for Additional Information (RAI) EIS 9.3.1-10 provided in Reference 1. FPL provided schedules for the RAI response in References 2, 3 and 4. The response incorporates clarifications concluded at the NRC public meeting held on December 7, 2012. The attachment identifies changes that will be made in a future revision of the Turkey Point Units 6 and 7 Combined License Application (if applicable).

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NRD

If you have any questions, or need additional information, please contact me at 561-691-7490.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on March 26, 2013.

Sincerely,

William Maher
Senior Licensing Director – New Nuclear Projects

WDM/RFO

Attachment: FPL Response to NRC RAI EIS 9.3.1-10 (eRAI 6353 Rev. 2)

cc:
PTN 6 & 7 Project Manager, AP1000 Projects Branch 1, USNRC DNRL/NRO
Regional Administrator, Region II, USNRC
Senior Resident Inspector, USNRC, Turkey Point Units 3 & 4

NRC RAI Letter No. 120830 Dated August 30, 2012

SRP Section: EIS 9.3.1 – Alternative Site Selection Process

Question from Environmental Projects Branch 1 (EPB1)

NRC RAI Number: EIS 9.3.1-10 (eRAI 6353)

Please provide the impact analyses of the consequences of transporting fill to the St Lucie site.

> Background. (FPL Response to NRC RAI No. 9.3-9; RAI 5589, L-2011-395 Attachment 5, Letter #1104121, dated 9/30/11.) The response indicates that 393,000 truckloads of fill would be used if two new reactors were built on the St. Lucie site. As the impacts of the transportation of this fill needs to be assessed in the EIS, please identity a specific source(s) of such fill and the analysis of the impacts of this volume of truck traffic between the source location and the site.

FPL RESPONSE:

Analysis Assumptions

For purposes of the transportation analysis, although no specific source has been identified, it is assumed that borrow material for St. Lucie would be obtained from one or more commercial fill sources located within 75 miles of, and generally south and southwest of, the site. To provide an upper bound, the analysis of transportation impacts is focused on areas along the route where fill transportation would have the greatest effect, i.e., at funneling points near the St. Lucie site. Roads nearer the fill source(s) are assumed to be in rural areas that could include multiple routing options with less adverse impacts from transport activities.

The following assumptions were used in the analysis. As noted in each description, each assumption provides for an upper bounding analysis of transportation impacts:

1. All fill deliveries would be by truck. Given that the site also has the potential for direct barge access within site boundaries, fill delivery by barge would be another transportation option; in the event fill was delivered using some combination of barge and truck, fewer truck deliveries would be required which would result in reduced traffic impacts from transport activities.

2. 393,000 deliveries would require approximately 30 truck deliveries to the site per hour over a five-year period, assuming a 10-hour work day five days per week. This assumption is consistent with the assumption made for Turkey Point of a maximum of 36 truck deliveries to the site per hour, as identified in ER Section 4.4.2.2.4.1. Larger capacity trucks (greater than 15 cubic yards), greater than 10-hour work days, greater than 5 day work weeks, or an extended duration beyond 5 years would result in fewer trips per hour.

3. Some period of fill deliveries would occur before the proposed road expansion (from two to four lanes along A1A and connector routes) begins or would overlap with proposed road

widening/construction activities. Actual traffic impacts after road widening was completed would be less than those analyzed, due to the resulting higher road capacity. Although the delivery logistics could be affected during the period when fill deliveries might overlap with road widening/construction activities due to the potential for reduced speed limits and temporary lane closures, etc., it has been assumed that the total number of deliveries would be maintained to support the plant construction schedule.

4. Some period of fill deliveries would overlap with plant construction and contribute to potential cumulative impacts with the commuting construction workforce. While construction workers would commute to the site from both the north and south along A1A, a larger percentage currently commute from the south based on commuting patterns of the current operations workforce at St. Lucie (this is consistent with current transportation analysis in ER Subsection 9.3.3). As such, the analysis assumes that 100% of fill deliveries would arrive at the site from the south to address potential cumulative impacts with the larger commuting workforce. In the event fill was delivered from both the north and south directions of the site, the total number of truck trips (coming and going) would be split between two routes thereby, reducing impacts in any one direction.

In response to the NRC clarification request made at the February 1, 2013 NRC-FPL public teleconference (Reference 3), the following table is provided identifying ER assumptions adopted to estimate fill delivery logistics for the Turkey Point and St. Lucie sites. A direct comparison of fill delivery rates is not appropriate as an *assumed maximum rate* (36 trucks per hour) was applied at Turkey Point, whereas a *calculated average rate* (30 trucks per hour) was applied at St. Lucie.

Fill Delivery Logistics Assumptions for the St. Lucie and Turkey Point Sites

St. Lucie Site	***Turkey Point Site***
Estimated Fill Volume	
5.9 m yd^3 - scaled from estimated fill volume developed for Turkey Point (7.8 m yd^3) based on comparison of estimated elevation change requirements at each site, consistent with response to RAI 9.3.-9 (eRAI 5589). Note: estimated fill volume is for the plant area only.	7.8 m yd^3 (plant area only)
Fill Delivery Logistics	
Fill would be delivered by trucks with a 15 cubic yard capacity, requiring 393,000 deliveries (5.9 m yd^3/15 yd^3/truck), consistent with response to RAI 9.3-9 (eRAI 5589).	Fill would be delivered by trucks with a 15 cubic yard capacity, requiring 520,000 deliveries (7.8 m yd^3/15 yd^3/truck)

Fill Delivery Logistics Assumptions for the St. Lucie and Turkey Point Sites

St. Lucie Site	***Turkey Point Site***
Fill delivery would occur over a 5-year delivery period, with at least some portion overlapping with the peak construction period, to bound the traffic analysis.	Fill delivery would occur over an estimated 6-year delivery period, with at least some portion overlapping with the peak construction period, to bound the traffic analysis.
Fill delivery would occur 52 weeks per year, 5 days per week, and 10 hours per day.	Fill delivery would occur 52 weeks per year, 5 days per week, and 10 hours per day.
The average delivery rate given the parameters above is 30 trucks per hour: 393,000 truck deliveries/(5 years x 52 weeks per year x 5 days per week x 10 hours per day).	The average delivery rate given the parameters above is 33 trucks per hour: 520,000 truck deliveries/(6 years x 52 weeks per year x 5 days per week x 10 hours per day). The truck delivery rate is similar to St Lucie but over a longer duration due to the required fill volume. The trucks per hour rate may vary based on truck capacities, fill source capabilities, work schedules, and overall durations of fill activities. The maximum delivery rate of 36 trucks per hour is based on limiting factors related to delivery logistics for scheduling and unloading, handling of arriving trucks, and limiting impacts to traffic congestion associated with fill deliveries.

Impacts of Deliveries of Fill Material to the St. Lucie Site

The available capacity of relevant roads was compared with projected truck traffic for delivery of fill material at other than peak construction commute times. A total of 30 truck deliveries of fill per hour would equate to 60 total trips (coming and going) per hour. Consistent with the comparison made for Turkey Point in ER Section 4.4.2.2.4.1 relating to fill impacts (given the flat terrain also found in St. Lucie County), a standard of one large truck equivalent to 1.5 passenger cars was used. As referenced in the ER Rev 3, Section 9.3.3.4.6.5, the Florida Department of Transportation (FDOT) reports that the Average Annual Daily Traffic (AADT) and directional peak hour volume on State Route A1A at a traffic monitoring point one-half mile south of the site to be 4,700 vehicles per day, and 273 vehicles per hour respectively. This directional peak hour volume classifies the southern portion of the roadway as a Level of Service (LOS) C, with a remaining peak hour capacity of 147 vehicles.

The NRC applied significance levels to the LOS classifications that were projected to result from the additional traffic associated with refurbishment activities at nuclear plants (Reference 1). FPL considers this approach to be appropriate for construction of a nuclear plant since both plant refurbishment and new plant construction would be large construction projects.

NRC associates small impacts with LOS A and B, moderate impacts with LOS C and D, and large impacts with LOS E and F.

If all fill trucks arrive and depart to the construction site via A1A from the south of the site, the available peak hour capacity would decrease by 90 (60 trucks X 1.5 passenger vehicles) on this roadway (leaving a peak hour capacity of 57 to accommodate commuting construction workers); and the AADT count would increase by 900 vehicles per day equivalent (90 vehicles x 10 hours), which is an increase of nearly 20% (900 / 4700). This represents a significant increase in traffic volume from fill transport alone for both peak flow and the AADT. The traffic attributable to other construction material deliveries and commuting construction workers could cause additional congestion on State Road A1A during certain times of the day. Given the current LOS C, which is described as a stable flow that marks the beginning of the range of flow in which the operation of individual users is significantly affected by interactions with the traffic stream (Reference 1), and an incremental increase in the average daily vehicle count of nearly 20% attributable to fill transport alone, the impact of fill deliveries on existing traffic levels would be MODERATE and likely warrant mitigation.

Cumulative Impacts with Construction Workforce Commuters and Other Construction Deliveries

As reported in the ER Rev 3 Section 9.3.3.4.6.5 (Transportation), which describes transportation impacts from commuting construction workers at St. Lucie, construction at the St. Lucie site would add 1,507 vehicles during the peak hour to the southern portion of State Road A1A. This traffic volume would cause the road to exceed capacity and drop the southern roadway to LOS classification of E. A LOS classification of E is described as having operating conditions at or near capacity level causing low but uniform speeds and extremely difficult maneuvering that is accomplished by forcing another vehicle to give way; small increases in flow or minor perturbations will cause breakdowns (Reference 1). It is further assumed that the revised LOS E would hold during the afternoon peak traffic period - when the arriving second shift construction workers, the departing first shift construction workers, and the additional traffic attributable to deliveries of fill material (90 trucks per hour) and other construction material deliveries all overlap. Based on this analysis, it is likely that the additional traffic volumes associated with project construction would pose significant delays along State Road A1A. Based on the significance levels NRC applies to the LOS classifications, it is therefore anticipated that the cumulative impact of the construction workforce, and deliveries of fill material and other construction materials on transportation during peak commuter traffic periods would be LARGE.

Traffic Mitigation Measures

To mitigate impacts of the additional traffic (primarily from the commuting construction workers), State Road A1A could be widened to a four-lane highway, and acceleration/deceleration lanes could be added to facilitate commuter traffic; it would also help reduce the added congestion from fill and other construction material deliveries during peak and especially during non-peak hours. These roadway modifications would be needed along State Road A1A between Seaway Drive to the north and NE Causeway Boulevard to the south, particularly in the vicinity of the St. Lucie site. If such expansion were completed before

fill deliveries began, the traffic impacts from fill deliveries would be expected to be significantly reduced (e.g., to SMALL during non-peak rush hours).

In order to avoid replacing the bridges over the Intracoastal Waterways, the following two options could be explored: 1) Allow some level of congestion during 2-hours of the day. This will have to be negotiated with St. Lucie County and/or the Florida Department of Transportation and/or 2) Re-stripe the bridge to a 3-lane section as opposed to the existing 2 lanes with bicycle lanes. The temporary 3-lane section would operate with two eastbound lanes during the AM peak hour and with two westbound lanes during the PM peak period (the center lane will function as a reversible lane).

Other Areas of Impact and Mitigation

The fill transport activities would cause temporary and localized physical impacts such as increased air emissions (vehicle exhaust and fugitive dust) and noise levels along the transport route.

Noise from the increase in traffic by fill transport (and the commuting construction workforce) would occur on existing roadways as well as the road extensions once they are completed. The noise generated by increased truck traffic would be short term; in addition, fill deliveries could be scheduled to occur only during daylight hours during the construction phase.

Sound intensity generally decreases in proportion with the square of the distance from the source. In general, traffic noise is not usually a serious problem more than 500 feet away from a heavily traveled road or more than 100 to 200 feet from lightly traveled roads (Reference 2). Traffic noise levels also are reduced by terrain, vegetation, and natural and manmade obstacles as a person moves away from a highway. Existing barriers (e.g., vegetation and buildings) or new barriers (e.g., vegetation, man-made walls) could be used to help deflect noise from neighborhood residents. However, for those residences and businesses located at street level directly along A1A, fill transport could increase disruption to neighborhoods, business and recreational opportunities (given proximity of coastal area/beaches) during the construction period. For example, heavy road traffic could be more disruptive to street-side and frontyard activities such as socializing, walking or biking. Inside the home, traffic noise has been linked to sleep disturbance. Elevated traffic noise from fill deliveries could also further impede pedestrian travel, such as by making street crossings more hazardous for pedestrians who need to listen for oncoming traffic.

Even if absolute noise levels are moderate to low, intermittent traffic noise may intrude on neighboring land uses that require a tranquil setting, such as houses of worship, funeral homes, nursing homes, schools, or hospitals. In the event that some critical receptors were close enough for fill deliveries to interfere with daily activities (e.g., outdoor speech communication), additional measures could be implemented (e.g., scheduling) to minimize adverse effects.

Good road conditions and appropriate speed limits would reduce the air emissions and noise level generated by the fill delivery trucks and site workers that travel to and from the site.

Noise emissions also would be within EPA's emission level standards for newly manufactured medium and heavy trucks (with gross vehicle weight rating greater than 10,000 pounds).

Heavy truck traffic would generate exhaust emissions including carbon monoxide and particular matter, as well as fugitive dust from vehicular travel over paved roads. These increases in air emissions would be temporary and localized. Given that the geographic area surrounding the site, including the transport route, is in an area that is in attainment with respect to the National Ambient Air Quality Standards (NAAQS) and experiences windy conditions (good dispersal capabilities) due to its coastal location, impacts from vehicle exhaust emissions are expected to be SMALL.

The development of alternate routes (access to the St. Lucie site from both north and south directions) and alternate transportation modes (use barge for some deliveries) would reduce impacts relating to safety, air pollution, noise and quality of life related to industrial traffic. Noise levels could be monitored and efforts to decrease cumulative noise due to construction activities (nuclear plant and A1A expansion if overlapping), including increased truck traffic, could be undertaken.

This response is PLANT SPECIFIC.

References:

1. Generic Environmental Impact Statement for License Renewal of Nuclear Plants: Regarding St. Lucie Units 1 and 2 - Final Report (NUREG 1437, Supplement 11) May 2003.

2. Department of Transportation, Federal Highway Administration, 2010. *Highway Traffic Noise: Analysis and Abatement Guidance.* June. Available at: http://environment.transportation.org/environmental_issues/noise/docs_reports.aspx. Accessed October 23, 2012.

3. *Notice of Forthcoming Public Teleconference to Followup on Action Items from the December 7, 2012, Public Meeting Relating to the Alternative Sites Selection Process for Florida Power and Light's Turkey Point Units 6 and 7 Combined License Application*, January 17, 2013. ADAMS Accession No. ML13016A005.

ASSOCIATED COLA REVISIONS:

No COLA changes have been identified as a result of this response.

ASSOCIATED ENCLOSURES:

None