

## **PMTurkeyCOLPEm Resource**

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**From:** Williamson, Alicia  
**Sent:** Friday, August 31, 2012 11:05 AM  
**To:** Orthen, Richard  
**Cc:** Burton, William; TurkeyCOL Resource  
**Subject:** Alternative Sites RAIs (public)  
**Attachments:** ML12242A329.pdf

Rick  
Please see attached.  
Thanx  
Alicia

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**From:** Keith, Felicia  
**Sent:** Friday, August 31, 2012 9:47 AM  
**To:** [rw.bryce@pnnl.gov](mailto:rw.bryce@pnnl.gov); [megan.I.clouser@usace.army.mil](mailto:megan.I.clouser@usace.army.mil); [christina.d.storz@usace.army.mil](mailto:christina.d.storz@usace.army.mil); [Tom.L.Anderson@pnnl.gov](mailto:Tom.L.Anderson@pnnl.gov)  
**Cc:** Williamson, Alicia  
**Subject:**

TO: M. K. Nazar

FROM: Alicia Williamson

DATE: August 30, 2012

ADAMS Accession No.: ML1224A329

**Felicia Keith**  
Administrative Assistant  
Environmental Branch 1 (EPB1)  
Division of New Reactor Licensing  
Office of New Reactors  
301-415-2950

**Hearing Identifier:** TurkeyPoint\_COL\_Public  
**Email Number:** 628

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**Sent Date:** 8/31/2012 11:05:16 AM  
**Received Date:** 8/31/2012 11:05:19 AM  
**From:** Williamson, Alicia

**Created By:** Alicia.Williamson@nrc.gov

**Recipients:**

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Tracking Status: None  
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Tracking Status: None  
"Orthen, Richard" <Richard.Orthen@fpl.com>  
Tracking Status: None

**Post Office:** HQCLSTR02.nrc.gov

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**Sensitivity:** Normal  
**Expiration Date:**  
**Recipients Received:**

August 30, 2012

Mr. Mano K. Nazar  
Senior Vice President  
and Chief Nuclear Officer  
Florida Power and Light Company  
Mail Stop NNP/JB  
700 Universe Blvd.  
Juno Beach, FL 33408-0420

SUBJECT: 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

Dear Mr. Nazar:

By letter dated June 30, 2009, as supplemented by letters dated August 7, 2009, September 3, 2010, December 21, 2010, and December 16, 2011 Florida Power and Light Company (FPL) submitted its application to the U.S. Nuclear Regulatory Commission (NRC) for combined licenses (COLs) for two AP1000 advanced passive pressurized water reactors in accordance with the requirements contained in 10 CFR Part 52, "Licenses, Certifications and Approvals for Nuclear Power Plants." The NRC staff is performing a detailed review of this application to enable the staff to reach a conclusion regarding the environmental impacts of the proposed action.

The NRC staff has identified that additional information is needed to continue portions of the environmental review. The staff's request for additional information (RAI) is contained in the enclosure to this letter.

To support the review schedule, you are requested to respond within 45 days of the date of this letter. If you are unable to provide a response within 45 days, please state when you will be able to provide the response. In the event the response submitted is incomplete, please indicate in the response when the complete response will be provided. If changes are needed to the COL application, the staff requests that the RAI response include the proposed wording changes. Your response should also indicate whether any of the information provided is to be withheld as exempt from public disclosure pursuant to 10 CFR 2.390.

Mr. Nazar

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If you have any questions or comments concerning this matter, you may contact me at 301-415-1878 or via e-mail at [Alicia.Williamson@nrc.gov](mailto:Alicia.Williamson@nrc.gov).

Sincerely,

**/RA/**

Alicia Williamson, Environmental Project Manager  
Environmental Projects Branch 1  
Division of New Reactor Licensing  
Office of New Reactors

Docket Nos.: 52-040, 52-041

Enclosure:  
As stated

cc: w/enclosure see next page

Mr. Nazar

-2-

If you have any questions or comments concerning this matter, you may contact me at 301-415-1878 or via e-mail at [Alicia.Williamson@nrc.gov](mailto:Alicia.Williamson@nrc.gov).

Sincerely,

**/RA/**

Alicia Williamson, Environmental Project Manager  
Environmental Projects Branch 1  
Division New Reactor Licensing  
Office of New Reactors

Docket Nos. 52-040, 52-041  
eRAI Tracking No. 6353

Enclosure:  
As stated

cc: w/enclosure see next page

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**ADAMS Accession Number: ML12242A329**

NRO-002

<b>OFFICE</b>	PM:NRO:DNRL:EPB1	LA:NRO:DNRL:EPB1	BC:NRO:DNRL:EPB1
<b>NAME</b>	AWilliamson*	ARedden	WBurton (MHaque for)
<b>DATE</b>	8/30/12	8/29/12	8/30/12

**\*Approval captured electronically in the electronic RAI system.**

**OFFICAL RECORDS COPY**

**Request for Additional Information No. 6353 Revision 2**

**Turkey Point Units 6 and 7**

**Florida P and L**

**Docket No. 52-040 and 52-041**

**SRP Section: EIS 9.3.1 - Alternative Site Selection Process**

**Application Section: Section 9.3**

QUESTIONS for Environmental Projects Branch 1 (EPB1)

**EIS 9.3.1-1**

Please clarify whether or not the Augmented Site Selection Report supersedes the screening analyses in the ER. If only portions of the analyses in the ER are superseded, explain which portions are superseded and which are not.

Background. (FPL Response to NRC RAI No. 9.3.1-14; RAI 5588, L-2011-378 Dated 9/13/11: Response to NRC Environmental RAI Letter 1104071, Attachment 2). This response says "The regional screening process mentioned in the ER is superseded by a regional screening/candidate area identification process documented in the Augmentation Report (Reference 1)." However, the Augmented Site Selection Study Report (AA) dated August 2011, page 3 states "The AA does not supersede or replace analyses in the original Siting Report."

**EIS 9.3.1-2**

Using the 2000 and 2010 US Census data, please provide the population density for the census block groups containing and surrounding the St Lucie site. Additionally, please clarify the population density of St Lucie County.

Background. (FPL Response to NRC RAI No. 9.3.1-14; RAI 5588, L-2011-378 Dated 9/13/11: Response to NRC Environmental RAI Letter 1104071, Attachment 2). The AA Report dated August 2011, Table 3-1 Regional Screening Criteria - Population, excluded Census block groups where population density > 300 persons/mi<sup>2</sup> (psm). Page 11 of the AA Report, identifies the St Lucie plant site as CA-15, Coastal Existing Plant (St. Lucie); Fig A-3 appears to show this area as >300 psm. Page D-41 of the AA Report shows St Lucie County as 336.3 psm. The US Census website has St Lucie County at 485.7 psm per 2000 census. The FPL Response recalculates population density around St Lucie using the unpopulated ocean area in the calculation. "The population density calculation at a given point is based on total area within a 20-mile radius of the site, not land area alone. The total area within 20 miles of the St. Lucie site is 1,256.6 square miles, and using the total population of 326,647 cited above, a population density of 259.9 ppsm results." The Census Bureau and the ER population density for the Turkey Point site do not use this approach for calculating population density. Please resolve the discrepancy between the response and the ER for the St. Lucie County population density and provide the census block group population densities for the area in and around St. Lucie.

Enclosure

### **EIS 9.3.1-3**

Based on the RAI response wherein the ER Screening is superseded by the AA Report, please further expand on the rationale for eliminating Martin A and Glades A in favor of Okeechobee (ranked 6th) and Glades (ranked 7th) on Figure 6-1. Please explain this choice in terms of ESRP § 9.3, which recommends that the candidate sites be among the best sites that could be reasonably found.

Background. (FPL Response to NRC RAI No. 9.3.1-14; RAI 5588, L-2011-378 Dated 9/13/11: Response to NRC Environmental RAI Letter 1104071, Attachment 2). In the AA Report dated August 2011, Figure 6-1, the top five ranked sites in order are Turkey Point, St. Lucie, Martin, Martin A, and Glades A. On page 31 of the AA Report the Martin A and Glades A sites are dropped with the explanation that they would not provide advantages over the other sites previously identified in the county and because of questions on water availability. If the AA Report truly supersedes the previous siting study as noted in FPL's RAI response, then the rank scoring of the AA Report should supersede the previous site listings in the ER and the Martin A and Glades A sites should be alternatives considered in detail instead of the Okeechobee and Glade sites. Based on these RAI responses, please further expand on the rationale for eliminating Martin A and Glades A in favor of Okeechobee (ranked 6th) and Glades (ranked 7th) on Figure 6-1. Explain how this choice is consistent with ESRP § 9.3, which recommends that the candidate sites represent among the best sites that could be reasonably found.

### **EIS 9.3.1-4**

Please identify the specific environmental and population constraints that would prevent construction of a waste water pipeline in the vicinity of the 11 identified waste water sources. Additionally, please provide the basis for excluding from further consideration areas beyond 10 miles from a waste water source, or modify the criterion and provide the basis for the new criterion. If a modified criterion is developed, would there be new sites that could possibly use waste water as a cooling source? Explain why or why not.

Background. (FPL Response to NRC RAI No. 9.3.1-16; RAI 5588, L-2011-336 Dated September 1, 2011: Response to NRC Environmental RAI Letter 1104071, Attachment 8).

The AA Report on Page A-8 identifies 11 viable sources of waste water for cooling, however, the RAI response indicates that "...due to population and environmental constraints present in these candidate areas, FPL did not identify any potential sites other than Turkey Point that were located near viable sources of reclaimed water." Per FPL's September 30, 2011, response to RAI 5589, FPL would widen up to 40 miles of roadway, some of which are in highly populated and environmentally sensitive areas. This activity would have environmental, population and cost impacts that would appear to be similar to laying a pipeline. Since these types of impacts would occur for a roadway for some sites, please identify the specific population and environmental constraints that support a conclusion that environmental and population factors preclude construction of a water pipeline from all 11 sources.

The AA Report dated August 2011, Table 3-1 Regional Screening Criteria, Cooling Water Availability (Reclaimed Water), - excludes areas greater than 10 miles from qualifying wastewater treatment plants. However, Palo Verde operates with a waste water supply line that is about 35 miles long. In addition, FPL's West County plant uses reuse water from sources up to 20 miles away. With that information, a criterion of 10 miles does not appear to be defensible.

#### **EIS 9.3.1-5**

The AA Report indicates that the St Lucie site was retained because it is an existing, operating nuclear power plant site. If this criterion were not applied to the St. Lucie site would it have been retained as an alternative site based on its ranking among other sites' scoring?

Background. (FPL Response to NRC RAI 5588, L-2011-336 Dated September 1, 2011, Enclosure – Augmented Site Selection Study Report: Response to NRC Environmental RAI Letter 1104071, Attachment 8). The AA Report dated August 2011, page 26, indicates that, the St. Lucie and Turkey Point sites were included as primary sites based on the fact that they are existing, operating nuclear power plant sites within the ROI. Please expand on FPL's decision to include the St Lucie site since a) it may not meet the population exclusionary screening criteria set forth in the AA Report, and b) St Lucie ranks 17 on FPL's scoring Table 5-2 and Figure 5-1.

#### **EIS 9.3.1-6**

On figure 3-4 of the AA Report there are two areas similar in size to areas marked as Candidate Areas but that are not included as Candidate areas. Please clarify the exclusion of these two areas.

Background. (FPL Response to NRC RAI No. 9.3.1-2; RAI 5588, L-2011-336 Dated September 1, 2011: Response to NRC Environmental RAI Letter 1104071, Attachment 1). The RAI response states that the AA Report dated August 2011 adds "...Explicit steps for regional screening and candidate area identification..." In the AA Report Figure 3-4 (also shown as Figure A-7, page A-14), ROI Regional Screening Results – Northern Service Territory, there are two areas on this figure comparable in size to other areas that were identified as Candidate Areas (CAs) that were not identified as CAs at this stage in screening. Specifically, please clarify why the area between CA-8 and CA-7 and the area to the south of CA-5 were excluded as CAs?

#### **EIS 9.3.1-7**

Several sites were eliminated from consideration as alternative sites based on insufficient land area. Please clarify the land area available at the Andytown, Lauderdale, Port Everglades,

Riviera, Cutler, Sanford and Canaveral sites that justified their elimination from further consideration.

Background. (FPL Response to NRC RAI No. 9.3-5; RAI 5589, L-2011-195 Attachment, Letter #1104121, dated 5/27/11). The response states "... Thus, the 3,000 acre guideline was not used as an exclusionary criterion or mandatory requirement in determining site feasibility. Accordingly, even though some sites would have required land acquisition for nuclear plant development, no potential sites were screened out solely on the basis of the 3,000 acre guideline." The AA Report dated August 2011, page 15, Footnote (1), states that 3,000 acres was used as a general guideline in determining land sufficiency for sites other than existing nuclear power plant sites. On page 15, this report states: "The Andytown, Lauderdale, Port Everglades, and Riviera sites were eliminated from further consideration because these sites do not include enough land for a new nuclear power plant..." In addition, the Cutler, Sanford and Canaveral sites do not have adequate land area,..." Since no other information is provided on the available land at these sites, or other reasons provided for their elimination, it would appear that they were excluded from further evaluation based on not having at least 3,000 acres.

#### **EIS 9.3.1-8**

FPL has now determined that only 568 acres are available at the Martin site. For the Martin site to pass the 3,000 acre screening criterion, along with Glades and Okeechobee, FPL has assumed that such acreage is available. Please address why this presumption was not applied to other sites that were eliminated for insufficient land area as indicated on page 15 of the AA Report.

Background. In the AA Report dated August 2011, on page 26, the Martin site is included in the screening process to 10 primary sites even though the required 3,000 acres is not owned by FPL nor is there any discussion of whether such land is available. See: FPL Response to NRC RAI No. 9.3.1-12 (RAI 5588), L-2011-378 Dated 9/13/11: Response to NRC Environmental RAI Letter 1104071, Attachment 1. As indicated in the RAI response, the Martin site affected area would be 4,674 acres, Glades would be 9,287 acres, and Okeechobee would be 6,568. FPL Response to NRC RAI No. 9.3-8 (RAI 5589) L-2011-395 Attachment 4 (Letter #1104121, dated 9/30/11) states: "...development of two nuclear units at the [Martin] site would require approximately 3,364 acres (excluding offsite linear infrastructure components), including a new 3,000 acre reservoir since the existing 6,500 acre reservoir would not be available. Taking into account the 568 acres currently available for development, it is assumed that FPL would continue to operate the solar facility and would need to acquire approximately 2,800 acres of land in order to develop two nuclear units at this site." Please clarify these apparent inconsistencies in the application of the 3,000 acre criterion, wherein some sites are eliminated for not having 3,000 acres and others were retained that had less than 3,000 acres.

### **EIS 9.3.1-9**

The response to NRC RAI No. 9.3-6 indicates that the St Lucie site would occupy an affected area of 2,828 acres. The response to NRC RAI No. 9.3-7 indicates that only 953 acres is available on the current site. Please clarify if the additional 1875 acres are available and whether use of such acreage would involve removal of existing wetlands or developed land.

Background. This question is referring to the response to NRC RAI No. 9.3-6; RAI 5589, L-2011-395 Attachment 3, Letter #1104121, dated 9/30/11, page 1 of 2, and FPL Response to NRC RAI No. 9.3-7; RAI 5589, L-2011-195 Attachment 2, Letter #1104121, dated 5/27/11, page 1 of 1.

### **EIS 9.3.1-10**

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 identify a representative source(s) of such fill and the analysis of the impacts of this volume of truck traffic between the source location and the site.

### **EIS 9.3.1-11**

As discussed in ESRP § 9.3, the viability of the alternative sites depends upon the availability of cooling water. In order for the NRC staff to evaluate the environmental impacts of the project at the inland alternative sites (Glades, Okeechobee, and Martin), FPL needs to describe how it will obtain water for the sites in sufficient detail to make clear what those impacts will be. Please provide a description of a plan to obtain cooling water at these sites considering current water use restrictions, and describe the associated environmental impacts.

Background. (FPL Response to NRC RAI No. 9.3-10; RAI 5589, L-2011-395 Attachment 6, Letter #1104121, dated 9/30/11, Responses 1 & 2.) FPL's response states: "...Contact with regulators/owners of waters assumed as sources for the alternative sites is considered beyond the level of reconnaissance information appropriate for alternative site evaluations,..." This response does not provide adequate support for a determination of water availability at the alternative sites and thus does not support the viability of the alternatives sites. The staff notes that FPL's statement conflicts with the guidance in Regulatory Guide (RG) 4.7, which states on page 3, "In the site selection process, coordination between applicants for nuclear power stations and various Federal, State, local, and Native American tribal agencies will be useful in identifying potential problem areas." And RG 4.7, page 6, regarding water availability in particular states, "Regulatory agencies should be consulted to avoid potential conflicts." Please provide more detail regarding how cooling water will be obtained for the inland alternative sites.

The staff acknowledges that some of the current water use restrictions in effect around the three inland sites were not in effect at the time that FPL performed its initial site selection study in 2006. However, the staff performs its evaluation based on the most up-to-date information that is readily available. So, for example, since 2008 the South Florida Water Management District (SFWMD) has restricted water usage “from Lake Okeechobee, and the surface waters hydraulically connected to Lake Okeechobee in the integrated conveyance systems, to those uses which have historically occurred, the base condition water use.” This means that it would be challenging for FPL to obtain sufficient surface water at the three sites unless it finds some way to obtain access to existing allocations. Obtaining sufficient groundwater may also be challenging according to SFWMD.

In order for the NRC staff to evaluate the environmental impacts of the project at the alternative sites, FPL should describe how it will obtain water for the sites in sufficient detail to make clear what those impacts will be. So, for example, a statement that water will be obtained from nearby surface water bodies is insufficient without an explanation of how the water will be obtained and stored under SFWMD regulations.<sup>1</sup> Similarly, if groundwater is to be the source, then potential impacts to other users in the area (who typically rely on artesian flows) should be addressed. FPL may also develop a water supply solution that involves more than one source. But whatever approach FPL chooses, FPL needs to explain how it will obtain a water supply that is dependable enough to support baseload operation of the two nuclear units. The staff strongly urges FPL to discuss whatever approach it chooses with SFWMD, as recommended in RG 4.7, before submitting a revised evaluation.

#### **EIS 9.3.1-12**

Please estimate the number of structures that would have to be removed along the 9.3 miles of the expansion of State Road 70 described in the response to RAI 9.3-13. Provide an explanation of how the estimate was made.

Background. The question is referring to FPL Response to NRC RAI No. 9.3-13; RAI 5589, L-2011-395 Attachment 9, Letter #1104121, dated 9/30/11, page 1 of 2

#### **EIS 9.3.1-13**

Please estimate the number of structures that would have to be removed along the 39.1 miles expansion of State Road 710 described in the response to RAI 9.3.14. Provide an explanation of how the estimate was made.

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<sup>1</sup> SFWMD has indicated, for example, that it might be possible to obtain surface water by buying out existing agricultural users. If this approach is considered, the staff would need to know how much agricultural land would be taken out of cultivation to obtain a reliable supply of water, the associated impacts to agriculture in the region, and the impacts associated with storing such water. If one or more of the other alternatives suggested by SFWMD (e.g. storage of excess stormwater, or use of reclaimed water or deep saline aquifers) are considered, the staff would also need to know the impacts associated with such actions or a combination thereof.

Background. The question is referring to FPL Response to NRC RAI No. 9.3-14; RAI 5589, L-2011-395 Attachment 10, Letter #1104121, dated 9/30/11, page 1 of 3

**EIS 9.3.1-14**

Please estimate the number of structures that would have to be removed along the 22 miles expansion of State Road A1A, Seaway Drive and Ocean Blvd. described in the response to RAI 9.3-16. Provide an explanation of how the estimate was made.

Background. The question is referring to FPL Response to NRC RAI No. 9.3-16; RAI 5589, L-2011-395 Attachment 12, Letter #1104121, dated 9/30/11, page 1 of 1.