FPL

L-2013-213
10 CFR 52.3

July 8, 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 121114 (eRAI 6879)
Related to ESRP Section 9.3.1 Alternative Site Selection

References:

1. NRC Letter to FPL dated November 14, 2012, Environmental Request for Additional Information Letter 121114 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-2013-145 to NRC dated April 29, 2013, Revised Schedule for Response to NRC Request for Additional Information Letters 120830 (eRAI 6353 Rev. 2) and 121114 (eRAI 6879) 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) Nos. 1 through 4 provided in Reference 1. The schedule for this response was provided by FPL in Reference 2. 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).

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

D097
NRO

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

Executed on July 8, 2013.

Sincerely,

William Maher
Senior Licensing Director – New Nuclear Projects

WDM/RFO

Attachment 1: FPL Response to NRC RAI No. 1 (eRAI 6879)
Attachment 2: FPL Response to NRC RAI No. 2 (eRAI 6879)
Enclosure 1: Alternative Site Analysis – Turkey Point Units 6 & 7 Sensitivity Analysis on Effect of Current Water Use Regulations
Enclosure 2: Alternative Site Analysis – Turkey Point Units 6 & 7 Effect of Regional Screening Buffer Distance
Attachment 3: FPL Response to NRC RAI No. 3 (eRAI 6879)
Attachment 4: FPL Response to NRC RAI No. 4 (eRAI 6879)

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. 121114 Dated November 14, 2012

ESRP Section: EIS 9.3.1 – Alternative Site Selection Process

Application Section: ER

NRC RAI Number: 1 (eRAI 6879)

Please explain the apparent discrepancy between the information provided by Florida Power and Light Company (FPL) to the NRC regarding the availability of water for the three inland, alternate sites (Glades, Martin, and Okeechobee), and the information provided to the U.S. Army Corps of Engineers (USACE) regarding the availability of water for those same sites. Specifically, address how these three sites meet the NRC's Regulatory Guide (RG) 4.7 criterion of reasonable assurance for obtaining water use permits while at the same time being eliminated from further consideration in FPL's alternatives analysis of the Clean Water Act 404(b)(1) guidelines.

Background

In its responses to requests for additional information (RAIs) 9.3-10 and 9.3-11, Florida Power and Light Company (FPL) responded to the NRC in RAI 5589, L-2011-395 Attachments 6 and 7, dated September 30, 2011. FPL indicated that it considered the availability of cooling water in its evaluation of the three inland, alternative sites. In the response to RAI 9.3-10, FPL stated, "Physical availability of water at these sites was confirmed during regional screening and/or analysis of flow records for the source water bodies." Similarly, in its response to RAI 9.3-11, FPL stated, "Accordingly, because water is physically available from the identified potential sources, FPL has identified these as viable alternative sites for consideration and comparison with the proposed site."

FPL has also submitted to the USACE an alternatives analysis in relation to the Clean Water Act 404(b) (1) guidelines (FPL response to NRC RAI 5340, Revision 1, L-2011-477, dated November 10, 2011). In that report, dated October 2011, FPL described its evaluation as to whether the alternative sites were practicable. In Table 5.1-1, one of the factors used in this evaluation was the "Availability/Permitability of Water Resource," described as follows, "Ability to obtain regulatory approval for a continuous and reliable supply of water for operation of two AP 1000 units from reclaimed water, fresh surface water, groundwater, or saltwater surface water at the site." On page 56 of the report, FPL expounded on this factor, stating, "A critical factor in the operation of API000 units is the availability and reliability of water for operation. Water in sufficient quantity and quality is required on a continuous basis once the units become operational. ... More importantly, the water supply must be available and reliable (i.e., sufficient over an extended period of time to allow for continuous operation)."

The report goes on to evaluate the three inland, alternative sites with respect to water availability. On page 58 of the report, FPL discussed the availability of water from Lake Okeechobee and the waters flowing in and out of the lake. It stated in part, "Given the

establishment of MFLs [minimum flow levels], the need for water reservations for fish and wildlife, and the need to develop alternative sources of water for public supply, **the use of these surface waters as a cooling water supply for the Project is likely not permitable**." [emphasis added]. On page 60, it stated that a review of the *Final Indian River Lagoon-South Project Implementation Report* and the associated environmental impact statement "clearly shows that any water in the Lake Okeechobee basin very likely will be reserved for CERP [Comprehensive Everglades Restoration Project], the Everglades, and the estuaries. ... No suggestion, however, was made for the water to be used for future development or future consumptive use permits." It concluded by stating on the same page, "The considerations discussed above clearly show that surface waters in south-central Florida are not likely to support both CERP project objectives and supply the water needed for an independent development project with a water demand of 60 MGD. **The surface water supplies in this area have been almost completely allocated between existing legal users, the environment, and future CERP projects**". [emphasis added]

The report goes on to evaluate the practicability of each site. In its evaluation of the Glades site in particular, the report stated (page 67),

> The Glades site does not have a continuous or reliable supply of cooling water. As previously described, sources of surface water and groundwater are not available in sufficient quantity and quality to support the operation of two AP1000 units at the site. Consumptive use restrictions, impacts to existing legal users, and environmental water reservations would limit the continuous availability of water even with the use of a reservoir. The use of high TDS groundwater is not a practicable alternative as impacts to water quality, surrounding agriculture, and natural ecosystems resulting from cooling tower drift would be adverse. No POTWs [publicly owned treatment works] with sufficient volume are located in the vicinity of the Glades site; therefore there are no opportunities for use of reclaimed water as the Project's primary cooling water supply.

In its evaluation of the Martin site, the report stated (page 68),

> Surface water and groundwater in sufficient quantity and quality are not available to provide a continuous supply of water at the Martin site even with the addition of a 3,000-acre reservoir. Consumptive use restrictions identified in Section 5.1, impacts to existing legal users, and environmental water reservations limit the continuous availability of water. More specifically, the Martin site is located geographically close to the C-44 Reservoir and Stormwater Treatment Area. As discussed in Section 3.3.3, the USACE recently awarded a contract for construction of the C-44 Reservoir (USACE, 2011) as part of CERP. Along with other reservoirs and stormwater treatment areas, the C-44 Reservoir will help store, divert, and manage billions of gallons of water with the goal of providing a more consistent and higher quality freshwater supply to the South Indian River Lagoon and the St. Lucie

> Estuary (USACE, 2011, 2004). The proximity of the Martin site to the C-44 Reservoir undermines the regulatory feasibility of developing the Martin site in terms of water supply as a withdrawal of 60 MGD would compromise CERP objectives and thus preclude significant environmental restoration objectives. The use of high TDS groundwater is not a practicable alternative as impacts to water quality, surrounding agriculture, and natural ecosystems resulting from cooling tower drift would be adverse. No POTWs with sufficient volume are located in the vicinity of the Martin site; therefore there are no opportunities for use of reclaimed water as the Project's primary cooling water supply.

In its evaluation of the Okeechobee site, the report stated (page 69),

> While the site is in proximity to surface water sources and sufficient land area could be available for a reservoir, the availability and reliability of a continuous supply of cooling water is not practicable at this site, as discussed in Section 5.1.3. Consumptive use restrictions, impacts to existing legal users, and environmental water reservations limit the continuous availability of water. The use of high TDS groundwater is not a practicable alternative as impacts to water quality, surrounding agriculture', and natural ecosystems resulting from cooling tower drift would be adverse. No POTWs with sufficient volume are located in the vicinity of the Okeechobee site; therefore there are no opportunities for use of reclaimed water as the Project's primary cooling water supply.

As stated at 10 CFR 51.45(b)(2), the applicant's environmental report shall address alternatives to the proposed action. "The discussion of alternatives shall be sufficiently complete to aid the Commission in developing and exploring, pursuant to section 102(2)(E) of NEPA, 'appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources.'" The staff has also provided guidance to applicants regarding alternative sites in particular in RG 4.7, *General Site Suitability Criteria for Nuclear Power Stations*. Among the criteria used to evaluate sites for a combined license application, RG 4.7 states on page 4.7-13,

> To evaluate the suitability of sites, there should be reasonable assurance that permits for consumptive use of water in the quantities needed for a nuclear power plant of the stated approximate capacity and type of cooling system can be obtained by the applicant from the appropriate State, local, or regional agency.

Item B.6 in Appendix B to RG 4.7 expands on this issue, stating,

> Water use and consumption must comply with statutory requirements and be compatible with water use plans of cognizant water resources planning agencies.

> Consumptive use should be restricted such that the supply of other users is not impaired and that applicable surface water quality standards could be met, assuming normal station operational discharges and extreme low flow conditions defined by generally accepted engineering practices.

FPL RESPONSE:

FPL's 2011 404(b)(1) Analysis (Reference 1) identified water use restrictions in the Lake Okeechobee service area that the South Florida Water Management District ("SFWMD") implemented in 2008. The statements quoted above in this request for additional information ("RAI") reflect that particular regulatory context. It is important to note that FPL's 2011 404(b)(1) analysis predated the detailed discussions FPL and the NRC held with SFWMD in 2012 and so did not explicitly address the non-traditional water balance options identified by SFWMD in its letter to the NRC dated June 29, 2012 (Reference 2). However, FPL's 2011 404(b)(1) analysis did note that alternative water options existed:

> *New consumptive uses in the Lake Okeechobee service area are prohibited without implementation of offsets, alternative water supplies, or terminated or reduced base condition water uses, specifically required by permit limiting condition to prevent increased water from being withdrawn.*

Reference 1 at 58.

FPL recently submitted a response to an RAI from the United States Army Corps of Engineers ("USACE") (Reference 3). In that response, FPL provided a more detailed discussion of water availability at the three inland alternative sites, including addressing in detail the potentially licensable water balance scenarios that were identified by FPL in its response to NRC eRAI 6353 (RAI No. 9.3.1-11). The USACE RAI Response provides further detail regarding the "offsets, alternative water supplies, or terminated or reduced base condition water uses" based on which licensable water supplies would be available at the three inland sites.

This resolves the "apparent discrepancy" between information provided to NRC and to USACE. FPL's statements in both regulatory settings regarding the availability of sufficient water at the three inland sites are now predicated on the potentially licensable options identified in the June 2012 SFWMD letter and presented in FPL's response to NRC eRAI 6353, Question 11. FPL's new USACE RAI Response evaluates whether the updated information about water availability would affect the practicability determination for each site and concludes that the new water balance scenarios do not change the overall conclusion that the three inland sites are not practicable alternatives in the USACE Clean Water Act 404(b)(1) context, although they are viable for the purposes of the NRC's NEPA analysis.

References:

Reference 1: FPL Letter to NRC L-2011-477 dated November 10, 2011, Response to NRC Request for Additional Information RAI 5340 Revision 1 Standard Review Plan Section: EIS USACE - US Army Corps of Engineers Application Section: 9.3.

Reference 2: SFWMD Letter to NRC dated June 29, 2012, Florida Power and Light Combined License Application for Turkey Point Units 6 & 7 - Water Availability at Alternative Sites.

Reference 3: Letter from M. Raffenberg, FPL, to I. Sotelo, USACE, dated June 28, 2013.

ASSOCIATED COLA REVISIONS:

There are no COLA changes identified as the result of this response.

ASSOCIATED ENCLOSURES:

None

NRC RAI Letter No. 121114 Dated November 14, 2012

ESRP Section: EIS 9.3.1 – Alternative Site Selection Process

Application Section: ER

NRC RAI Number: 2 (eRAI 6879)

The 404(b)(1) guidelines analysis submitted to USACE by FPL concluded that the three inland, alternative sites are not practicable alternatives. 40 CFR 230.10(a)(2) of the 404(b)(1) guidelines state that "an alternative is practicable if it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of the overall project purposes." It would follow that an alternative that is not practicable is either not available or not capable of being done. Please explain how an alternative site which is "not practicable" for purposes of the Section 404(b)(1) review by the USACE can be considered as a viable alternative site for the purposes of the NEPA review by the NRC and the USACE?

FPL RESPONSE:

The NRC and the United States Army Corps of Engineers ("USACE") both must consider alternatives to FPL's proposed site for new nuclear power generation. Under the National Environmental Policy Act ("NEPA") and section 404 of the Clean Water Act ("CWA"), NRC and USACE are required to identify, screen, and eliminate alternatives to a proposed project before conducting a detailed assessment of potential alternatives. NRC guidance implementing NEPA provides for screening a reasonable number of alternatives that are potentially licensable; however, it does not equate to the practicability criteria applied under the added scrutiny of Section 404(b)(1). Given the different purposes of the statutes and the different regulatory frameworks, a site may be a "potentially licensable" candidate site selected for more detailed analysis under NEPA, but be eliminated as not practicable under the CWA "practicable" alternatives analysis. In fact, NRC guidance explicitly reserves consideration of most of the 404(b)(1) practicability factors for a later stage of the NRC's review. With this distinction in mind, it is understandable and appropriate that particular alternatives may be eliminated at different stages in the two processes.

In fact, this outcome is predicted in the 404(b)(1) implementing regulation, which notes:

> For actions subject to NEPA, where the Corps of Engineers is the permitting agency, the analysis of alternatives required for NEPA environmental documents, including supplemental Corps NEPA documents, will in most cases provide the information for the evaluation of alternatives under these Guidelines. On occasion, these NEPA documents may address a broader range of alternatives than required to be considered under [the 404(b)(1) Guidelines] or may not have considered the alternatives in sufficient detail to respond to the requirements of these

> Guidelines. In the latter case, it may be necessary to supplement these NEPA documents with this additional information.

40 C.F.R. § 230.10(a)(4).

Moreover, this scenario, where certain alternatives that are reasonable under NEPA are deemed not practicable in the 404(b)(1) context, is explicitly envisioned in the USACE RAI that requested FPL to perform the 404(b)(1) analysis (Reference 1). That 2011 USACE RAI asked FPL to identify all reasonable alternatives and later perform a practicability review (Reference 1, Att. pages 3, 5). This certainly reflects a USACE expectation that some reasonable alternatives may not be practicable.

Comparison of the NRC NEPA Process and the USACE 404(b)(1) Process

For 404(b)(1) purposes, a "practicable" alternative is one that "is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes." 40 C.F.R. § 230.10(a)(2). Thus, under the 404(b)(1) process, an alternative site may be available and capable of being done, but still not be considered practicable if it would "frustrate the overall project purpose," especially if the alternative site would "complicate, rather than simplify, the logistics" of implementing the proposed project. *See City of Shoreacres v. Waterworth*, 420 F.3d 440, 448 (5th Cir. 2005) (recognizing project purpose to expand Harris County major sea port would be frustrated by selecting an alternative site beyond the county). Additionally, the Corps should assess whether the proposed alternative site is "functional for the applicant's needs." *Nat'l Wildlife Fed. v. Whistler*, 27 F.3d 1341, 1344 (8th Cir. 1994).

As stated in the Turkey Point Units 6 & 7 Section 404(b)(1) Alternatives Analysis, the overall project purpose is to provide baseload generating capacity in the most cost-effective manner (as required by the Florida Public Service Commission), while minimizing emissions of greenhouse gases, providing fuel diversity, and addressing the generation/load imbalance in Miami-Dade and Broward counties (Reference 1). Construction and operation of the units at an alternative site that does not provide baseload generating capacity in the most cost-effective manner or includes avoidable logistical and/or technical challenges may ultimately be considered not practicable.

In both its original 404(b)(1) analysis and its recent USACE RAI Response (Reference 3 to Attachment 1, above), FPL considered multiple cost, technology, and logistical elements for all five of the sites considered, and the basis for finding the three inland sites not practicable was predicated on the composite analysis of these factors on a site-by-site basis. As is explained in the recent USACE RAI Response, in addition to significant challenges associated with the potentially licensable water supply options and cost, questions of land ownership and ease of acquisition, land use constraints, existing nuclear generation infrastructure, existing transmission rights-of-way, and the need for additional transportation facilities, all contributed to the cumulative determination that the three inland sites, while viable and potentially licensable, were not practicable in light of FPL's overall project purpose under the 404(b)(1) process. These are issues that "complicate, rather

than simplify, the logistics" of implementing the proposed project and are properly considered in a 404(b)(1) practicability determination, but these factors do not mean that the sites are not viable or suitable as those terms are used in the NRC's NEPA site-selection process.

Under the NRC's NEPA implementing guidance, NUREG-1555 (Rev. 1 July 2007) (Reference 2), and Regulatory Guide 4.7 (Reference 3), applicants screen sites to develop sites that are "suitable," not necessarily practicable as defined in the 404(b)(1) context. Under this process, FPL, using "reconnaissance level information," identified suitable potential sites that meet the seven minimum criteria outlined in NUREG-1555, including consideration of consumptive uses of water, jeopardy of protected species, and impacts to aquatic ecosystems, as well as the safety and operational criteria from Regulatory Guide 4.7 (Reference 3). These were treated as exclusionary criteria throughout the process, beginning with regional screening to identify candidate areas and then potential sites, so that no potential sites failing these criteria were considered in the identification of candidate sites. From this large list of suitable potential sites, FPL optimized the list by applying discretionary factors in order to help limit an otherwise "unworkable number of possible locations" (Reference 2). These discretionary factors, such as the distance to transmission and the existence of land-use conflicts, are not used to determine whether a site is suitable or viable, but instead are used to ensure the set of candidate sites meets the final NRC requirement for candidate sites, that they "would be among the best that could reasonably be found for the proposed plant" (Reference 2).

The seven "minimum criteria" for candidate sites in NUREG-1555 do not include a "practicability" consideration or any consideration that addresses cost, existing technology, or logistics. In fact, candidate sites only need to be "potentially licensable" (Reference 2). FPL's three inland candidate sites meet all of the environmental criteria for candidate sites laid out in NUREG-1555 as well as the safety and operational criteria in Regulatory Guide 4.7. And, as shown in the Environmental Report and discussed in more detail below, the three inland candidate sites meet the ultimate NRC requirement for candidate sites, they are among the best that can reasonably be found in the region of interest. Thus, regardless of FPL's conclusion regarding practicability in the more refined Corps analysis, these three inland sites meet every NRC criterion for candidate sites.[1]

[1] In public meetings with FPL, the NRC Staff has referred to a statement in the Council on Environmental Quality's ("CEQ")'s "Forty Most Asked Questions" guidance document (Reference 4) that "[r]easonable alternatives include those that are practical or feasible from the technical and economic standpoint and using common sense, rather than simply desirable from the standpoint of the applicant." But this guidance does not state that an EIS cannot consider an alternative that an applicant considers not practicable in the context of its 404(b)(1) analysis. In any event, FPL's practicability determination did not conclude that development of the reactors at these sites was not economically or technically feasible, but instead reached a composite decision based on additional factors not encompassed by the CEQ guidance, such as whether particular sites complicate the logistics of project development, a factor that would be excluded by the CEQ guidance. Regardless, the NRC has long followed its own published guidance on this issue, which seeks candidate sites that meet the site suitability requirements in Regulatory Guide 4.7 and the environmental criteria of NUREG-1555 and are the result of a reasonable site-selection process, such as that followed by FPL.

The final alternative sites selected for comparative review in the NRC NEPA process are subjected to a more detailed sequential two-part test to determine whether any of them are "obviously superior" to the proposed site (Reference 2). The test requires NRC to first determine whether "there are environmentally preferred sites," and, if so, then consider the "economics, technology, and institutional factors among the environmentally preferred sites to see if any is obviously superior to the proposed site" (Reference 2). The proposed site "prevails" if there is no "obviously superior" site (Reference 2). As is explained in NUREG-1555, "[c]osts associated with alternative sites only need to be evaluated for alternative sites found to be environmentally preferable" under the NRC NEPA framework in order to determine if that site is "obviously superior" (Reference 2). In other words, the NRC's NUREG-1555 site selection process does not require a USACE-style practicability review at the candidate site stage, but does call for a similar review in the event one of the alternative candidate sites is identified as environmentally preferable to Turkey Point. Several of the factors identified in FPL's recent USACE RAI Response, which led to the conclusion that the three inland sites are not practicable (cost, questions of land ownership and ease of acquisition, land use constraints, existing nuclear generation infrastructure, existing transmission rights-of-way, and the need for additional transportation facilities) all would be appropriately considered in the "obviously superior" part of the NRC alternative site process as issues of "facility costs," "institutional constraints as they affect site availability," or "additional public concerns" (Reference 2), but not necessarily in the NRC's evaluation of the viable candidate sites that are the product of the site-selection process.

The "practicability" requirement and the NRC's "obviously superior" review serve a similar function – to ensure that an agency does not reject a site on environmental grounds when there are sound reasons – economic, technological, or logistical – why that decision may not be called for. In this case, the 404(b)(1) practicability test and the NRC "obviously superior" test produce the same result. The Turkey Point site is the least environmentally damaging practicable alternative under the USACE 404(b)(1) process and if the NRC determines that another candidate site is environmentally preferable under the NRC NEPA process, the NRC will have an opportunity to consider whether that site would be "obviously superior" to Turkey Point after taking into account issues of cost, logistics, and technology. Unless that determination is made, there is no reason to expect that the list of practicable alternative sites will correspond exactly to the list of the top-ranking suitable sites carried forward for review as candidate sites under NEPA.

The CEQ's Forty Most Asked Questions guidance notes that while "only a reasonable number of examples" must be evaluated, the range should "cover[ ] the full spectrum of alternatives" (Reference 4). As discussed below, an evaluation of the "full spectrum" of alternatives to the Turkey Point site cannot be performed without including inland sites, such as Glades, Martin, and Okeechobee 2, which the South Florida Water Management District (SFWMD") has indicated are potentially licensable.

The Three Inland Candidate Sites are Among the Best That Can Reasonably be Found in the Region of Interest

Based on the above discussion, the three inland candidate sites are viable, potentially licensable alternatives. However, if the NRC determines that these sites are not viable alternatives, then no better alternative sites can be found to replace those sites. Section 9.3.2.1 of the ER explains that the region of interest ("ROI") is FPL's service territory, with a "particular emphasis on the load centers for the greater Miami area." NUREG-1555 explains that the ROI should be consistent with the major load centers to be supplied by the proposed plant and that as a general rule the plant should be located at a site in the area of the load center that the plant will serve over its lifetime (Reference 2). ER Figure 9.3-3, which identifies candidate areas in South Florida, shows the impact that the large amount of federal and state protected lands in that region, together with the heavily populated coasts, have on the size and number of candidate areas reasonably close to the Miami load center. As is shown in Figure 9.3-3, these candidate areas are limited to, for the most part, the inland upland areas surrounding Lake Okeechobee.

Due to the unique geographic nature of the Florida peninsula, the location of the Miami load center near the southern tip of the peninsula, the large expanse of the Everglades National Park and other protected lands in the area, and the large population centers along the Atlantic coast, siting a nuclear reactor anywhere in the South Florida ROI would be challenging. The relevant inquiry for the purpose of the NRC review is whether the inland candidate sites identified by FPL are among the best that can reasonably be found in that area (Reference 2). To evaluate whether the inland candidate sites still meet that test and whether more suitable alternative sites could be identified, FPL performed a site selection sensitivity analysis accounting for the current more restrictive regulatory environment. This sensitivity analysis is provided in Enclosure 1. The sensitivity analysis took the potential sites identified in the original site selection study and through the candidate area screening from the 2011 augmentation analysis and "re-scored" the site rankings in light of the heightened water restrictions, penalizing the three inland sites and other sites that would be subject to similar water availability restrictions. The results of this analysis show that the three inland candidate sites still rank higher than the other potential sites and so remain "among the best that can reasonably be found" within the ROI, because no sites would outrank the current five candidate sites when accounting for today's water regulations.

At a recent public meeting, the NRC Staff questioned the use of a 10-mile regional screening buffer distance in FPL's site selection process, positing that additional reasonable sites may have been excluded by this criterion. To address this concern, FPL performed another supplemental analysis of this issue, which concludes that expanding the maximum pumping distance for seawater sources would not lead to the identification of more suitable sites. Removing the screening buffer would not remove the barriers to seawater access, which are typically found within the first mile from the coast, and would only serve to increase the required pumping distance, resulting in increased environmental impacts associated with the longer pipeline. The use of seawater at inland sites would encounter Clean Water Act Section 316(b) limitations for intake and also require the construction of reverse osmosis facilities in order to use cooling towers, which would create

many of the same cost and logistical issues as using brackish water from the Avon Park Producing Zone at the three inland candidate sites, only on a larger scale due to the higher TDS concentrations in seawater. This supplemental analysis, included as Enclosure 2, supports FPL's conclusion that the use of the 10-mile regional buffer distance did not lead to the omission of other potential sites that would have been more suitable than those evaluated.

Thus, a review of the full spectrum of reasonable alternatives should include the Martin, Glades, and Okeechobee 2 sites, because they are among the best that can reasonably be found in the ROI. But if the NRC determines that these inland sites are not viable alternatives, it may proceed with its analysis with only two candidate sites (Turkey Point and St. Lucie). NUREG-1555 is clear that "there can be no specific criteria for determining that an adequate number of candidate sites have been identified," but that "the reviewer should make such a determination, based on the ROI, the number of candidate areas, and the number and type of alternative sites evaluated by the applicant" (Reference 2). If the NRC concludes that a large section of the inland portion of South Florida cannot support a reasonable alternative site under current water restrictions, then it should factor that conclusion into its consideration of how many alternative sites are appropriate for its review. As is shown in FPL's sensitivity analysis, if the NRC concludes that the three inland candidate sites are not viable, there are no more suitable alternative sites to take their place.

The NRC Staff Evaluates the Reasonableness of FPL's Site Selection Process

Finally, as is discussed in FPL's Response to eRAI 6353, 9.3.1-11, the NRC review of the viability of an applicant's candidate sites is a part of its overall review of the reasonableness of the applicant's site selection process. Under this review, the NRC is not to perform its own independent site selection process. As the Licensing Board in the *North Anna* ESP case explained, "federal case law . . . does not require agencies to identify alternatives on their own" but allows agencies to "rely upon the applicant's list of alternatives." *Dominion Nuclear North Anna, LLC* (Early Site Permit for North Anna ESP Site), LBP-07-09, 65 NRC 539, 609 (2007). The NRC's alternative site review process was explained clearly by the Atomic Safety and Licensing Board in its review of the Early Site Permit (ESP) for the Vogtle site:

> The Board finds that the region of interest (ROI) chosen by SNC is consistent with the Staff's definition and that SNC had a reasonable process to go from ROI, to candidate area, to potential sites, to candidate sites, to the proposed site. The Board also finds that the Staff, based on its independent review, had a reasonable basis for concluding that the Applicant's ROI was appropriate for consideration and analysis of potential ESP sites, and that SNC did not arbitrarily exclude desirable candidate ESP locations. In addition, it is clear that once the Staff was satisfied that the ROI and the selection process were acceptable, the Staff then did its own independent review of the four candidate sites. In that regard, the Board finds that the Staff had a reasonable basis for concluding that the SNC site selection process resulted in candidate sites that

> are among the best that could be reasonably found in the ROI, and that, since none of the alternative sites would be environmentally preferable to the proposed Vogtle ESP site, none would be obviously superior. We thus find that the Staff's conclusions in this regard were reasonable and that the record is sufficient with respect to the SNC site selection and evaluation process and results.

Southern Nuclear Operating Co. (Early Site Permit for Vogtle ESP Site), LBP-09-19, 70 NRC 433 (slip op. at 53) (2009).

Thus, the NRC's role is to review FPL's site selection process, and the reasonableness of FPL's site selection process can only be judged in light of information available to FPL when it performed its analysis.[2] Because some of the water use restrictions in the ROI post-date the completion of FPL's site selection study, they should not be considered in the NRC's review of the reasonableness of FPL's site selection process. Judging the viability of these sites under today's regulatory framework amounts to an NRC-run secondary site selection process, which is contrary to the guidance of NUREG-1555.

That said, as is discussed above, even if the NRC Staff decides it must assess the viability of those candidate sites today, the three inland alternatives remain "potentially licensable" as the SFWMD has confirmed, and remain among the best that can reasonably be found in the ROI, as demonstrated in FPL's site-selection sensitivity analysis.

This response is PLANT SPECIFIC.

References:

Reference 1: FPL Letter to NRC L-2011-477 dated November 10, 2011, Response to NRC Request for Additional Information RAI 5340 Revision 1 Standard Review Plan Section: EIS USACE – U.S. Army Corps of Engineers Application Section: 9.3.

Reference 2: U.S. Nuclear Regulatory Commission, NUREG-1555, Environmental Standard Review Plan, Section 9.3, Site Selection Process, Revision 1, July 2007. http://pbadupws.nrc.gov/docs/ML0718/ML071800223.pdf. Accessed July 3, 2013.

Reference 3: Regulatory Guide 4.7, General Site Suitability Criteria for Nuclear Power Stations, Revision 2, April 1998.

Reference 4: U.S. Council on Environmental Quality, Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations, March 16, 1981. http://ceq.hss.doe.gov/nepa/regs/40/40p1.htm. Accessed July 3, 2013.

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[2] As FPL explained in its Response to eRAI 6353, 9.3.1-1, "Revision 3 of ER Section 9.3 . . . supersedes in its entirety all previous revisions of Section 9.3. The Augmentation Report supplements the 2006 Siting Report for purposes of satisfying NRC guidance on consideration of alternate sites, but does not replace the 2006 report as documentation of decision processes executed at that time."

ASSOCIATED COLA REVISIONS:

There are no COLA changes identified as the result of this response.

ASSOCIATED ENCLOSURES:

Enclosure 1: Alternative Site Analysis – Turkey Point Units 6 & 7 Sensitivity Analysis on Effect of Current Water Use Regulations

Enclosure 2: Alternative Site Analysis – Turkey Point Units 6 & 7 Effect of Regional Screening Buffer Distance

ENCLOSURE 1

Alternative Site Analysis – Turkey Point Units 6 & 7
Sensitivity Analysis on Effect of Current Water Use Regulations

Alternative Site Analysis – Turkey Point Units 6 & 7
Sensitivity Analysis on Effect of Current Water Use Regulations

Regulatory constraints for obtaining water for plant cooling at inland Florida sites are more restrictive in 2013 than they were in 2006, when the original site selection analysis and decision processes were conducted. NRC has questioned the viability of the Martin, Glades, and Okeechobee sites in light of these regulatory changes.

In order to qualitatively characterize the effect of the current restrictions on water withdrawals, a sensitivity analysis was conducted to re-evaluate site ratings and rankings for alternative sites identified in the Turkey Point Unit 6&7 Environmental Report – in light of current regulatory positions. Results of this analysis are described in the following sections.

A fundamental foundation for conducting this analysis is that all of the inland sites – not just Martin, Glades, and Okeechobee – would be subject to the regulatory framework that has evolved since 2006, and all inland sites considered in the Turkey Point site selection study would be affected in the same or similar fashion. For each site, the criterion ratings associated with cooling water were re-examined in light of these restrictions. Technical background for how these ratings were considered in the analysis are described in Sections A and B.

Results of the updated analysis are presented in Figures 1 and 2 for the Screening and General Siting Criteria, respectively. Examination of these results indicates that site ranking to account for current water restrictions would not change the resulting decisions:

- Most inland sites would drop in suitability relative to Turkey Point and St. Lucie due to new water restrictions
- Martin, Glades, and Okeechobee 2 would still be selected as candidate sites based on updated ranking because other high-ranking inland sites would have similar water restrictions
- The 3 inland candidate sites would still be "among the best that can reasonably be found"

Thus, the conclusion of this analysis is that even under the current regulatory framework, the Site Selection Study would find no site better than 5 current candidate sites within the ROI.

A - Screening of Potential Sites to Identify Primary Sites

Objective: Reconsider the assigned ratings for the set of potential sites (21) against the Cooling Water Supply screening criterion.

The screening criterion for cooling water included four sub-criteria: Flow, Flexibility, Risk, and Regulatory Challenge. The sub-criteria, and – where applicable – the potential ratings modifications that might apply today are as follows:

Flow: Original evaluation examined physical flow (surface waters) or estimated availability for potential cooling water sources. New data sources were not consulted, and therefore the sub-ratings were not altered.

Flexibility: Original evaluation examined the number of different water sources capable of supplying the plant cooling water requirement. New data sources were not consulted, and therefore the sub-ratings were not altered.

Risk: Original evaluation identified a risk level associated with reliability aspects of water supply. New information has been identified as a result of investigating water supply options for the inland alternative sites surrounding Lake Okeechobee, and the sub-ratings were altered as follows:

Sub-rating = 1 (Substantial Risk): The Hardee and Highlands sites were originally given a sub-rating of 1 and remain unaltered. The sub-rating for the Hendry 2, Okeechobee 1, and Palm Beach A sites were reduced to a 1 as these sites have the lowest flexibility sub-ratings, and the risk in developing a reliable water supply appears greater than when the sub-ratings were originally developed.
Sub-rating = 4 (Some Favorable Aspects): The Turkey Point and St. Lucie sites were originally given a sub-rating of 4 due to the abundant water sources available. These sub-ratings were not altered.
Sub-Rating = 3 (Neutral): The Manatee site was originally given a sub-rating of 3 due to the abundant water source available, but also given some risk of developing water supply infrastructure in Tampa Bay. The sub-rating was not altered.
Sub-rating = 2 (Some Risk): The remaining potential sites would be expected to utilize similar water supply scenarios, with a greater degree of risk, and were given a sub-rating of 2. As such, the sub-ratings for the Ft. Myers, Martin, and Martin A sites were reduced from those originally assigned.

Regulatory Challenge: Original evaluation identified a difficulty level with obtaining regulatory approval for use of the water supplies. New information has been identified as a result of investigating water supply options for the inland alternative sites surrounding Lake Okeechobee, and the sub-ratings were altered as follows:

Sub-rating = 4 (Some Favorable Aspects): The Turkey Point and St. Lucie sites were originally given a sub-rating of 4 due to the abundant water sources available and their assumed permitability. These sub-ratings were not altered.

Sub-rating = 2 (Some Challenges): The Manatee site was originally given a sub-rating of 2 due to potential challenges with developing a water supply using Tampa Bay. This sub-rating was not altered.
Sub-rating = 1 (Substantial Challenges): The Collier A site was originally given a sub-rating of 1 due to anticipated challenges in developing a water supply using the Gulf of Mexico and traversing ecologically sensitive areas. This sub-rating was not altered. The remaining potential sites would utilize inland surface waters and/or groundwater for plant cooling. Study of the inland alternative sites surrounding Lake Okeechobee has shown a greater level of expected regulatory difficulty than originally assumed. As such, the sub-ratings for the remaining sites were reduced from those originally assigned (West County was previously assigned a sub-rating of 1 and remains unaltered).

Results from the Augmented Site Selection Study Report (August 2011) are summarized as follows:

Ten primary sites were down-selected as follows:
Top 8 scoring sites (Martin, Okeechobee 2, Glades, Okeechobee 1, Hendry 1, Glades A, DeSoto, and Martin A) along with Turkey Point and St. Lucie. Note that DeSoto A was the 9th site, and Hardee was the 10th site.
These scores are shown in blue on the accompanying Screening Criteria Evaluation graph.

Using altered cooling water supply ratings, a similar down-select decision would follow:

Top 8 scoring sites (Martin, Okeechobee 2, Glades, DeSoto, Okeechobee 1, Hendry 1, DeSoto A, and Hardee) along with Turkey Point and St. Lucie. Note that Glades A is the 9th site and Martin A is the 10th site.
Note that when using the altered cooling water supply ratings, the DeSoto, DeSoto A, and Hardee sites were not penalized (in relation to the other potential sites) in relation to ratings appearing in the Augmentation Report. This is due to the fact that these sites were already (i.e., in the Augmentation Report) rated lower than the other inland sites with respect to cooling water supply, largely because utilizing the Peace River for cooling water supplies was viewed as more challenging than other inland surface water sources based on FPL knowledge at the time of the original siting study. Accordingly, further reductions in the Regulatory Challenge component of the rating do not apply to these sites and no reduction to the composite cooling water supply rating was applied for these sites.
These updated scores are shown in red on the accompanying Screening Criteria Evaluation graph.

Conclusion: Altering the cooling water supply ratings by incorporating the latest information developed in studying the inland alternative sites does not have a significant impact in identifying the best primary sites available in the Region of Interest from an environmental

perspective. The Martin, Okeechobee 2, and Glades sites remain the highest scoring sites in the screening criteria evaluations.

B - Screening of Primary Sites to Identify Candidate Sites

Objective: Reconsider the assigned ratings for the set of primary sites (10) against the Cooling System Requirements GSC criterion.

> The composite rating for the Cooling Water Supply screening criterion is brought forward as a component of the Cooling System Requirements GSC criterion evaluation. As a result, the composite rating for the Cooling System Requirements GSC is reduced by 0.25 points for all primary sites except the Turkey Point, St. Lucie, and DeSoto sites. Again, the DeSoto site's composite rating for the Cooling Water Supply screening criterion was unchanged, and therefore, the DeSoto site's composite rating for the Cooling System Requirements GSC is also unchanged.

Thus, using the altered Cooling System Requirements ratings, the composite scoring of the primary sites is only marginally affected, and the scoring order of the sites is unchanged. These updated scores are shown in red on the accompanying General Criteria Evaluation graph.

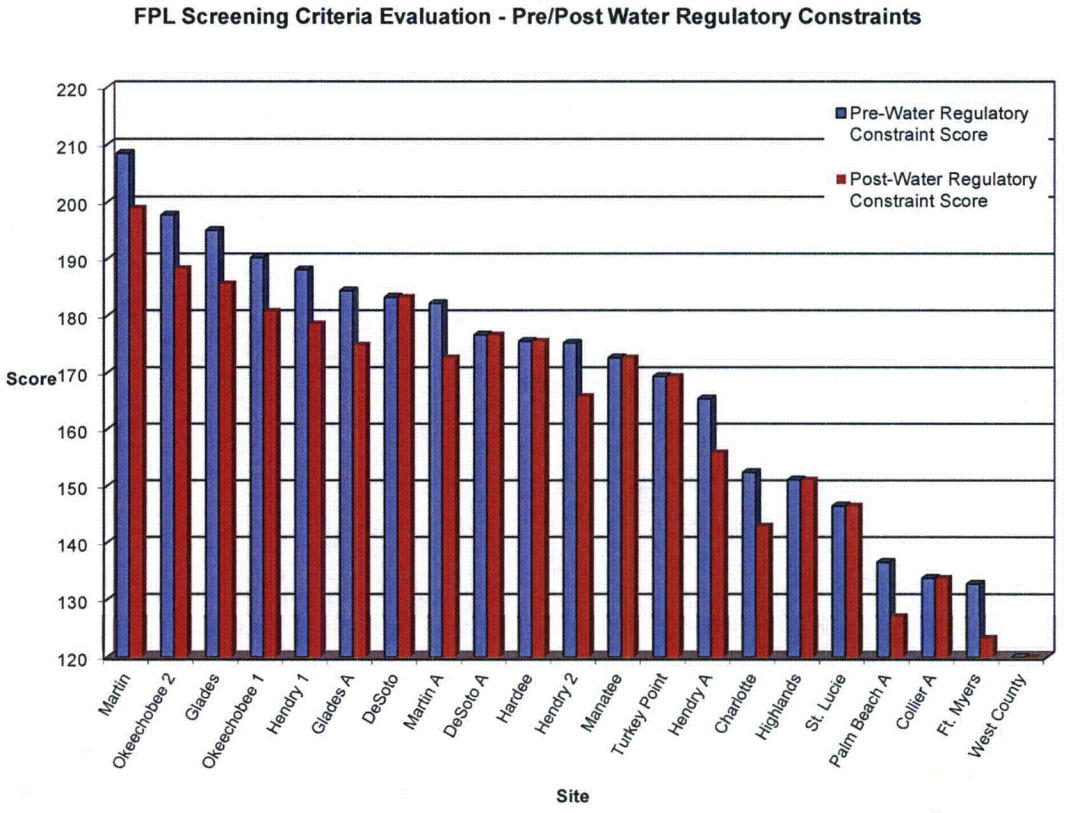

Figure 1. Modified Screening Criteria Results

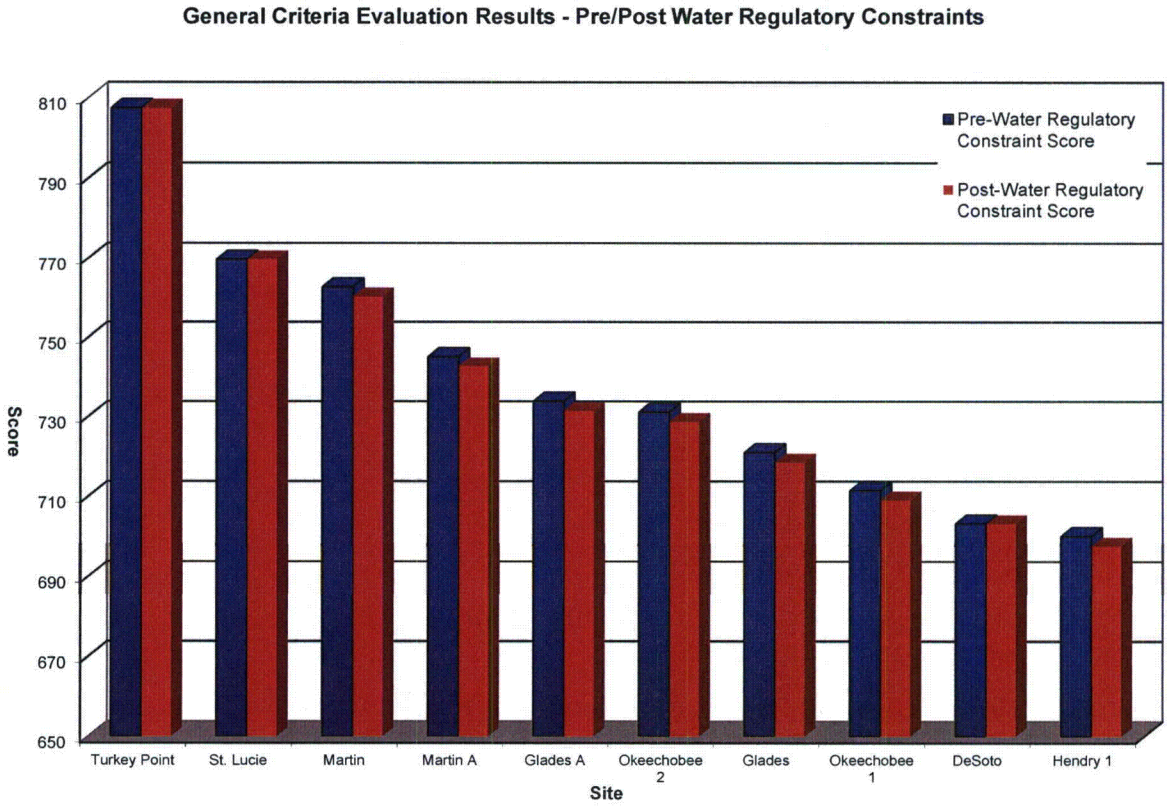

Figure 2. Modified General Siting Criteria Results

ENCLOSURE 2

Alternative Site Analysis – Turkey Point Units 6 & 7

Effect of Regional Screening Buffer Distance

Alternative Site Analysis – Turkey Point Units 6 & 7
Effect of Regional Screening Buffer Distance

The NRC has challenged the reasonableness of FPL's site selection process in terms of its capability to identify the best sites that could reasonably be found in the ROI. In particular, the NRC has questioned whether additional viable sites could be found that would be located inland from the coast, but use seawater as the cooling water supply. A specific question was raised regarding whether the 10-mile buffer around water sources used in regional screening (i.e., limiting the cooling water pumping distance for sites accessing the Atlantic Ocean or the Gulf of Mexico to 10 miles) unduly restricted FPL's identification of candidate areas such that potential sites such as these were overlooked. In response to these concerns, additional analyses regarding coastal cooling water supply scenarios were conducted. This document describes this process and the results of the expanded analyses.

Generic Issues with Seawater Use at Inland Sites

Use of seawater (Atlantic Ocean or Gulf of Mexico supplies) as a cooling water supply is met with unique challenges that freshwater or reclaimed water sources do not face. First, total dissolved solids (TDS) concentrations of seawater supplies are significantly greater (>35,000 ppm [http://oceanservice.noaa.gov/education/kits/estuaries/media/supp_estuar10c_salinity.html]) than freshwater/reclaimed supplies or high TDS groundwater supplies (10,000 ppm). Use of seawater in a cooling tower system could have significant effects on vegetation surrounding inland locations without extensive treatment (commonly reverse osmosis (RO)) prior to use. The extent of treatment (a cooling system operational efficiency determination) would have a direct effect on the resulting TDS concentration and the number of cooling water cycles of concentration, and subsequently, the cooling water quantities required. When compared to the use of groundwater from the Avon Park Producing Zone (APPZ) as a backup supply (as proposed under cooling water supply Scenario 3 described in the response to eRAI 6353, Question 11), treatment of seawater would require more energy and equipment to treat seawater as compared to brackish water, and would result in greater environmental impacts due to the increased treatment requirements (e.g., larger treatment facility, greater volume of wastewater generated requiring disposal). The location of the treatment facility – nearer the plant site or nearer the intake/coast (to minimize the volume of water pumped inland – may also affect the degree of impacts occurring on the coast. A coastal location would be beneficial in reducing pumping and pipeline costs associated with transferring the water to sites located far from the coast. However, direct water discharge of the RO reject water would be difficult because Florida water quality standards limit chloride concentrations to 10 percent above background. Any disposal system at the coast would require deep injection wells, blending with an existing once-through power plant discharge (e.g., St. Lucie), or a very efficient offshore diffuser system to dispose of the RO reject water.

Large pumping distances to supply seawater to inland sites could also result in increased environmental impacts from pipeline/right-of-way construction, maintenance, and operation

Large pumping distances to supply seawater to inland sites could also result in increased environmental impacts from pipeline/right-of-way construction, maintenance, and operation (as previously described in the response to eRAI 6353, 9.3.1-4, submitted December 12, 2012, L-2012-440).

Further, additional regulatory challenges would include the need for a joint Environmental Resource Permit/Section 404 Dredge and Fill Permit providing Florida Department of Environmental Protection (FDEP) and U.S. Army Corps of Engineers (USACE) regulatory approval of the RO facility. Construction of the pipeline would require extensive easement acquisition involving potentially hundreds of individual landowners, FDEP and Corps authorizations, as well Section 7 consultation with the U.S. Fish and Wildlife Service (USFWS). In order to comply with the entrainment and impingement requirements under Section 316(b) of the Clean Water Act, the ocean intake for the RO system would need to include technologies such as radial collector wells or take water from an existing once through power plant discharge. A radial collector well system would require regulatory approval through the South Florida Water Management District (SFWMD), FDEP, USACE, and Section 7 consultation with the USFWS and National Marine Fisheries Service.

Additional issues with seawater use at inland sites relate to challenges to pipeline construction and operation within heavily populated areas and sensitive coastal and marine areas and include the following. As noted below, some or all of these issues will arise at virtually every location along the south Florida coast.

- Excavation, placement and burial of long collection pipes or systems could be ecologically (and possibly other ways) damaging to the sea floor and associated benthic communities.

- Disturbance of significant environmentally sensitive areas could occur as a result of pipeline construction and maintenance. These environmentally sensitive areas include both open marine (depending on how far intake and discharge pipelines extend) and coastal environments. Marine and coastal habitat may include critical habitat set aside to protect federally protected species (e.g., nesting for sea turtles) as well as essential fish habitat set aside to protect and sustain commercially harvested species. Important coastal habitat can include wetlands, saltwater marshes, mangrove estuaries, hardwood hammocks, and sandy barrier islands; coastal areas also provide important habitat for migrating wintering and resident waterfowl areas.

- Entrainment and impingement of environmentally sensitive or commercially harvested species may result from operation of the cooling water supply system. The ocean intake for the RO system would have to include technologies such as radial collector wells or taken from an existing once through power plant discharge (e.g., St. Lucie) in order to comply with the entrainment and impingement requirements under CWA Section 316(b).

- Disturbance to densely populated areas along the coast associated with pipeline construction (including acquisition of right-of-way) and maintenance.

Area-Specific Issues with Seawater Use at Inland Sites

Southeastern Florida Coast (Atlantic Ocean access): A significant barrier to use of seawater in southeastern Florida is the presence of heavily populated/urbanized areas (Miami and the greater metropolitan area) that could make acquisition of a pipeline right-of-way difficult. Additionally, Everglades National Park (and associated wetlands) is located in close proximity (primarily west) to inland siting areas in this portion of the state. Much of the inland areas are also covered in high quality wetlands (e.g., part of the Everglades Wildlife Management Area/Conservation Area No. 3) which could be adversely impacted by facility development. Finally, in preparing the Augmentation Analysis, and in responding to an NRC Request for Information (RAI) (eRAI 5588, 9.3.1-16, submitted September 1, 2011, L-2011-336), part of this area (i.e., relating to candidate area CA-14 and areas to the west) were examined closely to identify any potential sites that could take advantage of reclaimed water in the south Miami area, but no potential sites beyond Turkey Point were identified. The results are the same if coastal water supplies are considered at an inland site in this area. Any potential site would be subject to the same restrictions in using coastal water from the Bay/Biscayne National Park as Turkey Point, and would offer no advantages to siting at the nearby existing Turkey Point site. Cooling tower drift (with seawater as a cooling water source) at inland locations could also have potentially adverse effects on the sensitive freshwater habitats found in the Everglades.

East-Central Florida Coast (Atlantic Ocean access): The area in this region within 10 miles of the Atlantic Ocean was the subject of a prior RAI response (eRAI 6353, 9.3.1-6, submitted December 12, 2012, L-2012-440). That response stated, "... pipeline construction through densely populated coastal communities (including Indian River Shores and Vero Beach) would be required, and availability of land for acquisition of new rights-of-way for construction of a new water pipeline is anticipated to be limited. Additionally, the Archie Carr National Wildlife Refuge and the Pelican Island National Wildlife Refuge are located in the area, which may complicate access to the Atlantic Ocean for cooling water purposes. Therefore, although this area passed through the regional screening as a viable siting area, it was not identified as a candidate area due to limitations in accessing the identified cooling water source." Expanding the maximum pumping distance beyond 10 miles would not alleviate the issues associated with accessing the Atlantic Ocean as a cooling water source. Other challenges include extensive wetlands found throughout inland areas (e.g., throughout western Brevard and Indian River Counties), which could be difficult to avoid in locating a potential plant site. Expanding on the ecological challenges associated with access to the Atlantic Ocean, the cooling water supply pipeline would likely have to cross the Indian River Aquatic Reserve, which runs the length of the coastline in this area and is the most biologically diverse estuary in the United States; it includes some of the most extensive sea grass beds, including the federally threatened Johnson's seagrass. Valuable sea turtle nesting habitat is also found in this area, including that associated with the Archie Carr National Wildlife Refuge, which includes the most significant area for loggerhead sea turtle nesting in the western hemisphere as well as the

most significant area for green turtle nesting in North America – representing 25 to 35 percent of all loggerhead and green turtle nests in the United States [Reference: http://www.fws.gov/archiecarr/].

Southwestern Florida Coast (Gulf of Mexico access): Similar to Southeastern Florida, much of Southwestern Florida is covered in wetlands which could be impacted by development of a facility in these inland areas; eastern Collier County is essentially all wetlands (and includes the Corkscrew Swamp Sanctuary, Fakahatchee Strand Preserve State Park, and Big Cypress National Preserve/Wildlife Management Area). The previously identified Collier A potential site was selected to access the Gulf of Mexico for its cooling water supply and was chosen in an effort to avoid major wetland impacts. The Augmentation Analysis concluded that the Collier A potential site was less suitable than several other potential sites and was not selected as a primary, candidate or alternate site. Cooling tower drift (with seawater as a cooling water source) could also have potentially adverse effects on the sensitive freshwater habitats to the east of the Collier A potential site (Fakahatchee Strand Preserve State Park and Big Cypress National Preserve), and cooling water access to the Gulf would traverse the Rookery Bay Aquatic Preserve.

In addition to the large wetland areas found inland, development in southwestern Florida would be constrained from accessing the Gulf of Mexico due to heavily populated areas along the coast (Naples and Bonita Springs) that could make acquisition of a pipeline right-of-way difficult. Access to the Gulf of Mexico north of Naples would also potentially cross ecologically important coastal barrier islands, mangrove estuaries and the Estero Bay Aquatic Reserve in southwestern Lee County. It should be noted that the previously evaluated Ft. Myers potential site, located in southwestern Florida, was also evaluated in the Augmentation Analysis. Ft. Myers is located adjacent to the Caloosahatchee River inlet off of the Gulf of Mexico. Similar to the Collier A potential site, the Ft. Myers potential site was determined to be less suitable than several other sites and was not carried forward as a primary, candidate or alternate site.

West-Central Florida Coast (Gulf of Mexico access): While not explicitly identified as a candidate area in the Augmentation Analysis, the Charlotte potential site was selected and analyzed in this inland area, having been identified by FPL corporate real estate as a potentially available greenfield site. Like the Collier A and Ft. Myers potential sites, however, it was not carried forward as a primary, candidate or alternate site. The prior site evaluation examined use of freshwater cooling sources at this site; use of seawater at this site would not be expected to make this site significantly more suitable/reasonable. Additional searches for potential sites in this inland area would seem to offer no advantages in terms of easier access to the Gulf of Mexico since the area lies east of coastal areas previously evaluated as part of candidate area CA-5 and the coastal portion of candidate area CA-1. Pumping water from the coast to this inland area would involve greater distance and potentially greater environmental impacts.

The northern reach of this inland area includes the Manatee potential site. While not explicitly identified as a candidate area in the Augmentation Analysis, the Manatee potential site was selected and analyzed because it is an existing FPL plant site with sufficient land.

The siting study examined use of seawater at this site via Tampa Bay, and this site would seem to have advantages (e.g., water, land ownership, existing infrastructure) over areas further inland. The Augmentation Analysis concluded the Manatee potential site was less suitable than several other potential sites, and it was not carried forward as a primary, candidate, or alternate site. The inland areas to the south of the Manatee potential site are less developed, although a large portion of the area east of Sarasota includes Sarasota County's two largest lakes, extensive river marsh, and 12 miles of the Wild and Scenic Myakka River, as well as a state park and one of the largest tracts of dry prairie habitat in southwest Florida. [Reference: Florida Wildlife Viewing Guide, Susan Cerulean and Ann Morrow. Published by Falcon Guide, 1998.] Access to this inland area from the Gulf of Mexico also would be significantly constrained due to heavily populated areas (Venice, Sarasota, and Bradenton) along the west-central Florida coastal portion of the Gulf of Mexico. Heavy urbanization has overtaken the coastal portions of Sarasota and Manatee Counties, and availability of land for acquisition of new rights-of-way for construction of a new water supply pipeline is anticipated to be limited. Access from the coast would also have to cross barrier islands (some also heavily populated, e.g., Siesta and Longboat Key) and important mangrove forested shorelines (e.g., Sarasota Bay).

Conclusions

Viable siting areas that were not eliminated in the regional screening (within 10 miles of seawater cooling supplies) were identified in the Augmentation Report, and the majority of these areas were excluded from further consideration due to barriers – primarily population and ecologically sensitive coastal habitat – limiting access to the seawater supplies. In addition, as noted previously, inland sites in these areas evaluated previously as potential sites were found to be less suitable than other sites (including evaluation criteria not directly related to cooling water supplies) and were not carried forward as primary, candidate or alternate sites.

In particular, FPL's siting study evaluated four potential sites using seawater as a potential cooling water source (Turkey Point, St. Lucie, Manatee, and Collier A), and concluded that two greenfield sites (Manatee and Collier A) were less suitable than other potential sites identified. The analysis contained herein concludes that expanding the maximum pumping distance for seawater supplies would not result in the identification of more suitable/reasonable potential sites than those previously identified and evaluated. Any such sites would not be competitive with the existing alternative sites in terms of environmental suitability.

Expanding the maximum pumping distance to the seawater source does not remove the seawater access barriers – which are typically found within the first mile from the coast, and only increases the required pumping distance, resulting in potentially greater environmental impacts associated with pipeline construction. Use of seawater as a cooling water source also introduces potentially significant cooling tower drift impacts on sensitive habitats and/or agricultural lands (e.g., crops) found at inland site that are not acclimated to saline conditions. As such, seawater sources would need to be treated prior to use to reduce the concentration of salts/TDS. Construction and operation of a treatment facility and disposal

wastewaters introduces additional challenges and potential environmental impacts. Use of seawater supplies also generally puts sensitive coastal and marine environments at greater risk of adverse impact. Finally, the regulatory hurdles for use of seawater as a cooling water supply would be at least as great as those for obtaining water at inland sites.

As this analysis demonstrates, FPL's site selection process was reasonable in terms of addressing the potential for identifying inland sites using seawater for a cooling water supply. In particular, the regional screening process was not unduly restrictive by establishing a maximum cooling water supply pumping distance of 10 miles. Inland sites using seawater for cooling water would not be competitive with the existing sites identified as alternatives for Turkey Point, and the existing alternatives remain among the best that can reasonably be found in the Region of Interest.

NRC RAI Letter No. 121114 Dated November 14, 2012

ESRP Section: EIS 9.3.1 – Alternative Site Selection Process

Application Section: ER

NRC RAI Number: 3 (eRAI 6879)

The 404(b) (1) guidelines analysis submitted to USACE by FPL included practicability of land ownership as one of its criteria. 40 CFR 230.10(a)(2) of the 404(b)(1) guidelines states that an "area not presently owned by the applicant that could reasonably be obtained, used, expanded, or managed to fulfill the basic purpose of the proposed activity may be considered if it is otherwise a practicable alternative." Explain how the land ownership issue was applied to the evaluation of the practicability of the sites and how any associated issues of being impracticable relate to or affect the evaluation of alternative sites under the National Environmental Policy Act (NEPA).

FPL RESPONSE:

The practicability of alternative sites for construction and operation of two AP1000 nuclear units was evaluated in light of the availability, costs, existing technology and logistical requirements to fulfill FPL's overall Project purpose. The overall purpose of the Project is to provide baseload generating capacity in the most cost-effective manner (as required by the Florida Public Service Commission), while minimizing emissions of greenhouse gases, providing fuel diversity, and addressing the generation/load imbalance in Miami-Dade and Broward counties.

Land ownership and ability to acquire land is one practicability factor underneath the "availability" category. Land use/zoning and presence or absence of existing infrastructure are also relevant factors that are considered within the category of "availability". Availability is a distinct and separate practicability category under Section 404(b)(1) and it was evaluated as such in the October 2011 alternatives analysis. None of the broad practicability categories identified in Table 5.1-1 of the Section 404(b)(1) analysis (availability, cost, technology, and logistics) independently led to a determination of a site as not practicable. Rather than a singular focus on availability, each practicability category was evaluated holistically with other practicability factors leading to a determination that particular sites, although viable and potentially licensable under the NRC's NEPA regulatory guidance, were not practicable alternatives to best fulfill the overall project purpose. Please refer to the response to NRC RAI No. 2 (eRAI 6879) for further discussion regarding practicability of sites for purposes of Section 404(b)(1) review and viable, licensable sites for purposes of the NEPA review.

Each of the broad practicability categories and specific factors are described in Section 5.1 of the 404(b)(1) analysis. The availability category was described as follows:

> "Availability of an alternative site is based on the ability to acquire the site if not currently under FPL ownership. Once acquired the site must have the proper land use zoning for development of a nuclear power plant. The availability of existing infrastructure to support a nuclear power plant facilitates the ability of the site to fulfill the overall Project purpose."

For the availability category, practicability factors included evaluations of land ownership, appropriate land use, and presence or absence of existing infrastructure. The land ownership factor included evaluation of FPL owned properties as well as those that are not presently owned by FPL which could reasonably be obtained. Furthermore, the land ownership factor included evaluation of the rights-of-way (ROW) required for associated linear facilities (transmission lines and access roads) and additional lands required for construction of reservoirs at the inland sites. Where an alternative site allows for utilization of existing transmission line ROW, this reduces or eliminates the need for acquisition or condemnation of property, reduces associated costs, and reduces environmental impacts resulting from clearing of new ROW. Appropriate land use designation was evaluated to demonstrate land use and zoning consistency in compliance with county and/or municipalities' Comprehensive Plans required by the State of Florida (Chapter 163, F.S.). If an alternative site cannot demonstrate consistency with land use or zoning for a nuclear power plant, a series of local and/or county approvals would be necessary, which could jeopardize the ability to construct and operate the Project at the alternative site. The third practicability factor under the category of availability is the presence or absence of existing infrastructure, which facilitates or impedes the ability of the alternative site to achieve the Project purpose in the most cost-effective manner. This is especially important for existing nuclear power plant sites, in accordance with NUREG-1555, which considers the advantages already present at existing nuclear facilities that have been previously reviewed by the NRC and found to be suitable for construction and operation of a nuclear power plant and/or demonstrated to be environmentally satisfactory on the basis of operating experience.

As has been noted, availability is not merely a function of whether an applicant owns an alternative site, but whether the applicant could reasonably obtain the site. Yet, it should be noted that courts recognize that the USACE is not a "business consulting firm," and that it is "in no position to conduct a feasibility study of alternative sites . . ., a study that would have it both evaluate the applicant's business needs and determine the availability of the necessary permissions from the owners of the riparian land at the various sites." D'Olive Bay Restoration and Preservation Committee, Inc. v. U.S. Army Corps of Engineers, 513 F. Supp. 2d 1261, 1269 (S.D. Ala. 2007) (citing River Road Alliance v. U.S. Army Corps of Engineers, 764 F.2d 445, 452-53 (7th Cir. 1985), cert. denied, 475 U.S. 1055 (1986)). There is a presumption given to the applicant that the project located at the preferred location was the result of appropriate economic consideration and marketplace need. See 33 C.F.R. § 320.4(q) ("When a private enterprise makes application for a permit, it will generally be assumed that appropriate economic evaluations have been completed, the proposal is economically viable, and is needed in the marketplace."). An unowned alternative site is only a "practicable alternative" under the Guidelines if it could "reasonably be obtained." 40 C.F.R. § 230.10(a)(2). The mere presence of an alternative site is not sufficient to render it "available" to the applicant. See City of Shoreacres v. Waterworth, 420

F.3d 440, 449 (5th Cir. 2005) ("A mere, unsupported theoretical possibility of acquiring the alternative site . . . does not constitute a showing that the alternative site is reasonability obtainable."). Additionally, a site can be unavailable if a similar proposed activity already is approved for it. See Id. (discounting alternative site that was already permitted for a cargo and cruise ship terminal by another developer/owner); Nat'l Audubon Soc'y v. Hartz Mountain Dev. Corp., 14 Envtl. L. Rep. (Envtl. L. Inst.) 20,724 (D.N.J. Oct. 24, 1983) (discounting the availability of sites that could not be "acquired").

While availability is a distinct and separate criteria under Section 404(b)(1), the question of availability also blends into the practicability analysis when considering the feasibility of alternative sites in light of technological, cost, and logistical constraints as the cost of acquiring the land is a major component of the practicability of an alternative. For example, alternative sites located away from the preferred project area may be considered not practicable in light of demonstrated increased costs due to factors such as noncontiguous ownership, and lack of ownership. Pamlico-Tar River Found. v. U.S. Army Corps of Engineers, 329 F. Supp. 2d 600, 613 (E.D.N.C. 2004). Thus, under Section 404(b)(1), "availability" is evaluated at many levels, starting with the theoretical possibility of whether the land mass and footprint needed is physically present and capable of being obtained and whether the land could be conformed for the specific project purpose. Availability is then assessed in terms of whether the land can be obtained economically as part of the feasibility analysis (i.e. the availability of the land once answered in the affirmative under the "availability" factor of 40 C.F.R. § 230.10(a)(2) must be tempered with the question of available at what cost under the second "feasibility" factor).

As explained in FPL's June 28, 2013 response to a USACE request for additional information (Reference 1), the practicability of the Martin, Glades and Okeechobee 2 sites was impacted by these availability factors. Particularly, the lack of FPL-owned land at the Glades and Okeechobee 2 sites, and insufficient FPL-owned land at the Martin site, the inappropriate land use designations at all three sites, and the lack of existing nuclear infrastructure at all three sites, were all factored into the comparative practicability decision. This does not infer that these sites found not to be "practicable" are not potentially licensable or viable alternative sites for purposes of the NEPA review by the NRC. As is described in ER Section 9.3.2, land ownership and the expected difficulty of acquiring non-FPL-owned sites were evaluated as factors in the site selection process, but FPL did not limit the scope of its NEPA site selection process or its ultimate candidate areas to areas that FPL owns, or where designated land use is appropriate and nuclear infrastructure is already in place. In the event that a candidate site that is not owned by FPL was determined to be environmentally preferable, land ownership and acquisition cost, zoning, and infrastructure issues would again become relevant in the next step of the NRC's independent comparison taking into account economic and technological factors.

The evaluation of the availability factor, including land ownership issues, was not the sole factor leading to the determination of impracticability for purposes of the Section 404(b)(1) review. Moreover, as discussed in response to Question 2 above, the availability analysis conducted under the CWA is not synonymous with the NEPA "reconnaissance-level" review needed to identify potential candidate sites.

This response is PLANT SPECIFIC.

References:

Reference 1: Letter from M. Raffenberg, FPL, to I. Sotelo, USACE, dated June 28, 2013.

ASSOCIATED COLA REVISIONS:

There are no COLA changes identified as the result of this response.

ASSOCIATED ENCLOSURES:

None

NRC RAI Letter No. 121114 Dated November 14, 2012

ESRP Section: EIS 9.3.1 – Alternative Site Selection Process

Application Section: ER

NRC RAI Number: 4 (eRAI 6879)

The 404(b)(1) guidelines analysis submitted to USACE by FPL appears to indicate, on page 68, that it is unlikely that FPL could obtain permission to build the necessary reservoir at the Martin site because of County regulations. Please explain how the Martin site could be considered a viable alternative site for the purposes of the NRC's analysis.

FPL RESPONSE:

Although the stringent wetland protection regulations of Martin County render the Martin alternative site less preferable in terms of appropriate land use and consistency with county development regulations, this factor alone did not result in the Martin alternative site being considered not practicable for purposes of the Section 404(b)(1) review, nor would this factor render the site not potentially licensable or viable for purposes of the NEPA review by the NRC.

Page 68 of FPL's 404(b)(1) analysis does not state it would not be possible to build the necessary reservoir at the Martin site. Instead, it simply states that the reservoir would not qualify for the linear public utility facilities waiver identified in Section 4.3.D of the Martin County Land Development Regulations. Linear facilities, as defined by the Florida Board of Trustees of the Internal Improvement Trust Fund, include electric transmission and distribution facilities, telecommunications transmission and distribution facilities, pipeline transmission and distribution facilities, public transportation corridors, and related appurtenances. The specific waiver language and referenced definition of public utility are provided below:

Martin County Land Development Regulations, Section 4.3 Waivers and Exceptions for Delineated Wetlands

4.3.D. Waivers and exceptions for public utilities. *An exception from these regulations may be granted where the applicant demonstrates that encroachment of wetlands, or wetland buffers, as defined in this Land Development Regulation, is necessary for the construction and/or maintenance of a public utility, as defined in F.S. § 366.02, subject to the following conditions:*

1. *The construction or maintenance activity is for a linear facility that cannot be accomplished without wetland impacts;*

2. *The utility has demonstrated that the encroachment is necessary and that no reasonable upland alternative exists;*

3. *The activity is designed and located in such a manner that the least amount of damage to the wetlands is assured;*

4. *The applicant has submitted a proposal for reforestation and/or mitigation, to offset the impact;*

5. *Permits have been received from the appropriate State and Federal environmental agencies and copies of those permits have been submitted to Martin County, prior to issuance of the County permit;*

6. *The Martin Soil and Water Conservation District or the Growth Management Department has reviewed the application and has determined in writing that the proposed encroachment is the least damaging alternative;*

7. *The applicant has provided proof of ownership or easement over the property to be encroached;*

8. *A plan has been approved by the Growth Management Department for the removal of undesirable exotic vegetation as part of the restoration and/or mitigation proposed in subparagraph 4., above;*

9. *The applicant has demonstrated that the construction and/or maintenance activity will maximize the preservation of native indigenous vegetation; and*

10. *The utility demonstrates that, should fill be required, the minimum necessary is used to assure reasonable access to the property or construction activity.*

F.S. § 366.02 Definitions.—As used in this chapter:
(1) "Public utility" means every person, corporation, partnership, association, or other legal entity and their lessees, trustees, or receivers supplying electricity or gas (natural, manufactured, or similar gaseous substance) to or for the public within this state; but the term "public utility" does not include either a cooperative now or hereafter organized and existing under the Rural Electric Cooperative Law of the state; a municipality or any agency thereof; any dependent or independent special natural gas district; any natural gas transmission pipeline company making only sales or transportation delivery of natural gas at wholesale and to direct industrial consumers; any entity selling or arranging for sales of natural gas which neither owns nor operates natural gas transmission or distribution facilities within the state; or a person supplying liquefied petroleum gas, in either liquid or gaseous form, irrespective of the method of distribution or delivery, or owning or operating facilities beyond the outlet of a meter through which natural gas is supplied for compression and delivery into motor vehicle fuel tanks or other transportation containers, unless such person also supplies electricity or manufactured or natural gas.

Construction of the 3000-acre reservoir at the Martin site would impact approximately 2,689 acres of citrus groves and 20 acres of wetlands, some of which consist of man-made drainage and irrigation ditches that may be exempt in accordance with Section 4.2.A, Martin County Land Development Regulations. In addition, options are available to apply for environmental waivers through the Martin County Growth Management Department Environmental Division in cases where all reasonable use of the property is eliminated due to wetland protection requirements, consistent with Section 4.3.I of the Martin County Land Development Regulations. Therefore, the County restriction on wetland impacts does not necessarily mean the reservoir could not be constructed at the Martin alternative site.

This response is PLANT SPECIFIC.

References:

None

ASSOCIATED COLA REVISIONS:

There are no COLA changes identified as the result of this response.

ASSOCIATED ENCLOSURES:

None