TurkeyPointCEm Resource

From: Mulkey, Cindy [Cindy.Mulkey@dep.state.fl.us]
Sent: Monday, August 16, 2010 4:05 PM
To: TurkeyPointCOLEIS Resource
Cc: Halpin, Mike; Seiler, Ann; Culp, Stephanie; Sweeney, Pamela
Subject: FPL TP 6 & 7 Scoping Comments
Attachments: BBAP comments on FPL Units 6 and 7_2nd round of completeness_28May2010.docx; FPL Turkey Point Nuclear Units 6 and 7_2940_081610.pdf

Chief,
Rules, Announcements and Directives Branch,
Division of Administrative Services

The Department of Environmental Protection's (Department's) Office of Intergovernmental Programs regularly coordinates the Department's position on the consistency of federal projects with departmental policies and regulations, and provides comments to the Florida State Clearinghouse in accordance with the National Environmental Policy Act (NEPA). However, power plant projects are processed through the DEP Siting Coordination Office.

The attached comments have been forwarded to this office. Although these comments may not expand the "scope" of the project, I am passing them along for your consideration.

Cindy

Cindy Mulkey
Engineering Specialist
Department of Environmental Protection
Siting Coordination Office
Mail Station 48
3900 Commonwealth Blvd.
Tallahassee, Florida 32399
Phone: 850-245-2175
FAX: 850-245-2020

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Comment Number: 17

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From: Mulkey, Cindy

Created By: Cindy.Mulkey@dep.state.fl.us

Recipients:
"Halpin, Mike" <Mike.Halpin@dep.state.fl.us>
Tracking Status: None
"Seiler, Ann" <Ann.Seiler@dep.state.fl.us>
Tracking Status: None
"Culp, Stephanie" <Stephanie.Culp@dep.state.fl.us>
Tracking Status: None
"Sweeney, Pamela" <Pamela.Sweeney@dep.state.fl.us>
Tracking Status: None
"TurkeyPointCOLEIS Resource" <TurkeyPointCOLEIS.Resource@nrc.gov>
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Florida Department of
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Biscayne Bay Aquatic Preserve
Biscayne Bay Environmental Center
1277 NE 79th St. Causeway
Miami, Florida 33138-4206

Charlie Crist
Governor

Jeff Kottkamp
Lt. Governor

Michael W. Sole
Secretary

DATE: May 28, 2010

TO: Cindy Mulkey, Engineering Specialist
Siting Coordination Office

THROUGH: Lee Edmiston, Director
Office of Coastal and Aquatic Managed Areas

FROM: Pamela Sweeney, Environmental Specialist II
Biscayne Bay Aquatic Preserves
Office of Coastal and Aquatic Managed Areas

SUBJECT: Comments following 2nd Round Completeness Responses regarding FPL Units 6 & 7 Site Certification Application Review

Part of the proposed project is located within the boundaries of Biscayne Bay Aquatic Preserve, as described in Chapter 258.397 Florida Statute (F.S.) and Chapter 18-18 Florida Administrative Code (F.A.C.) and is located in Miami-Dade County.

The Biscayne Bay Aquatic Preserve (BBAP) was established to preserve Biscayne Bay in an essentially natural condition so that its biological and aesthetic values may endure for the enjoyment of future generations. Preservation and promotion of seagrass habitat is specifically named in the 'Intent' of the Biscayne Bay Aquatic Preserve Rule, Paragraph 18-18.001(f), F.A.C. Furthermore, it was the intent of the Legislature upon designating and establishing Biscayne Bay an aquatic preserve, including Card Sound, "…that Biscayne Bay be preserved in an essentially natural condition so that its biological and aesthetic values may endure for the enjoyment of future generations" Chapter 258.397, F.S.

The project is located in the waters of the BBAP, which is a Class III Outstanding Florida Waters, pursuant to Rule 62-302.700(9)(h)5 & 6. This rule states, "It shall be the Department [of Environmental Protection] policy to afford the highest protection to Outstanding Florida Waters and Outstanding National Resource Waters." It defines this as "no degradation of water quality."

BBAP staff has identified several areas of the FPL Site Certification Application that lack sufficient data and/or pertinent information to substantiate claims that there will be little or no adverse impacts to the BBAP, thereby prohibiting any further evaluation of the proposed activities until such information can be obtained. In reviewing the Site Certification Application for completeness, staff cited authority in Chapter 18-18 F.A.C. and 258.397 F.S. that established the Biscayne Bay Aquatic Preserve, Chapter 18-21 F.A.C. that rules Sovereignty Submerged Lands Management as well as the Outstanding Florida Water designation pursuant to rule 62-302.700(9)(h) 5 and 6. Staff also employed Environmental Control 403.509(3)(e) and (f) F.S. which states that "…In determining whether an application should be approved in whole, approved with modifications or conditions, or denied, the board, or secretary when applicable, shall consider whether, and the extent to which, the location, construction, and operation of the electrical power plant will…(e) Effect a reasonable balance between the need for the facility as established pursuant to s. 403.519 and the impacts upon air and water quality, fish and wildlife, water resources, and other natural resources of the state resulting from the construction and operation of the facility" as well as "…(f) Minimize, through the use of reasonable and available methods, the adverse effects on human health, the environment, and the ecology of the land and its wildlife and the ecology of state waters and their aquatic life."

Each of the questions or requests that follow are categorized under Groundwater Issues, Surface Water and Benthic Resources, and Conditions of Certification and can be qualified by the authority cited above.

Groundwater Issues

Concerns still remain regarding unknowns related to the Radial Collector Well (RCW) System including, but not limited to: possible impacts to the Bay including benthic flora and fauna; salinity; and possible impacts of the radial collector wells on the freshwater input to the bay, flora and fauna. These issues and concerns will require further review and discussion. Notably, questions related to 2FDEP-VI(CAMA)-1, -2, -4, -5, -6, -7 remain. We look forward to receiving the additional information to be sent with July 15, 2010 response to better understand these issues and may have further questions after reviewing the new information.

New Groundwater Issues requests/questions relating to FPL's responses:

1. 2FDEP-VI(CAMA)-1: The seepage meter data provided (see excerpt below) indicates that the bay bottom experiences a net loss of freshwater flow, as the "All Days No Pumping" scenario produces a higher flow rate than the "All Days Active Pumping" at all but two meters. Please provide the field data for the "7 day APT Test" and "All Days Active Pumping" as well as all pump tests conducted within the footprint of the proposed units (PW-6U, PW-7U, PW-6L, and PW-7L) including Aqua Trolls data logger results from all observation wells,

water quality analyses, and field measurements (i.e., depth to water readings, temperature, conductivity, flow rates, etc.).

2. Per 2FDEP-VI(CAMA)-2: Please provide further information regarding the operation of the RCWs, including the frequency at which the following readings will be collected; pumped water volume rates, water elevations inside the caissons, and water sample parameters, including a map to scale showing the layout of the RCW laterals and the Biscayne Bay Aquatic Preserve boundaries including the proposed coordinates of the position of the RCWs and the projected cone of influence of the full-scale operation of the RCWs, and a definitive depth at which the laterals will be placed as well as their length and diameter.

Seepage Meter Data Provided:

		Meter Number											
		11 (S. Array)	12 (S. Array)	1	3	7	2	4	8	5	6	9	10
	Distance from Pump	230'	230'	265'	255'	255'	290'	280'	280'	305'	330'	500 '	900'
7 Day APT Test: Pumping	Minimum	-0.0063	0.0103	0.0017	-0.0013	0.0066	0.0084	-0.0025	0.0072	0.0002	0.0000	0.0016	-0.0035
	Maximum	0.0124	0.0314	0.0173	0.0169	0.0305	0.0276	0.0176	0.0251	0.0195	0.0052	0.0047	0.0055
	Average	0.0081	0.0163	0.0051	0.0027	0.0236	0.0167	0.0056	0.0170	0.0078	0.0015	0.0029	0.0019
2 Day Post APT Test: Not Pumping	Minimum	0.0081	0.0131	-0.0002	0.0002	0.0202	0.0220	0.0069	0.0235	0.0181	0.0006	0.0037	-0.0014
	Maximum	0.0143	0.0174	0.0049	0.0009	0.0256	0.0267	0.0090	0.0305	0.0245	0.0055	0.0055	0.0067
	Average	0.0112	0.0153	0.0024	0.0006	0.0229	0.0243	0.0079	0.0270	0.0213	0.0030	0.0046	0.0026
All Days Active Pumping (n=14)	Minimum	-0.0063	0.0095	-0.0017	-0.0013	0.0066	0.0059	-0.0025	0.0072	0.0002	0.0000	0.0016	-0.0035
	Maximum	0.0132	0.0314	0.0173	0.0214	0.0374	0.0276	0.0176	0.0316	0.0195	0.0055	0.0100	0.0115
	Average	0.0085	0.0165	0.0044	0.0093	0.0253	0.0153	0.0060	0.0198	0.0064	0.0023	0.0046	0.0039
All Days No Pumping (n=12)	Minimum	0.0025	0.0087	-0.0015	0.0002	0.0136	0.0069	0.0025	0.0018	-0.0018	-0.0002	0.0019	-0.0014
	Maximum	0.0146	0.0431	0.0182	0.0227	0.0581	0.0267	0.0126	0.0305	0.0245	0.0097	0.0084	0.0104
	Average	0.0086	0.0210	0.0051	0.0105	0.0288	0.0167	0.0055	0.0221	0.0041	0.0041	0.0047	0.0056

3. 2FDEP-VI(CAMA)-4: Documentation for the Salinity Impact Analysis is incomplete. Please provide published references for the use of an equilibrium mixing chamber model in estuarine environments. Please provide published references and/or supporting documentation for the equations applied and assumptions made for the SFWMD B-63b Mixing Chamber Analysis model

(steady state conditions are assumed). Please include published references and/or supporting documentation for the adjustments used to estimate the input parameters provided in the Scenario 1 and Scenario 2 Table of the Salinity Impact Analysis.

4. 2FDEP-VI(CAMA)-5: This question was not adequately addressed in FPL's response to CAMA's submission on December 15, 2009. The SFWMD-B-63b spreadsheet does not appear to produce the exact values displayed in the "Scenario 1 & 2" table, which were used to obtain the linear regression equations that predict the 1 square mile and 4 square mile impact. It is stated that "Within ½ mile of the intake (blue line), the RCWs have a slight moderating effect on the salinity (i.e., low salinities are not as low and high salinities are not as high)," but then it is stated that "At 1.0 mile from the intake (green line), there is no measurable impact from the RCWs. This is indicated in the figure by the fact that the green and black lines separate only in a few locations. CAMA staff look forward to clarification related to this discrepancy, and given that the Biscayne Bay Coastal Wetlands projects (part of the Comprehensive Everglades Restoration Plan) seeks to do just the opposite by returning to lower salinities along the shoreline where they currently are variable depending on season, tide and distance from shore, please explain how moderating salinity in any way helps to meet restoration goals, maintains the Biscayne Bay Aquatic Preserve in an essentially natural condition and does not affect salinity values.

5. 2FDEP-VI(CAMA)-6: FPL's response to this question states that "The ocean is the ultimate source of water flowing into the Bay to replace water withdrawn by the radial collector wells. Operation of the radial collector wells does not change precipitation, evaporation or freshwater inflow from upland areas. Therefore, the ocean salinity concentration of 35 ppt should reflect the ocean salinity. It should not represent the seasonally variable salinity within Biscayne Bay." While there is a semi-diurnal tidal phase in Biscayne Bay that is influenced by the ocean, the water that resides in Biscayne Bay in any one basin at any one time is greatly affected by groundwater inflow from the bay bottom and tributary discharges, wind patterns and other variables. Salinities are typically lower along the shoreline, between a few hundred meters to 1000m and during the wet season (Langevin, 2001). The referenced county water quality site, BB41, is a surface water sample site approximately 4 miles west of Turkey Point peninsula and does not reflect a near-shore salinity regime, which fluctuates seasonally. It also does not reflect the salinity at or near the bay bottom, the depths most likely to be impacted by operation of the RCWs. Please provide more accurate data for salinity in the vicinity (such as data collected on a continual basis and particularly in the vicinity of the Turkey Point) and explain how this affects the results possible impacts by the RCWs. Continuous sampling results with a

frequent time-step obtained from the bay bottom are most appropriate in developing a realistic salinity impact analysis, and a bay bottom depth profile represents the depth of most probable impact by the RCWs.

Surface Water and Benthic Resources

1. 2FDEP-VI(CAMA)-7: FPL's response does not adequately address how benthic resources in the footprint of the RCWs and adjacent areas will not be significantly affected given the fact that at least 3% of the water will come from the Biscayne Aquifer, a source of freshwater inputs to the bay bottom, helping to support the benthic community. This may be better addressed after FPL's July 15, 2010 response to 2FDEP-VI(CAMA)-2 is provided.

Five (5) Conditions of Certification were listed in CAMA's December 15, 2009 2nd round of completeness review questions for FPL Units 6 and 7 site certification application response. CAMA reiterates the need to have such conditions considered in future review of this application.

cc: Stephanie Culp, FDEP CAMA, Assistant Director
Gary Lytton, FDEP CAMA, Rookery Bay NERR, Director

References:

Langevin, C.D. (2001). Simulation of groundwater discharge to Biscayne Bay, Southeastern Florida. USGS, Water Resources Investigations Report 00-4251.

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Assistant Executive Director

Karen Ventimiglia
Deputy Chief of Staff

Office of Planning and Policy Coordination
Nancy Linehan
Director
(850) 487-3794
(850) 410-5265 FAX
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32399-1600
Voice: (850) 488-4676

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August 16, 2010

Ms. Laurel Bauer, Acting Chief
Environmental Projects Branch 2
Division of State and Environmental Reviews
Office of New Reactors
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555
TurkeyPoint.COLEIS@nrc.gov

Re: Docket Nos. 52-040 and 52-041, Turkey Point Nuclear Units 6 and 7 Combined License, Miami-Dade County, Florida

Dear Ms. Bauer:

The Florida Fish and Wildlife Conservation Commission (FWC) has reviewed your request for participation in scoping under the National Environmental Protection Act, coordination under the Fish and Wildlife Coordination Act, and for a list of potentially affected State-listed species. Please be aware that the FWC's authorities extend only to fish and wildlife; listed plants are under the authority of the Florida Department of Agriculture and Consumer Services.

The FWC has been actively engaged in reviewing this project under the State's Power Plant Siting Act, coordinated by the Florida Department of Environmental Protection. Our letter (enclosed) dated August 4, 2009, to Mr. Mike Halpin outlines our primary issues of interest. At this point, our questions have not changed substantially from that time because a major area of interest is whether operation of the radial collector wells would cause the karst Biscayne Aquifer to fracture ("frac out"), thereby altering the salinity of the Biscayne Bay and affecting the area's fish and wildlife resources. Staff from Florida Power and Light (FPL) believes that these radial collection wells will not be used for a substantial part of the time that the plant would be in operation, and consequently taken a conservative approach by modeling a scenario during which the radial collector wells would inject water laterally constantly. Other agencies participating in the review and whose staff has the expertise to test the model are doing so, and we are waiting for the results in order to determine the extent to which we may be concerned about the possibility of "frac out" actually occurring.

We appreciate the opportunity to provide input early in your planning process and under the Fish and Wildlife Coordination Act. For a preliminary list of potentially occurring State-listed species, please refer to the enclosed table. If you have any questions or would like to coordinate further, please feel free to contact me at 850-410-5272 or maryann.poole@myfwc.com; if you have any specific questions, please contact Jennifer Goff at 561-625-5122 or Jennifer.goff@myfwc.com.

Sincerely,

Mary Ann Poole

Mary Ann Poole
Commenting Program Administrator

map
ENV 2-11-2/3
FPL Turkey Point Nuclear Units 6 and 7_2940_081610
Enclosures (2)

cc: Mike Halpin, DEP, Tallahassee
Matthew Raffenberg, FPL (Matthew.Raffingberg@fpl.com)
Andrew Kugler, NRC (Andrew.Kugler@nrc.gov)
Tomeka Terry, NRC (Tomeka.Terry@nrc.gov)
Erin McDevitt, FWC, West Palm Beach
Lisa Gregg, FWC, Tallahassee

List of potentially occurring State-listed fish and wildlife species

Common name	Scientific name	State-listing status
Atlantic sturgeon	*Acipenser oxyrinchus*	Species of special concern
American alligator	*Alligator mississippiensis*	Species of special concern
American crocodile	*Crocodylus acutus*	Endangered
Eastern indigo snake	*Drymarchon corais couperi*	Threatened
Least tern	*Sterna antillarum*	Threatened
Limpkin	*Aramus guarauna*	Species of special concern
Snail kite	*Rostrhamus sociabilis plumbeus*	Endangered
Everglades mink	*Mustela vison evergladensis*	Threatened
Florida manatee	*Trichechnus manatus latirostris*	Endangered

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Karen Ventimiglia
Deputy Chief of Staff

Office of Planning and Policy Coordination
Nancy Linehan
Director

(850) 487-3794
(850) 410-5265 FAX
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620 South Meridian Street
Tallahassee, Florida
32399-1600
Voice: (850) 488 4676

Hearing/speech impaired:
(800) 955-8771 (T)
(800) 955-8770 (V)

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August 4, 2009

Mr. Mike Halpin, Administrator
Siting Coordination Office
Florida Department of Environmental Protection
2600 Blair Stone Road, MS 48
Tallahassee, FL 32399

Re: Miami-Dade Co., FPL Turkey Point Nuclear Units 6 and 7, Completeness Review

Dear Mr. Halpin:

The Division of Habitat and Species Conservation, Habitat Conservation Scientific Services Section of the Florida Fish and Wildlife Conservation Commission (FWC) has coordinated our agency's review of the Site Certification Application for the Florida Power and Light Company Turkey Point Nuclear Plant Units 6 and 7 project, and provides the following comments for consideration in the application completeness review.

Project Description

Florida Power and Light Company (FPL) proposes to build and operate two new nuclear generating units (Units 6 & 7), each with an approximate electrical output of 1,100 megawatts, and supporting buildings, facilities, and equipment at a site within the existing Turkey Point plant property boundaries. Associated facilities include a nuclear administration building, training building, and parking area; an FPL reclaimed water treatment facility and reclaimed water pipelines; radial collector wells and delivery pipelines; equipment barge unloading area; an FPL-owned fill source; access roads and bridges; and potable water pipelines. The site is located south of Units 3 and 4 and occupies approximately 300 acres within the existing industrial wastewater facility.

Requested Information

In the Site Certification Application, Volume 1, Chapter 5, the applicant indicates that "no significant adverse impacts to wildlife resources will occur as a result of construction in these [the Site] areas." We recognize that this language may represent FPL's expectation to achieve that goal; however, the application does provide enough information to support that assertion. As far as preliminary fish and wildlife resource assessments are concerned, we recommend the following pieces of information be provided.

Surveys:

- Detailed surveys of all fish and wildlife resources in the vicinity of each proposed component of this project, to include laydown areas for construction equipment; areas that will be temporarily disturbed by excavations; and areas that may potentially be affected by changes in salinity, turbidity and sedimentation due to the operations of project. Please include, but do not limit to: benthic species and habitats (seagrasses, hardbottom, reefs, and associated reef resources), plankton, mangroves, and protected

species (both Federally and State-listed). The design of all survey methodologies should be coordinated with the FWC.

- Provide a map of delineated habitat types (including mangroves and submerged habitats such as seagrasses and hardbottoms) with an overlay of the project component footprints.
- The site has nesting habitat for the least tern. Least terns are listed as threatened by the FWC and may potentially be nesting on the cleared gravel upland portions of the site. Please provide least tern nesting surveys and address the loss of potential nesting habitat.
- For the 60-foot x 100-foot x 9-foot deep barge unloading area expansion, please provide fish and wildlife resource surveys and sea grass surveys. With regard to the potential for manatees to occur in the barge unloading expansion area during construction, the applicant should provide information detailing how observers will be selected, whether they have any previous experience observing for manatees, how many observers will be assigned to the construction areas, and how many hours per day each observer will be assigned to work.

Uniform Mitigation Assessment Method (UMAM) scores: Upon receiving adequate information to assess the functional value of the habitats (seagrasses, mangroves, hardbottoms, etc.) in the project area, we will reassess the UMAM scores provided and reevaluate the potential for effects on fish and wildlife resources in the area.

Radial Collector Wells: The application does not provide enough information on this technology and the current conditions at the locations of the radial collector wells for us to assess whether their construction or operation would have an impact on fish and wildlife resources. We wish to point out the highest priority for recovering the ecosystem health of Biscayne Bay is on addressing the negative impacts that water resource development and water management have had on the salinity regime of the Bay and its associated coastal wetlands, which provide important habitat for fish and wildlife resources. If radial collector wells, which are vertical wells that then discharge laterally via a series of pipes underground, would disrupt the groundwater system, which is closely tied to surface water (which in turn supports fish and wildlife resources) in this extremely porous karst area, this proposal would seem to be contrary to commitments made by the Governor's Office and U.S. Congress, which signed into law authorizations to restore Biscayne Bay (Water Resources Development Act of 2000 – see http://www.fws.gov/habitatconservation/omnibus/wrda2000.pdf).

The FWC recognizes that it may be difficult for FPL to assess or predict, with any accuracy, the potential for this technology to impact on ecological processes without a pilot project having been built and operated previous to this proposal. At this point it is unclear whether or not such a pilot project will be taking place; hence, we have quite a few questions the answers to which would help us to make that determination. In order to more completely anticipate the potential for impacts of the proposed project on fish and wildlife resources at the project area and within the surrounding Biscayne Bay, Biscayne National Park and Biscayne Bay Aquatic Preserve, we suggest that the applicant respond to the following information needs:

- Will there be a radial collector well pilot test? If so, we recommend that FPL give itself enough time to collaborate with experts at South Florida Water Management District to better assess the potential positive/negative outcomes of moving ahead with this technology.
- How will fish and wildlife resources over the lateral arms of the radial collector wells be affected by the construction of the wells? How will the lateral arms be "advanced from the caissons"?
- We would like to see a survey and monitoring program that specifically enables FPL to determine the contribution of this part of the proposal to any impacts on the surrounding ecosystem, localized habitats and the fish and wildlife that depend on them.
- What contingency plans are considered for alternative water sources if fish and wildlife resources demonstrate negative responses to this technology? We would expect FPL to provide for a contingency plan in their Conditions-of-Certification, should monitoring indicate that this technology is counter-productive to the recovery of Biscayne Bay.
- We would like to see a baseline survey and monitoring information for the radial collector wells, caissons, and lateral arms, with preferably a minimum of two years of data. This data should include sampling prior to, during, and at least one month after all radial collector well events. Identify and commit to modeling environmental responses such as water quality and fish and wildlife species that depend on seagrass and hard-bottom habitats. FWC staff can work with the applicant to identify species of interest.
- How will noise from well/pump operation affect fish and wildlife resources (particularly listed species) in the area of the lateral arms and the well caissons?
- Our staff is concerned that there might be a delayed impact on fish and wildlife resources if phenomena such as "frac-out" or subsidence of the bay bottom should impact on the radial collector wells and their associated lateral arms. Is this a possibility? If so, how will this possibility be avoided, and what contingencies will be in place if "frac-out" or subsidence does occur? Also, since radial collector wells have not yet been used in a saltwater environment, we suggest that FPL anticipate the potential for indirect impacts on fish and wildlife resource needs in the case where there might be a potential failure of the wells due to corrosion.
- Will this project potentially interfere with the goals of the Biscayne Bay Coastal Wetlands Project (BBCW)? Please indicate how the applicant is coordinating with the BBCW team to ensure that the use of the radial collector wells will not hinder the success of the BBCW project.
- What are the cumulative effects of radial collector wells on water conditions in Biscayne Bay, including salinity, flushing, clarity, water quality, localized temperatures, etc.? Further, what are the anticipated effects at increments of 25%, 50% and 100% of full implementation of this proposal?
- Under what circumstances would the radial collector wells be required to be used and at what capacities? Under what specific anticipated circumstance would radial collector wells constitute 100% of water source composition?
- What alternatives are being investigated to avoid use of radial collector wells, even as a backup system? In particular, we recommend that the applicant address the ability of the project to use reclaimed water technology either in part or in full.

- Please provide a schedule of radial collector well operation including initial operation and all planned subsequent events, as well as monitoring protocol for the above-mentioned resources.

Cooling Towers: What impact will salt deposition from the cooling towers have on freshwater wetlands in the area? What are the cumulative impacts of salt deposition from Units 3 and 4 in addition to those from the proposed Units 6 and 7?

In summary, we find the application to be incomplete at this time, as it relates to the potential for impacts on fish and wildlife resources and we look forward to receiving additional information from the applicant. If your staff has any specific questions regarding our comments, I encourage them to contact Joe Walsh (772) 778-6354 or by email at joe.walsh@myfwc.com.

Sincerely,

Mary Ann Poole

Mary Ann Poole
Commenting Program Administrator

map/jg
ENV 2-11-2/3
FPL Turkey Point Nuclear Units 6 and 7_2268_080409

cc: Cindy Mulkey, DEP, Tallahassee
Matthew Raffenberg, FPL, Juno Beach
James Lindsay, FPL, Juno Beach
Chuck Collins, FWC, West Palm Beach
Lisa Gregg, FWC, Tallahassee
Erin McDevitt, FWC, West Palm Beach