

TurkeyPointCEm Resource

From: Jonathan Ullman [jonathan.ullman@sierraclub.org]
Sent: Tuesday, June 23, 2015 7:31 AM
To: TurkeyPoint@usace.army.mil; TurkeyPointCOLEIS Resource
Subject: [External_Sender] Sierra Club comments on Turkey Point Expansion NRC-2009-0337
Attachments: SC turkey point comments NSC final.pdf

Please accept the following comments from Sierra Club on Turkey Point Units 6 and 7 in the PDF attached.

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Cindy Bladey
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Megan Clouser
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Miami Permits Section
9900 SW 107th Ave., Ste. 203
Miami, FL 33176

Re: Comments on Turkey Point Expansion, NRC-2009-0337, 2009-02417 (SP-MLC)

Dear Ms. Bladey and Ms. Clouser:

The Sierra Club appreciates this opportunity to submit comments on the Draft Environmental Impact Statement (DEIS) for Combined Licenses (COLs) for Turkey Point Units 6 & 7. Our members are FPL rate payers, recreational users of nearby surface waters and lands, users of drinking water from subsurface aquifers serving Miami-Dade and Monroe Counties. Our members live within the evacuation area of Turkey Point, throughout the state of Florida and the United States.

The undersigned urge you to reject the application and choose the **No Action alternative**.

The controversial nuclear era began on the shores of Biscayne Bay in 1967 when the first of two reactors were constructed by Florida Power and Light. Even before the construction of Units 3 and 4, major problems surfaced. FPL originally planned to send its hot waste water from the reactors directly into the Bay, which was already showing harmful effects from FPL's oil-fired generator on sea grass habitat and marine life in the U.S.'s first continental underwater national park, Biscayne National Park. After fierce objections and legal action, FPL built in 1974 a system of "cooling canals" so massive it could be seen from space. The canals were cut through the sensitive coastal wetlands inhibiting fresh water flow the Bay and destroying important coastal wetland.

Environmental and technical problems have taken its toll on the machines built more than 40 years ago. The most recent problems threaten the continued viability of the reactors as well as the prospects for more. Rising temperatures and a boost of power have caused algae to fill the canals, and threaten to clog the system unless even more water can be brought in from the Everglades. In 2014, summer temperatures routinely climbed above 100 degrees Fahrenheit. Now a giant saline plume containing radioactive elements has formed underneath the plant and is drifting west, threatening the water supply for the Florida Keys.

Florida and Power Light seeks to add two additional reactors to this location. The new reactors would not be immune from the underlying environmental and logistical problems affecting the existing reactors, in fact, they would exacerbate them. While there is a litany of concerns about the four

reactors, an overwhelming factor against their future viability is climate change. According to government agencies, sea level rise will inundate the Turkey Point site within the lifetime of the proposed reactors. There can be no fair analysis that does not take into effect climate change on the entire Turkey Point site: hotter water temperatures, significant sea level rise, increase storm surge and more severe hurricanes.

The clustering effect of four reactors in one coastal at-risk location, similar to the clustering of reactors at Fukushima is very worrisome. Should a disaster strike, there is a possibility multiple reactors will be impacted at once, considerably reducing FPL's ability to isolate and contain the damage.

The new reactors are planned to be built on nearby mined limestone further destroying the critical wetlands surrounding them, not only important for the health of Biscayne National Park, but crucial to the community's first line of defense against hurricane impacts. Mined pits also increase the likelihood of contamination of the Biscayne aquifer.

We are also concerned about the new radial wells and their impact on groundwater supplies and salinity levels.

Even if FPL were to elevate the new reactors with limestone rock fill, they still cannot escape the impacts of sea level rise, storm surge, increased salinization, higher water tables, and increased severity of storms. These impacts will negatively affect plant access, operation, transmission and safe storage of nuclear waste.

Because of time and stark changes to the climate, the nuclear era on Biscayne Bay and in Florida is nearing its end. Solar, which accounts for one tenth of a percent of Florida's power, is ripe for massive expansion. FPL has indicated its intent to increase its solar generation and can easily produce enough power through this lower cost, safe and renewable technology to meet the needs of residents and businesses.

Turkey Point is located within six miles of two biologically rich natural parks, a state aquatic preserve, a national wildlife refuge, and a wetland habitat preserve. Everglades National Park is recognized as an endangered UNESCO World Heritage Site, an International Biosphere Reserve and supports a unique array of ecosystems and wildlife. Biscayne National Park, located directly adjacent to Turkey Point, is one of our largest marine national parks, and home to incredible biodiversity and important marine and wetland habitat that has now enacted no-take zones to save its dwindling fish stocks. Expansion of these reactors will adversely impact these national treasures and severely curtail the public's use and enjoyment of them.

South Florida's water supply is a finite, dwindling resource that needs to be conserved in order to support the population. According to the Union of Concerned Scientists, nuclear fission is the most water intensive method of the principal thermoelectric generation options in terms of the amount of water withdrawn from sources.

The \$20 billion or more investment in two new reactors would be better spent developing lower cost solar energy. Compared to other forms of power generation, solar photovoltaic (PV) power is leading the cost decline, with solar PV module costs falling 75% since the end of 2009 and the

cost of electricity from utility-scale solar PV falling 50% since 2010. (Source: International Renewable Energy Agency, http://www.irena.org/DocumentDownloads/Publications/IRENA_RE_Power_Costs_2014_report.pdf)

Additionally, President Obama issued an Executive Order 13653 on November 1, 2013 that directs all agencies - federal, state and local - to incorporate sea level rise projections into planning and construction along US coasts (reference: <https://www.whitehouse.gov/the-press-office/2013/11/01/executive-order-preparing-united-states-impacts-climate-change>). Had that order been followed, the NRC would have automatically concluded that construction and operation of two additional reactors at Turkey Point, in an area that will be submerged due to sea level rise and to increased storm surges from stronger storms, is untenable and poses an unacceptable risk to a region that is ground zero for sea level rise. It poses an unacceptable risk for the South Florida, the state and the nation.

We are opposed to all nuclear power expansion in Florida, as it is unsafe and non-renewable, taxes limited water supplies. It is unworkable, especially in the age of climate change. Instead of wasting tens of billions of dollars on an unviable Turkey Point project, it's time for FPL to focus on a far more viable, economical technology in the Sunshine State: solar.

We, therefore, kindly ask that you choose the No Action Alternative.

Sincerely,

Debbie Matthews
Chair
Sierra Club Florida

Jim Teas
Chair
Sierra Club Miami Group

Stephen Mahoney
Conservation Chair
Sierra Club Miami Group

Noel Cleland
Executive Committee Member
Sierra Club Miami Group

John Scott
Chair
Sierra Club Calusa Group

Rhonda Roff
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Frank Jackalone
Florida Staff Director
National Sierra Club

Jonathan Ullman
South Florida/Everglades Senior Organizing Representative
National Sierra Club

Sierra Club subscribes to the detailed comments reprinted herein by other concerned organizations and includes them within our comments as well.

Center for Biological Diversity • Miami Waterkeeper • National Parks Conservation Association • South Florida Wildlands Association • Tropical Audubon Society

May 22, 2015

Cindy Bladey
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Megan Clouser
Project Manager
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Miami Permits Section
9900 SW 107th Ave., Ste. 203
Miami, FL 33176

Re: Comments on Turkey Point Expansion, NRC-2009-0337, 2009-02417 (SP-MLC)

Dear Ms. Bladey and Ms. Clouser,

On behalf of the National Parks Conservation Association, Center for Biological Diversity, Miami Waterkeeper, South Florida Wildlands Association, and Tropical Audubon Society, we thank you for the opportunity to comment on the Draft Environmental Impact Statement (DEIS) for Combined Licenses (COLs) for Turkey Point Units 6 & 7, released by the Nuclear Regulatory Commission (NRC) under Docket ID NRC-2009-0337 and as publicly noticed by the U.S. Army Corps of Engineers (Corps), 2009-02417 (SP-MLC). We are deeply concerned about the potential wide-ranging environmental impacts to regional water resources, national parks, wildlife, and sensitive wetlands resulting from the construction and operation of Units 6 & 7 and ancillary facilities. According to the requirements of the National Environmental Policy Act (NEPA) and NRC regulations, the DEIS must present an analysis that examines and considers the environmental impacts, including direct, indirect, and cumulative impacts, of the proposed action; the environmental effects of alternatives to the proposed action; and mitigation alternatives that would reduce or avoid adverse environmental impacts. ¹ The DEIS fails to adequately discuss and analyze potential adverse environmental impacts and provides insufficient proposals for mitigation. Due to the deficiencies of the DEIS, as outlined in this letter, it would be premature and inappropriate to issue COLs for Turkey Point Units 6 & 7.

We present to you the following specific concerns:

- I. The proposed action threatens nearby Biscayne and Everglades National Parks and the goals and activities of the Comprehensive Everglades Restoration Plan (CERP).
- II. The DEIS fails to include an adequate analysis of the direct, indirect, and cumulative impacts of proposed radial collector well system, including cumulative impacts associated with the cooling canal system (CCS) industrial wastewater facility (IWF) and CERP.

III. The analysis of the impacts of the use and disposal of reclaimed wastewater is inadequate, particularly in terms of the characterization of constituents, the impacts of the construction of pipelines, and the impacts of wastewater reuse on CERP activities and goals.

IV. The DEIS fails to provide an adequate analysis of the direct, indirect, and cumulative impacts of the construction and operation of transmission lines and access roads on sensitive wetlands, wildlife, and CERP activities.

V. The DEIS does not adequately address the cumulative impacts of constructing and operating Units 6 & 7 on salinity levels in groundwater, surface water, the Biscayne Aquifer, and Biscayne Bay.

VI. The direct, indirect, and cumulative impacts of sea level rise on the construction and operation of Units 6 & 7 and ancillary facilities are not adequately analyzed.

VII. Potential mitigation measures are speculative, inadequate, and based on incomplete information.

I. The Proposed Action Threatens National Parks and Everglades Restoration Efforts

Located directly adjacent to Turkey Point, Biscayne National Park is a national treasure and protects a large portion of the third largest barrier reef ecosystem in the world. It contains part of the only living coral reef in the continental United States and is home to vast biodiversity and unique habitats. The park was established to “to preserve and protect for the education, inspiration, recreation, and enjoyment of present and future generations a rare combination of terrestrial, marine, and amphibious life in a tropical setting of great natural beauty.”² Biscayne National Park covers over 172,000 acres, 95% of which is water and is an Outstanding Florida Water (OFW) as part of Biscayne Bay. The park supports over 600 species of fish, 200 bird species and 21 federally listed threatened or endangered species and protects the longest stretch of mangrove shoreline along the eastern seaboard of the United States. Highly valued recreational activities within Biscayne National Park include snorkeling, paddling, wildlife viewing, fishing, camping, hiking, and scuba diving.

Everglades National Park, located west of Turkey Point, was established in 1934 as a “public park for the benefit of the people. It is set aside as a permanent wilderness, preserving essential primitive conditions including the natural abundance, diversity, behavior, and ecological integrity of the unique flora and fauna.”³ Renowned worldwide for its rich array of unique ecosystems and wildlife, Everglades covers around 1.5 million acres of land and water, protecting 34 native species that are either federally listed or candidates for threatened or endangered status. Recognized by the United Nations Educational, Scientific, and Cultural Organization (UNESCO) as a World Heritage Site and International Biosphere Reserve, Everglades National Park is home to the largest mangrove ecosystem in the Western Hemisphere and the most significant wading bird breeding ground in North America.⁴ Combined, over 1.5 million visitors to Biscayne and Everglades National Parks spent more than \$136 million in 4

2014, sustaining over 2,000 jobs in the local area.⁵ Park visitation had a cumulative benefit of around \$200 million to the local economy.⁶

Due to the impacts of the hydrological reengineering of the Everglades that took place in the 20th century to pave the way for development, the greater Everglades ecosystem, including Biscayne National Park and Biscayne Bay, has been in decline for decades. In 2000, Congress authorized the Comprehensive Everglades Restoration Plan (CERP) through the Water Resources Development Act, which put forth an overarching plan to achieve restoration of the quantity, quality, distribution, and timing of water flows throughout the system. The Biscayne Bay Coastal Wetlands (BBCW)

project is a component of CERP that aims to restore the coastal wetlands of Biscayne Bay and reduce damaging point-source discharges to the system.

As detailed throughout our comments, the proposed project could have numerous adverse environmental impacts to our national parks and the treasured natural resources they were designated to protect. Specifically, threatened wildlife and wetland habitat in Everglades National Park could be harmed by the construction and operation of transmission line corridors in and adjacent to the park. The expansion also threatens the goals of CERP through potential negative impacts to the benefits of BBCW. One of the primary objectives of BBCW is to rehydrate coastal wetlands located adjacent to Turkey Point and to restore overland and subsurface water flows. Plans to withdraw water from Biscayne Bay using radial collector wells as a backup cooling water supply for Units 6 & 7 will likely draw freshwater away from what is needed for restoration, as discussed in greater detail in Section II, and operations could detract from benefits realized as a result of restoration efforts. The proposed expansion of Turkey Point could also have significant impacts on the diverse ecosystems and valuable recreational experiences protected by our national parks. Biscayne National Park is particularly vulnerable to the impacts of the proposed project due to its location directly adjacent to Turkey Point. The park visitor center and entrance are located only two miles north of the site proposed for Units 6 & 7 and water areas of the park are just 2000 feet east of the proposed new units. Viewsheds from the waters of Biscayne will be significantly impacted above current levels due to the construction and presence of the new units and ancillary facilities, impacting visitor use and experience. Furthermore, changes to the salinity, quality and temperature of water in Biscayne may result in impacts to the seasonal behaviors of threatened and endangered species, such as the West Indian manatee and American crocodile.⁷

According to the standards of the Nuclear Regulatory Commission (NRC), “sites adjacent to lands devoted to public use may be considered unsuitable,” and unacceptable impacts are “most apt to arise in areas adjacent to natural-resource-oriented areas.”⁸ In following the NRC’s own standards, we advise against moving forward with the project as proposed due to the potential for unacceptable impacts on the ecological integrity and economic viability of the surrounding national parks.

II. The Analysis of Direct, Indirect, and Cumulative Impacts of Proposed Radial Collector Wells is Inadequate

Some of our principal concerns regarding the potential adverse environmental impacts of this project are centered on the operation of the radial collector wells and their impacts on surrounding ecological areas. In order to dissipate waste heat generated by Units 6 & 7, two sources of water are identified for use in the DEIS. Up to 90 million gallons of water per day (MGD) of reclaimed wastewater from Miami Dade County will be used as the primary source of cooling water. However, when this water source is unavailable or insufficient in supply, radial collector wells will draw water from under Biscayne Bay as a backup water supply. The DEIS proposes the construction of four radial collector wells, which according to FPL, will withdraw saltwater from the Biscayne Aquifer. Radial wells would extend 900 feet horizontally beneath Biscayne Bay and would be installed approximately 25 to 40 feet below sediment surface.⁹ Operation of the radial collector wells is to be limited to 60 days per year, with a maximum of volume of 7.5 billion gallons of water that may be pumped during that period.¹⁰ It is important to note that radial collector well structures would be located under navigable Waters of the United States, as regulated under the Clean Water Act.¹¹

Radial collector wells such as those described in the DEIS have never before been constructed in an estuarine environment anywhere else in the world.¹² A huge degree of uncertainty comes into play

when predicting the impacts of the construction and operations of these wells on the surrounding environment, including the resources of Biscayne National Park, which are within the cone of influence of the radial collector wells. Despite the fact that radial wells will be located in the underlying aquifer, the primary source of intake water will be water from Biscayne Bay. According to the DEIS, “if the radial collector wells are used, the water would be pumped directly from the Biscayne aquifer beneath the bay and most of this water would be drawn downward from Biscayne Bay in an area adjacent to Biscayne National Park.”¹³ The DEIS fails to include an adequate analysis of these potential adverse impacts that could be caused by the installation and operation of radial collector wells.

The DEIS does not adequately analyze the potential for radial collector wells to impact salinity levels in Biscayne Bay and associated potential impacts on benthic flora and fauna. The DEIS acknowledges that 98% of water draw via the radial collector wells would come from Biscayne Bay, noting the hydrological connections between the aquifer and the bay.¹⁴ However, it is possible that, due to these connections, pumping operations will draw down the freshwater lens found in the bay, impacting the flora, fauna and salinity of Biscayne Bay. According to the Florida Department of Environmental Protection (FDEP), radial wells located at a depth of 40 feet may ultimately withdraw freshwater from the aquifer, resulting in potential impacts to the seabed and salinity within the Bay.¹⁵ Neither Biscayne Bay nor Biscayne Aquifer is characterized by a constant salinity. Rather, both the bay and the aquifer are subject to spatial and temporal variations in salinity.¹⁶ The salinity model upon which the impacts analysis is based is inadequate and was not developed for the true scale at which the wells will operate. The DEIS admits that models used to predict the underground flow of water into the radial collector wells are insufficient to identify how water of different density (caused by differences in salinity) will move through the ground.¹⁷

As fresh water is withdrawn from either the aquifer and/or the bay, there may be less freshwater to replenish the system, affecting salinity levels within Biscayne Bay. The withdrawal of freshwater from either of these sources has the potential to permanently disrupt the system’s saltwater regime and could have substantial impacts to local ecosystems, which are extremely sensitive to changes in salinity. Disruption in nearshore habitats and overall ecological stability may occur as a result of hydrologic impacts that change water quality and volume with the bay. Furthermore, as noted in the DEIS, removing large volumes of water from the aquifer could impact water-supply levels and ultimately increase saltwater intrusion into the Biscayne Aquifer.¹⁸ South Florida’s water supply is already extremely vulnerable to the impacts of salt water intrusion and an acceleration of the degradation of our water supply as a result of this project is unacceptable. Such potential impacts must be fully analyzed in the DEIS to comply with NRC regulations that require a complete discussion of the potential negative impacts of a project.¹⁹

The DEIS also fails to provide sufficient information about current species diversity, abundance, and habitat utilization in the vicinity of proposed radial collector wells and therefore fails to complete a full and adequate analysis of the impacts of the wells to the Biscayne Bay ecosystem. This data is necessary to determine the ways in which disruptions to the salinity regime caused by the radial collector wells will impact Biscayne National Park, wildlife species, and their habitats. The DEIS does not contain comprehensive biological studies on wildlife utilization, plant cover, and species in the area adjacent to the radial collector wells. Furthermore, a baseline survey of benthic fauna and seagrass cover has not been conducted near the location of the radial collector wells. Seagrasses can be particularly sensitive to changes in salinity and water quality and benthic habitat could be impacted by the radial collector wells.²⁰ The DEIS cannot fully consider the potential impacts of the wells on wildlife resulting from the disruption of salinity regimes without providing comprehensive

surveys and studies of the flora and fauna within the bay, particularly in areas near the radial collector wells. Without providing this data, the DEIS fails to establish an environmental baseline by which to evaluate impacts and alternatives.

The impacts analysis included in the DEIS regarding the impacts of the radial collector wells, already inadequate, is premised on the assumption that sufficient water supply will be available from reclaimed wastewater throughout the lifespan of this project. The determination that the operations of the radial collector wells would have minor impacts on groundwater is dependent on the reliability of reclaimed water.²¹ Due to inherent uncertainties and risk regarding the continued future availability and supply of treated wastewater as cooling water, the impacts from the potential increased usage of radial collector wells beyond the 60 days identified in the DEIS must be analyzed. Such discussion should include possible adverse impacts to Biscayne National Park, benthic habitats and organisms, saltwater intrusion, migration of the hypersaline plume, and water levels at freshwater supply wells.

Cumulative Impacts of Cooling Canal System

According to NRC and NEPA requirements, the DEIS must discuss and analyze the environmental impacts of the proposed Turkey Point expansion, including the direct, indirect and cumulative impacts. Current operations of Turkey Point already pose risks to the ecological integrity of surrounding environments, particularly to Biscayne Bay and Biscayne National Park. Specifically, water from the cooling canal system (CCS), a designated industrial wastewater facility (IWF) used to cool waters from the operation of Units 3 & 4, is seeping into groundwater, creating a hypersaline plume emanating out in all directions.²² Despite being described as a “closed system” by FPL, the CCS is an unlined system with direct connections to groundwater.

The DEIS does not adequately discuss potential cumulative impacts caused by the existing underground hypersaline plume produced by the current operations of the CCS. The findings of the uprate monitoring program for Units 3 & 4 identified the presence of CCS water in shallow groundwater (approximately 25’ to 30’) in wetlands adjacent to Biscayne Bay.²³ Radial wells will be constructed at approximately the same depth. According to FPL’s groundwater modeling, the RCWs would draw approximately 2% of its water from the Industrial Wastewater Facility (IWF) cooling canal system.²⁴ The DEIS acknowledges that the operations of the radial collector wells could impact the movements of the hypersaline plume, likely increasing the flow velocity of hypersaline water eastward under Biscayne and changing the area impacted by the plume.²⁵ The DEIS states that “intermittent operation [of the radial collector wells] could result in an increase of hypersaline flow into the aquifer beneath the bay that could migrate into the bay when the RCW is not operating.”²⁶ Despite admitting the potential for interactions, the DEIS fails to adequately analyze the adverse environmental impacts that could result if CCS water were to appear in the bay due to the operations of the radial collector wells.

The potential for interactions between the operations of the radial collector wells and the hypersaline plume leads to inherent risks and potential environmental impacts that are not adequately addressed in the DEIS. The construction and operation of Units 6 & 7 will likely increase the input of materials into the CCS, altering the concentrations of dissolved contaminants. Interactions between radial collector wells and CCS waters could result in the transport of contaminants and nutrients into underground waters that are connected with the waters of Biscayne Bay, potentially causing algal blooms and indirect threats to its ecological health and sustainability.²⁷ The DEIS must analyze and review monitoring information regarding contaminants of environmental concern, such as salinity, nutrients, metals, and sulfate.

In discussing such interactions, the DEIS admits that, “the steady-state nature of the FPL model and the assumption of constant density fluids make the model inadequate for modeling this potential scenario,”²⁸ in effect admitting uncertainty as to the interactions between the radial collector wells and hypersaline water from the plume. Despite the fact that the proposed system of radial collector wells would be located within or adjacent to the plume and will impact the movement and location of the plume, the DEIS fails to provide an adequate discussion of the ways in which the movement and composition of the plume may be affected by radial collector well withdrawals. There is an insufficient analysis of how the wells may capture or affect water from the plume and inadequate information regarding the possible impacts associated with causing plume water to flow towards the radial wells.

Cumulative Impacts of CERP

The DEIS fails to analyze the potential for the operations of radial collector wells to negatively impact the implementation of CERP, specifically the Biscayne Bay Coastal Wetlands (BBCW) project. BBCW is intended to restore freshwater flow to Biscayne Bay and Biscayne National Park, recharging sources of fresh groundwater and addressing high salinity in nearshore environments. Using radial wells to collect cooling water for Units 6 & 7 could negatively impact CERP goals of restoring freshwater flow to Biscayne Bay. Radial wells located at a depth of 40 feet may withdraw freshwater from the aquifer, potentially offsetting attempts to deliver more freshwater to Biscayne Bay’s littoral zone.²⁹

III. The Analysis of the Impacts of the Use and Disposal of Reclaimed Wastewater is Inadequate

The primary source of cooling water for the operations of Unit 6 & 7 would be reclaimed water from the Miami-Dade Water and Sewer Department (MDWSD). This water would be discharged into the Boulder Zone of the Lower Floridan Aquifer using twelve underground injection wells. The DEIS does not include an adequate analysis of the impacts that may arise from the disposal of this, wastewater -which contains ethylbenzene, heptachlor, tetrachloroethylene, and toluene- into the Boulder Zone using these wells. Moreover, the impacts of these contaminants migrating upward and into the Upper Floridan Aquifer are not adequately addressed.

The DEIS also does not include an adequate discussion and evaluation of the impacts associated with the construction of pipelines needed to convey reclaimed wastewater to the plant’s wastewater treatment facility. Pipelines to transport reclaimed wastewater from the South Dade Water Treatment Plant to Turkey Point will be constructed in an area currently home to expansive wetlands using a corridor approximately nine miles long.³⁰ The DEIS must discuss how the construction and operation of these pipelines will impact wetlands, how FPL will properly avoid or mitigate impacts to wetlands, and whether reasonable alternatives exist to constructing pipelines in sensitive wetland areas.

Finally, the South Florida Water Management District plans to construct culverts on the east side of the L-31 E right-of-way for the BBCW project. FPL is also considering using the same right-of-way to accommodate the reclaimed water pipeline. The DEIS does not adequately discuss this potential conflict and how plans for reclaimed wastewater pipelines may negatively impact plans to proceed with Everglades restoration.³¹ Considering the extensive loss of ecologically valuable wetlands in and around Turkey Point and Biscayne Bay that has already occurred and the commitment of the federal government and the state of Florida to restore and replenish wetland resources in these areas, the

DEIS must include an adequate discussion of how the construction and operation of around nine miles of pipeline will further impact wetland resources and if reasonable alternatives exist. The potential adverse impacts from use and reservation of reclaimed wastewater from the South District Water Treatment Plant to CERP and specifically, to BBCW, are not adequately discussed in the DEIS. BBCW, intended to restore freshwater flows in and around Biscayne Bay's littoral zone, is premised on the conveyance of freshwater that may include treated wastewater from Miami Dade County. The DEIS does not discuss the potential negative impacts to Everglades restoration efforts that may arise from the use of up to 90 MGD of reclaimed water to cool Units 6 & 7, water that may otherwise be used to supply freshwater to the BBCW project.

IV. The DEIS Fails to Adequately Analyze the Impacts of the Construction and Operation of Transmission Lines and Access Roads on Wetlands, Wildlife, and CERP Activities

Transmission Lines

In order to connect Units 6 & 7 to the power grid, FPL seeks to construct two new transmission line corridors. The proposed transmission line sites for the Western corridor are of primary concern due to their potential impacts on areas in and around Everglades National Park. The DEIS fails to adequately analyze the direct, indirect, and cumulative impacts of the construction and operation of transmission lines on wetlands, wildlife, and CERP. In its discussion of potential Western transmission line corridors, the DEIS limits its discussion to West Preferred and West Consensus corridors. The construction and operation of transmission lines and access roads in either of these corridors could cause an array of adverse environmental impacts, including impacts to wildlife, habitat, and wetland resources, such as freshwater marshes, wetland hardwoods, and wet prairies; the disruption of hydrologic flows; air and water pollution; viewshed impacts; and impacts to national park visitor experiences.³² The project could harm water-dependent birds, such as migratory birds and federally listed wood storks and snail kites. Wood storks are listed as a federally threatened species due to habitat loss, fragmentation, and degradation. Wading birds such as the wood stork are at risk of collision with powerlines because of their large size and inability to navigate obstacles while flying. In a scientific evaluation of wood stork mortality, collisions with powerlines were listed as the most significant cause of death.³³ It is reasonable to anticipate that, given the high collision risk of wood storks and wading birds, the construction of powerlines in critical wood stork habitat will lead to a sustained level of mortality for these threatened species throughout the life of the project. The construction and operation of transmission lines could also lead to the degradation and fragmentation of critical wetland areas, disturbing birds during the construction process and creating a permanent risk of bird collisions and injuries from transmission lines and associated structures.

Access Roads

Impacts associated with the construction and operation of access roads associated with Units 6 & 7 on wetlands and wildlife are not adequately discussed and analyzed within the DEIS. Access roads will be constructed in and adjacent to wetlands and conservation lands, including on lands that are part of the Miami-Dade County Environmentally Endangered Lands Program.³⁴ The construction and operation of such roads could have a number of negative impacts, such as the disruption of ecological corridors and sheet flow and the degradation of conservation lands.³⁵ The DEIS lacks sufficient information regarding the possible overlap of access roads and wildlife corridors. The discussion of such impacts is cursory and as such fails to comply with the requirements of section 102(2) of NEPA.³⁶

V. Failure to Adequately Address the Cumulative Impacts of Constructing and Operating Units 6 & 7 on Salinity Levels in Groundwater, Surface Water, the Biscayne Aquifer, and Biscayne Bay

The DEIS fails to adequately address the cumulative impacts of constructing and operating Units 6 & 7 on salinity levels in groundwater, surface water, the Biscayne Aquifer, and Biscayne Bay. One of the most significant environmental impacts of the proposed action is the potential for greatly increased salinity levels in an ecosystem that is already stressed by high salinity. The construction and operation of Units 6 & 7 could lead to the expansion and continued migration of the underground hypersaline plume that is currently threatening groundwater supplies. Construction activities would likely add an increased amount of nutrients and dissolved organic materials into the CCS. Adverse environmental impacts could occur if these contaminants reach the waters of Biscayne Bay. Increased salinities in the project area could result as cumulative impacts when combined with the use of radial wells that withdraw freshwater from Biscayne Bay and the Biscayne Aquifer (increasing salinity levels in the Bay); the reservation of municipal wastewater that might otherwise be used to provide freshwater to Biscayne Bay's littoral zone through BBCW; the failure of FPL to elevate the entire project area and its facilities to protect against saltwater intrusion from sea level rise and storm surge; and the use of injection wells that could increase salinities in the Floridan Aquifer.

According to NEPA, cumulative impacts are those that occur from the "incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions."³⁷ Every year, the SFWMD conducts fall agricultural draw downs in Miami-Dade County in order to manipulate groundwater storage to support agricultural interests at the end of the wet season. The result of these actions include the rapid release of water at the end of the wet season and an artificially early start to the dry season.³⁸ The dry season is therefore unnaturally dry, causing habitat loss, salinity issues and other negative ecological consequences.³⁹ The DEIS fails to include a discussion of how these annual draw downs, when coupled with the existing hypersaline plume and proposed operations of Units 6 & 7, will cumulatively impact salinity levels within Biscayne Bay and the Biscayne Aquifer.

VI. Failure to Adequately Analyze the Direct, Indirect, and Cumulative Impacts of Sea Level Rise on the Construction and Operation of Units 6 & 7 and Ancillary Facilities

Preparing for the impacts of impending sea level rise and ensuring that development, both existing and planned, takes into account these potential impacts is one of the most critical challenges facing South Florida. In considering such impacts, the DEIS fails to adequately address the direct, indirect, and cumulative impacts of sea level rise on the construction and operation of Units 6 & 7 and ancillary facilities. Turkey Point is located close to sea level, with an elevation of -2.4 feet to 0.8 feet. Over the last 100 years, sea level in the area of Turkey Point has risen approximately 9-12 inches.⁴⁰ According to the Miami-Dade Climate Change Task Force, by 2050, sea level rise could be between 1.5 and 5 feet.⁴¹ With FPL seeking a COL valid for 40 years, Units 6 & 7 could still be operating when these predictions come to fruition. However, the DEIS fails to adequately analyze the potential impacts associated with this level of sea level rise.

The DEIS acknowledges that global sea level is projected to rise by 1 to 4 feet by 2100 and that the vulnerability of Turkey Point to sea level rise is "high" to "very high."⁴² According to the U.S. Global Change Research Program, as cited in the DEIS, there is "an imminent threat of increased inland flooding during heavy rain events in low-lying coastal areas such as southeastern Florida" and sea level rise will "accelerate saltwater intrusion into freshwater supplies."⁴³ Predictions for sea level

rise globally and in specific regions can vary widely and the DEIS accounts for a very conservative estimate of sea level rise in its analysis. NOAA discourages decision makers from using only the most likely sea level rise scenarios when considering future impacts of sea level rise on development. Rather, in terms of the construction of power plants, NOAA recommends that a projection of over six feet of sea level rise by 2100 be used for planning purposes.⁴⁴ Under such recommendations, three feet of sea level rise by 2060 should be accounted for, which is within the lifetime of Units 6 & 7. Despite the fact that new units would be constructed on elevated pads, transmission line facilities, reclaimed water pipelines, industrial wastewater facilities, access roads, and other facilities would be located at the current elevation of the plant. The DEIS omits an adequate discussion on how sea level rise could potentially impact these facilities and the operations of Units 6 & 7. Sea level rise could cut off road access to the Southern Waste Water Treatment Facility, impacting the plant's operations. Moreover, considering the porosity of the Biscayne Aquifer, increasing sea level rise could also increase groundwater levels in the region.⁴⁵ Impacts of sea level rise could affect the operations of the radial collector wells, particularly in regards to the percentage of water drawn from Biscayne Bay versus freshwater from the Biscayne Aquifer. The NRC should also look at the impacts of sea level rise beyond the 40 year lifetime of the plant, especially as nuclear waste will be stored onsite. In addition, the DEIS does not adequately discuss the increased vulnerability of Units 6 & 7 to storm surge as a result of sea level rise. While sea level rise occurs slowly, impacts from storm surge can be sudden and immediate. Turkey Point is located between Biscayne Bay to the east and low-lying wetlands to the west. As sea level rises, Florida Bay could also border the Turkey Point site. Therefore, when anticipating future scenarios, storm surge could potentially come at the plant from three directions. Elliott Key, which currently acts as a barrier to the impacts of storms, may be underwater, leaving the facility more vulnerable to storm surge, high tides, winds, and ocean swell. Given projections, it is extremely likely that water from Biscayne Bay will rise to or above levels of water within the cooling canal system at some point in the project's lifetime. During storm events, it is possible that water levels may breach the height of the berms surrounding the CCS, causing Bay water to mix with CCS water before the water returns to Biscayne Bay.⁴⁶ The end result would be the increased presence of cooling canal system water in the bay, which could lead to nutrient loading and potentially devastating algal blooms within the bay.⁴⁷ The DEIS must account for such future scenarios and direct, indirect, and cumulative impacts of sea level rise and storm surge in its analysis of project impacts.

VII. Potential Mitigation Measures Are Speculative, Inadequate, and Based on Incomplete Information

The U.S. Army Corps of Engineers has an independent responsibility under Section 404 of the Clean Water Act to determine if the project is consistent with the "public" interest and if impacts to the Waters of the United States have been adequately avoided, minimized, or mitigated. As a cooperating agency, the Corps will depend on information included in the EIS to comply with the requirements of NEPA in issuing a permit under the Clean Water Act. The Corps makes this determination through its own Record of Decision (ROD) and Department of Army (DA) permit. The potential mitigation measures proposed in the DEIS are speculative and inadequate and their effectiveness is not properly examined as required under NEPA.

NEPA is "our basic national charter for protection of the environment,"⁴⁸ ensuring that federal agencies identify and analyze detailed information regarding significant environmental impacts of proposed projects and that such information is disseminated to a wide audience. Within an EIS, the EIS must describe the environmental impacts of the proposed action; "adverse environmental effects which cannot be avoided should the proposal be implemented;" alternatives to the action proposed;

“the relationship between local short-term uses of man’s environment and the maintenance and enhancement of long-term productivity;” and any “irreversible or irretrievable commitment of resources which would be involved in the proposed action should it be implemented.”⁴⁹

The proposed project will impact approximately 1000 acres of tidal and freshwater wetlands in order to construct Units 6 & 7.⁵⁰ Portions of the project, as outlined in permit application number 2009-02417 (SP-MLC), include (1) new transmission lines, (2) Units 6 & 7 site, (3) pipelines for potable and reclaimed water, (4) equipment barge unloading area, (5) transmission line crossing under the Miami River, (6) access roads, (7) radial collector wells located under Biscayne Bay, and (8) pre-treatment building. Impacted wetlands include mangrove swamp, sawgrass marsh, seagrass, mixed wetland hardwoods, freshwater and saltwater marsh, and wetland shrub.⁵¹ The project will directly impact approximately 300 acres of high quality mangrove wetlands, 40 acres of sawgrass marshes, and one acre of submerged aquatic vegetation, all of which are considered by the U.S. Environmental Protection Agency to be aquatic resources of national importance (ARNI).⁵²

The DEIS fails to comply with NEPA because its determinations of the project’s environmental impacts, dismissal of other alternatives, and recommendation to issue the COL are based on speculative mitigation measures that have not been adequately analyzed. NEPA requires an analysis and discussion of the extent to which adverse effects can be avoided.⁵³ Therefore, the DEIS is insufficient in satisfying the requirements of NEPA because it merely lists “possible” and “potential” mitigation measures for terrestrial impacts of the project.⁵⁴ It fails to adequately analyze the effectiveness of the proposed measures in mitigating project impacts,⁵⁵ despite the fact that an “essential component of a reasonably complete mitigation discussion is an assessment of whether the proposed mitigation measures can be effective.”⁵⁶

Notwithstanding the failure of the DEIS to adequately analyze the efficacy of “proposed” or “possible” mitigation activities, the DEIS gives an impact category to wetland and terrestrial impacts and recommends that the COL be issued based on potential mitigation measures described in the Environmental Report and DEIS.⁵⁷ The determination of an impact level category for each resource area is based on the assumption the mitigation activities are implemented. “Proposed mitigation efforts” are listed and include an in-lieu fee program, mitigation banks, or permittee responsible mitigation.⁵⁸ It is unclear as to which combination of mitigation measures will actually be implemented, considering that some possible mitigation options, including the NPS Hole-in-the Donut Mitigation Bank, are not federally approved and that some programs are not approved by the U.S. Army Corps of Engineers.⁵⁹ Furthermore, the DEIS does not describe why and how mitigation measures will sufficiently offset the loss of wetlands anticipated as a result of this project. In order to comply with NEPA, a more thorough analysis of concrete and actionable mitigation measures must be included in an EIS.

The NRC repeatedly states that the U.S. Army Corps of Engineers has not evaluated the proposed mitigation measures because the applicant has not demonstrated that wetland impacts have been avoided or minimized according to Clean Water Act section 404(b)(1) guidelines.⁶⁰ An evaluation of proposed mitigation measures by the Corps is expected as part of the Corps’ Record of Decision, which will not be made until after the Final EIS is issued. Furthermore, the DEIS indicates that further mitigation for wetland and listed species impacts may be required.⁶¹ It is premature for the NRC to issue a DEIS, assign impact analyses to affected resources, dismiss other alternatives, and issue a preliminary recommendation to issue a COL prior to any substantive analysis of the effectiveness of mitigation measures. The information requirement to make such a determination must be included in the DEIS, rather than any future decision-making process. After reviewing the proposed mitigation for the project, the EPA determined that a permit for the project should not be issued because of “substantial and unacceptable impacts to mangrove wetlands, sawgrass marshes,

and submerged aquatic vegetation.”⁶² Pursuant to the Clean Water Act 404(b)(1) Guidelines⁶³ and a February 6, 1990 Memorandum of Agreement between the Corps and the EPA regarding the Determination of Mitigation under the Clean Water Act 404(b)(1), “an applicant must demonstrate avoidance and minimization of wetland impacts before compensatory mitigation can be considered.”⁶⁴ The DEIS must therefore include a more substantial discussion and analysis of mitigation measures, rather than a mere identification of “possible” or “potential” mitigation activities, and a sufficient discussion of how mitigation activities would effectively offset the impacts of the proposed projects.

In consideration of the fact that the proposed project will have significant negative impacts to the ecology and health of Biscayne Bay, Biscayne National Park, and adjacent sensitive ecological areas, any consideration of adequate mitigation must include mitigation activities that offset these negative impacts by improving the health of these important ecological areas. The BBCW project aims to improve the health of nearshore and wetland areas of Biscayne Bay and Biscayne National Park by rehydrating coastal wetlands. In order to achieve the goals of this project, significant water storage and delivery must be developed in the area adjacent to Turkey Point Power Plant. Much of the lands needed for public ownership to proceed with the project are currently owned and managed by FPL. Transferring such land into public ownership for the purposes of BBCW as originally envisioned by CERP would go a long way towards achieving Everglades restoration goals and the restoration of critical wetland habitat and function in Biscayne Bay. Thus, mitigation measures should include the transfer of FPL land within the footprint of the original and complete BBCW project to public ownership.

Conclusion

Thank you for the opportunity to comment on this document. We firmly believe that, due to the deficiencies in the information and analysis provided in the DEIS and the multitude of negative environmental impacts on the surrounding environment, the NRC should not issue COLs for Turkey Point Units 6 & 7.

Sincerely,
(Signatures waived to expedite delivery)

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The National Parks Conservation Association is America's leading voice in protecting and enhancing our National Park System for present and future generations. NPCA is a nonprofit, nonpartisan parks advocacy organization with more than 362,500 members nationally, and 18,500 in Florida. NPCA and its members care deeply about the health of our national parks, protecting water and biodiversity, and conserving cultural resources. Consequently, the construction and operation of Units 6 & 7 and its potential impacts on national parks are of great concern to NPCA and its members.

The Center for Biological Diversity is an environmental nonprofit with a mission to protect and conserve endangered and threatened species. We believe that the welfare of human beings is deeply linked to nature – to the existence in our world of vast diversity of wild animals and plants. Because diversity has intrinsic value, and because its loss impoverishes society, we work to secure a future for all species, great and small, hovering on the brink of extinction. We do so through science, law and creative media, with a focus on protecting the lands, waters and climate that species need to survive. We are supported by over 825,000 people, including thousands of Floridians and people who visit Florida who would be impacted by the proposed project.

Miami Waterkeeper (MWK, formerly Biscayne Bay Waterkeeper) is a Miami-based 501(c)(3) non-profit organization that advocates for Biscayne Bay, its watershed, and its wildlife. Our goal is to educate locals and visitors about the vital role of clean water in Miami's clean water economy, and to empower them to take an active role in community decision making. We hope to ensure a clean and vibrant Biscayne Bay and coastal culture for generations to come. We are a member of the Waterkeeper Alliance, an internationally recognized, citizen-led alliance working for clean water around the world. Launched in 2011, MWK is the first Waterkeeper in South Florida and the only advocacy organization dedicated to protecting Biscayne Bay and its surrounding watershed.

South Florida Wildlands Association is a non-profit environmental organization incorporated in the State of Florida to protect wildlife and wildlife habitat in the Greater Everglades. We focus on impacts and potential impacts to the large swaths of undeveloped lands and waters, in either public or private ownership, which exist outside of South Florida's urban boundaries. SFWA's conservation efforts are carried out through educational talks at various community venues, emailed "action alerts," interviews and articles in the press and other media, communications with public officials, and, where necessary, litigation.

Tropical Audubon Society is a group of dedicated citizens who care about the quality of South Florida's environment. The Tropical Audubon Society was established in 1947, and is a chapter of Audubon of Florida and the National Audubon Society. The Tropical Audubon Society is a non-profit, 501(c)(3) tax-exempt organization. Our headquarters, the Doc Thomas House, is a Dade County Historic site and nature center. It occupies three sub-tropical acres of native habitat in South Miami at 5530 Sunset Drive, and we have about 4,000 members.

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May 22, 2015

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Re: Comments on Turkey Point Expansion, NRC-2009-0337, 2009-02417 (SP-MLC)

Dear Ms. Bladey and Ms. Clouser,

Please consider these comments from the Southern Alliance for Clean Energy (SACE) on the U.S. Nuclear Regulatory Commission's (NRC) Draft Environmental Impact Statement (DEIS) for Combined Licenses (COLs) for Turkey Point Units 6 & 7, Docket ID NRC- 2009-0337, and as publicly noticed by the U.S. Army Corps of Engineers (USACE), 2009-02417 (SP-MLC). SACE is a regional non-profit organization with members in Florida, in FPL's service region, and across the Southeast concerned about the impacts energy choices have on our health, economy and environment.

We continue to have serious concerns about FPL's proposal to potentially build two new Toshiba-Westinghouse AP1000 reactors at their existing Turkey Point site in Miami-Dade County. The uncertainties of this more than \$20 billion, decade-delayed project continue to escalate, putting utility ratepayers and the environment at increasing risk. Fundamentally, there is no purpose and need for the two reactors.

Further, if the expansion of Turkey Point does occur, it could have profound and unacceptable environmental impacts to regional water resources, Biscayne and Everglades National Parks, wildlife, wetlands and threaten public health and safety. There are more affordable, less water-intensive ways for FPL to meet energy demand¹ while protecting the environment and addressing climate change. SACE believes that the DEIS fails to adequately discuss and analyze these potentially adverse impacts and insufficient proposals for mitigation. As such, we recommend that the NRC and USACE support the "No Action" alternative.

Our comments focus on the need for power and the NRC's misplaced reliance on Florida's need determination process, water impacts including groundwater and cooling water concerns, speculative mitigation concerns, highly radioactive nuclear waste and public notification and accessibility concerns. These comments are in addition to the oral comments SACE Florida Policy Attorney George Cavros provided at the NRC's April 22, 2015 public hearing in Miami.

Need for Power

The NRC's reliance on the Florida need determination process is misplaced. The foundation for the need for power, which is a foundational consideration in the DEIS, is based on a 2008 state need determination order by the Florida Public Service Commission (PSC), whose underlying assumptions have been not stood the test of time. In fact, the load forecast assumptions made in 2008 regarding the need for the reactors to meet demand bear no resemblance to today's load forecast realities. Moreover, the NRC analysis of the need determination order is cursory and not weighed against current forecast realities to determine if the process meets the NRC's own requirements (NUREG-1455) for responsiveness to forecasting uncertainty.

Instead, the NRC offers a conclusory opinion with mere references to the order that are not independently verified by FPL's own subsequent filings with the Florida PSC. Therefore, the NRC should take a "hard look" at the underlying need for power by conducting an analysis of Florida regulations and the load forecasts, as they exist today, in rendering a decision on the need determination's responsiveness to load forecasting uncertainty. If it does so in a thorough manner, it can only conclude that the process that determined need for the plant is obsolete, not remotely responsive to load forecast uncertainty, and does not support the need for power upon which the DEIS is based.

The NRC relies exclusively on the PSC's Order No. 08-0237-FOF-EI in concluding that there is a need for power. (DEIS 8-4 – 8-12). Yet, the load projections, and the related assumption for the need for the reactors in the 2008 need determination were flat wrong. The order states, in part that "FPL's peak load is expected to increase by over 6,000 MW by the year 2020." (PSC Order 08-0237-FOF-EI p.10). In fact, the increase in peak load demand projected from the Company's 2015 Ten Year Site Plan shows that the increased peak load from 2008 to 2014 and projected peak load out to 2020 only amounts to a 3,847 MW increase in peak demand. (FPL 2015 Ten Year Site Plan, p. 42). The order upon which the NRC relies, goes on to state the following: [I]f load forecasts were to dramatically drop or the amount of DSM or renewable generation available were to substantially increase, the likely result would be the deferral or avoidance of some natural gas-fired power plants which have not been certified to date, *rather than the deferral* or avoidance of new nuclear base-load generation. (emphasis added). (PSC Order 08-0237-FOF-EI p.10).

Truth is, with the dramatic drop in demand, it is the proposed reactors that have been pushed back, *not* new natural gas plants. The in-service dates for Turkey Point 6 and 7 have been delayed several times. It was most recently announced that the new projected in-service dates for the reactors is 2027/2028.

The determination of need never contemplated an in-service date pushed back almost a decade. (PSC Order 08-0237-FOF-EI p.1). In the absence of the proposed reactors, the Company

has continued to repower existing natural gas plants and intends to return to the PSC for another determination of need for a natural gas combined cycle plant this year with a projected in-service date of 2019. (FPL 2015 Ten Year Site Plan, p. 9). There is no discussion of this new dynamic in the DEIS.

The DEIS continues to be riddled with inaccuracies. It states that FPL is expected to fall below the 20 percent summer reserve margin requirement in 2016 by 824 MW. By 2022, the projected year referenced in the DEIS during which Unit 6 might become operational, the reserve margin would be 5.4 percent. (DEIS 8-9). This is simply incorrect and not consistent with FPL's 2015 Ten Year Site Plan and further indicates the NRC's careless analysis of PSC Order 08-0237-FOF-EI against the realities that exist in Florida today. Moreover, the NRC inexplicably shifts its focus from the 2018/2020 timeframe (in service dates used in the need determination) to a 2022 timeframe without any explanation of how it transitioned to that year nor why it failed to incorporate the most recent projected operation dates of 2027/28. (DEIS 8-9). The DEIS must analyze its conclusion that there is a need for power in the context of the FPL's current resource planning scenario as identified in its 2015 Ten Year Site Plan.

The DEIS does not directly address the fact that FPL has currently missed the projected in service dates by almost a decade, nor does it address the issue that the utility continues to not commit to actually construct the proposed reactors⁴ and simply continues to seek determinations of need for natural gas combined cycle facilities that were not contemplated in the very PSC order on which the NRC places its reliance.

Not only have the facts today proven that the Turkey Point 6 and 7 need determination is not responsive to forecast uncertainty, as a matter of law, once the order is issued, it cannot be revisited – rendering any decision related to need unresponsive to load forecast uncertainty. The Florida PSC is the sole forum for a determination of need as plainly stated in Florida statute. In making its determination on a proposed electrical power plant using nuclear materials or synthesis gas produced by integrated gasification combined cycle power plant as fuel, the commission shall hold a hearing within 90 days after the filing of the petition to determine need and shall issue an order granting or denying the petition within 135 days after the date of the filing of the petition. The commission shall be the sole forum for the determination of this matter and the issues addressed in the petition, which accordingly *shall not be reviewed in any other forum*, or in the review of proceedings in such other forum. (emphasis added).

Hence, pursuant to the need determination process, the need for the Turkey Point reactors cannot be challenged or revisited once the order has been issued. Therefore, if the PSC grants a determination of need based on economic conditions which are no longer relevant, and the need determination cannot be revisited, it begs the question: how can the NRC reach its tersely explained conclusion that the need determination process *is* responsive to load forecast uncertainty, when it is in-fact not? The NRC's reliance on the state process is misplaced. The agency must take a hard look at the need for power.

Water Impacts

The region surrounding the Turkey Point nuclear plant is an extremely complex and sensitive hydrological environment that is only becoming more complicated as human populations

increase and the effects of global climate change emerge, including sea level rise. The history of the Everglades and the current costly restoration projects illustrate the long-term shortsightedness that has scarred Florida's waterways. When comparing types of energy generation, nuclear power has higher rates of both water withdrawal and consumption than traditional coal and natural gas and far more than renewable energy sources, such as wind and solar. Additionally, energy efficiency has the added benefit of substantially reducing energy needs, while simultaneously reducing water consumption.

As we see FPL's projected figures for water demand increase for thermoelectric power generation, the NRC needs to fully evaluate current information about less water intensive energy alternatives, efficiency and renewables, including using a combination of these energy options. The NRC also needs to better analyze the impacts such a drastic increase in water demand from the power sector could cause to this area.

Cooling Water Concerns

The NRC is aware that FPL has been experiencing significant problems related to cooling water and the cooling canal system (CCS) needed for their existing Turkey Point 3 and 4 reactors. Further, on March 23, 2015 an Atomic Safety and Licensing Board panel admitted a modified contention, based on the October 14, 2014 petition of Citizens Allied for Safe Energy, Inc. (CASE) who successfully requested a hearing on license amendments issued to FPL's Turkey Point reactor Units 3 and 4, which increased the ultimate heat sink (UHS) water temperature limit for the plant's cooling canal system (CCS). Contention 1, which is still pending, states: "The NRC's environmental assessment, in support of its finding of no significant impact related to the 2014 Turkey Point Units 3 and 4 license amendments, does not adequately address the impact of increased temperature and salinity in the CCS on saltwater intrusion arising from (1) migration out of the CCS; and (2) the withdrawal of fresh water from surrounding aquifers to mitigate conditions within the CCS."

We believe there is new information regarding reactor Units 3 and 4 that affects the analysis and/or determinations in the DEIS for reactor Units 6 and 7. The NRC has a continuing obligation to update the Turkey Point 6 and 7 EIS with new and significant information and that information must be included and analyzed before an FEIS is issued. For instance, recent reports highlight an ever-worsening situation that could have implications for the proposed Turkey Point 6 and 7 reactors, including the possibility of piping reclaimed water from the Miami Dade County's southern sewer treatment plant which was also proposed to cool the two proposed new reactors:

"The utility obtained an emergency permit Tuesday from the South Florida Water Management District to pump more water into the 5,900-acre loop used to cool the plant's two nuclear reactors. But Miami-Dade County Commissioners added a strict caveat: they agreed to provide a permit to pump the water across sensitive wetlands only for a year and only if the utility comes up with a long-term fix. ... The canals first began running hot last summer after the utility completed work to increase power coming from the plant on southern Biscayne Bay. The hotter and increasingly saltier canals triggered persistent algae blooms, threatened to shut down the

reactors and forced the utility to scramble to find ways to better control the system. But finding a solution has proved tricky and set off debates over South Florida's fragile water supply, with the county, the city of Miami, Biscayne National Park, environmentalists and even rock miners raising objections. In addition to raising the risk of power outages, the canals have pushed an underground saltwater plume closer to drinking water supplies.

Last summer, after the Nuclear Regulatory Commission agreed to allow operating temperatures to rise to 104 degrees, the hottest in the nation, FPL began looking for water to cool and freshen the canals. The company won temporary permission to pull water from the nearby L-31 canal — between August and October, the utility pumped 1,135 million gallons or about four times what all of Miami-Dade County uses in a day. The utility hoped to find a more permanent solution by drilling six new wells to pump up to 14 million gallons of water a day from the Floridan aquifer, a source deep beneath the shallow Biscayne Aquifer that supplies most of the county's drinking water.

But local government officials and environmental groups have fought FPL's plans, filing appeals and arguing that diverting water to the plant could derail Everglades restoration efforts intended to revive Biscayne Bay, where increasing salinity threatens marine life. County staff also said adding freshwater could also worsen the movement of underground saltwater. ... Pulling water from the L-31, he explained, is intended to keep the canals working only until six wells can be drilled to pump water from the Floridan for long-term relief. FPL is also now talking with the county about piping reclaimed water from the county's southern sewer treatment plant — water it also intends to use to cool two new reactors now being considered by the NRC. However, that water must be cleaned first and Scroggs said the utility has not yet determined the standards for its use."

These recent developments must be analyzed and considered prior to issuance of an FEIS.

Groundwater Concerns

There are already a host of serious groundwater concerns given the complicated hydrology and hydrogeology in the surrounding area, which will be further exacerbated by increased demand for freshwater resources and the effects of climate change, particularly sea level rise. However, we would like to bring attention to the August 17, 2010 contention that SACE and other joint intervenors submitted, which was accepted in part by the Atomic Safety and Licensing Board Panel on February 28, 2011⁷ and is still pending today.⁸ Contention 2.1 as modified states, "The ER is deficient in concluding that the environmental impacts from FPL's proposed deep injection wells will be "small" because the chemical concentrations in ER Rev. 3 Table 3.6-2 for ethylbenzene, heptachlor, tetrachloroethylene, and toluene may be inaccurate and unreliable. Accurate and reliable calculations of the concentrations of those chemicals in the wastewater are necessary so it might reasonably be concluded that those chemicals will not adversely impact the groundwater should they migrate from the Boulder Zone to the Upper Floridan Aquifer."

Before issuing the FEIS, the NRC must ensure that those chemicals will not adversely impact the groundwater should they migrate from the Boulder Zone to the Upper Floridan Aquifer.

Speculative Mitigation Measures

The following section includes a relevant portion of a contention SACE and other joint intervenors filed on April 13, 2015 with the NRC: “The DEIS for Turkey Point Units 6 and 7 does not comply with NEPA because its determination of the project’s environmental impacts, rejection of other project alternatives, and staff’s recommendation that the COL be issued, are based on impermissibly speculative mitigation measures, the effectiveness of which have not been adequately evaluated.” Excerpt below:

“Implicit in NEPA’s demand that an agency prepare a detailed statement on ‘any adverse environmental effects which cannot be avoided should the proposal be implemented,’ 42 USC 4332(C)(ii), is an understanding that an EIS will discuss the extent to which adverse effects can be avoided.” Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 351-52 (1989).
“[M]itigation [must] be discussed in sufficient detail to ensure that environmental consequences have been fairly evaluated.” Robertson, 490 U.S. at 352. As federal appellate courts have ruled, “a mere listing of mitigation measures is insufficient to qualify as the reasoned discussion required by NEPA.” Neighbors of Cuddy Mountain v. U.S. Forest Serv., 137 F.3d 1372, 1380 (9th Cir. 1998) (quotation marks and citation omitted). An EIS involving mitigation must include a “serious and thorough evaluation of environmental mitigation options.” O’Reilly v. United States Army Corps of Engineers, 477 F.3d 225 (5th Cir. 2007)(quoting Miss. River Basin Alliance v. Westphal, 230 F.3d 170, 178 (5th Cir. 2000)). Moreover, “[a]n essential component of a reasonably complete mitigation discussion is an assessment of whether the proposed mitigation measures can be effective.” S. Fork Band Council of W. Shoshone of Nevada v. U.S. Dep’t of Interior, 588 F.3d 718, 727 (9th Cir. 2009).

The DEIS is deficient because it merely lists “potential” and “possible” mitigation measures for terrestrial impacts (including impacts to wetlands) and does not adequately examine the effectiveness of these measures in offsetting the impacts of the proposed project. See DEIS at 4-3, 4-69-4-72. The NRC assigns an impact category level- SMALL, MODERATE, or LARGE- of potential adverse impacts for each resource area. DEIS at 4-3. This determination of the impact category levels “is based on the assumption” that the mitigation measures are implemented. DEIS at 4-3. The “possible mitigation of adverse impacts” is presented in Section 4.11. DEIS at 4-3. A number of “proposed mitigation efforts” are identified including mitigation banks, an inlieu fee program, or permittee responsible mitigation. DEIS at 10-6. The DEIS, however, does not adequately evaluate how these programs may or may not offset the expected impacts. In fact, it is not clear what combination or suite of measures will be implemented, considering for example that proposed mitigation options such as the NPS Hole-in-the Donut Mitigation Bank is not a federally approved mitigation bank or in-lieu-fee program for the U.S. Army Corps of Engineers. DEIS at 4-71. In fact, the NRC repeatedly states that the proposed mitigation measures have not even been evaluated by the United States Army Corps of Engineers because the applicant has not been able to demonstrate at this time that wetland impacts have been

avoided and minimized pursuant to the Clean Water Act's section 404(b)(1) guidelines. See DEIS pages 4-69, 4-70, 4-73. The Corps' evaluation of the proposed mitigation is expected to be made as part of the Corps' Record of Decision, which will not be made until after the final EIS has been issued. DEIS at 4-2. Moreover, the NRC notes that the further mitigation for impacts to wetlands and listed species may be required. See DEIS at 4-72.

*Despite the absence of any real analysis regarding the effectiveness of these "possible" or "proposed" mitigation measures, the DEIS assigns an impact category to terrestrial and wetland ecology impacts and concludes with the NRC staff's preliminary recommendation to the Commission that the COL should be issued based on the "potential mitigation measures" identified in the Environmental Report and the DEIS. DEIS at 10-28. NEPA requires more. The Court's decision in *Neighbors of Cuddy Mountain v. U.S. Forest Serv.*, 137 F.3d 1372 (9th Cir. 1998) is instructive. In that case, the Forest Service identified certain proposed mitigation measures to offset the damage of increased sediment in creeks caused by a timber sale. The Forest Service described the mitigation as including "such projects as riparian enclosures (fences around riparian areas to keep cattle out) and fish passage restoration (removing fish passage blockages)." *Id.* at 1380. There was no discussion of which of the mitigation measures would decrease sedimentation and there was no estimate of how effective the mitigation measures would be if they were adopted or why an estimate was otherwise not possible. *Id.* at 1381. The Court found the Forest Service's analysis insufficient under NEPA. *Id.* at 1380. *Cf. Okanogan Highlands Alliance v. Williams*, 236 F.3d 468, 473-74 (9th Cir. 2000) (finding the agency's discussion of mitigating measures adequate where among other things the agency gave an effectiveness rating to each proposed mitigation measure). Here, the closest the NRC comes to discussing the effectiveness of the proposed wetland mitigation is listing mitigation units calculated by the applicant under the state's Uniform Mitigation Assessment Method ("UMAM") for each of the proposed mitigation measures. But the DEIS does not discuss whether, why, and how these measures will adequately offset the projected wetland loss. There is also no explanation of why the expected 1:1 mitigation ratio is adequate. In fact, the NRC concedes that the Corps has not even reviewed and verified the applicant's proposed measures. Presumably this will occur in the future as part of the Corps' ROD on the applicant's permit application under the Clean Water Act. Agencies cannot rely on untested mitigation measures and bald assertions that mitigation will be successful and adequate. See *Wyoming Outdoor Council v. U.S. Army Corps of Eng'rs*, 351 F.Supp.2d 1232 (D. Wyo. 2005). That the effectiveness of the mitigation measures must be fully evaluated before a final EIS is issued is underscored by the quality and extent of wetlands that will be impacted by this project¹⁰ and the inherent uncertainty of the NRC's "MODERATE to LARGE" impact determination for terrestrial and wetland ecology impacts.*

The DEIS does not contain the "serious and thorough evaluation of environmental mitigation options" that NEPA requires. O'Reilly, 477 F.3d 225. Thus, it is entirely premature and inappropriate for the NRC to issue a DEIS, assign an impacts analysis to each affected resource, reject other project alternatives, and issue a preliminary recommendation that a COL should be issued, before the effectiveness of mitigation measures are evaluated. "[T]he very purpose of NEPA's requirement that an EIS be prepared for all actions that may significantly affect the

environment is to obviate the need for [speculation by insuring that available data is gathered and analyzed prior to the implementation of the proposed action.” Foundation for N. Am. Wild Sheep v. U.S. Dep’t of Agric., 681 F.2d 1172, 1179 (9th Cir. 1982). See also, Cabinet Res. Group v. U.S. Fish and Wildlife Serv., 465 F.Supp.2d 1067, 1100 (D. Mt. 2006) (finding that agency’s failure “to attempt any assessment of the importance of the missing information calls into question the validity of the [agency’s] conclusions about the impacts of the proposed action” and setting aside the EIS).

Given that the U.S. Army Corps of Engineers is a “cooperating agency” and will be relying in large part on this EIS to satisfy its NEPA obligations with respect to whether to issue a permit under section 404 of the Clean Water Act, makes it all the more reason why this analysis needs to be included in the DEIS and not part of some future decision-making process. The NRC cannot delegate its NEPA responsibilities by deferring to the U.S. Army Corps of Engineers to evaluate the “possible” or “potential” mitigation measures at some later date as part of its separate review process under the Clean Water Act. See Idaho v. Interstate Commerce Comm’n., 35 F.3d 585, 595 (D.C. Cir. 1994) (citing Calvert Cliff’s Coordinating Comm., Inc. v. U.S. Atomic Energy Comm’n, 449 F.2d 1109, 1122-25 (D.C. Cir. 1971)). See also, South Fork Band Council v. U.S. Dept. of Interior, 588 F.3d 718, 726 (9th Cir. 2009) (finding that a non-NEPA document cannot satisfy a federal agency’s obligations under NEPA).

“NEPA emphasizes the importance of coherent and comprehensive up-front environmental analysis to ensure informed decision making to the end that the agency will not act on incomplete information, only to regret its decision after it is too late to correct.” Marsh v. Oregon Natural Resources Council, 490 U.S. 360, 371 (1989). As the Supreme Court explained in Robertson v. Methow Valley, NEPA requires agencies to study the environmental impacts of their decisions so they “will not be overlooked or underestimated only to be discovered after resources have been committed or the die otherwise cast.” Accordingly, the DEIS must include more than a simple listing of “possible” or “potential” mitigation measures and explain in sufficient detail how mitigation measures will effectively offset the anticipated impacts of the proposed project. To allow the NRC staff to defer to the Corps to evaluate the proposed mitigation until after an FEIS is issued, contravenes the very purpose of NEPA and should be prohibited.

Highly Radioactive Spent Nuclear Fuel

More operating nuclear reactors at Turkey Point will produce more long-lived, highly radioactive nuclear waste in the form of spent nuclear fuel for which no safe storage and long-term management yet exists. Coupled with the high vulnerability of this area to sea level rise and severe storm surges from extreme weather events, which will increase from the effects of global climate change, the DEIS is deficient in assessing the impacts to the environment and public health and safety of indefinite on-site, long-term, potentially permanent, storage of this nuclear waste. Having such a large amount of radioactivity clustered in a population-dense, hurricane-prone area could create significant safety and health concerns for Floridians. The NRC must address these cumulative impacts.

Please note that the following section includes a relevant portion of a contention SACE filed with the NRC on April 13, 2015, which we believe is pertinent to raise in our comments on the DEIS: “The DEIS for Turkey Point Units 6 and 7 is inadequate to satisfy NEPA because (at pages 6-14 – 6-16) it incorporates by reference the generic conclusions of the Continued Spent Fuel Storage Rule and GEIS.”¹² Excerpt below:

The Continued Spent Fuel Storage Rule and GEIS, in turn, suffer from numerous failures enumerated in SACE’s comments on the Rule and GEIS:

- *In blatant violation of NEPA and the Court’s decision in New York I, the Continued Spent Fuel Storage GEIS fails to examine the probability and consequences of failure to site a repository. Instead of examining the risk of failing to site a repository, the GEIS rationalizes the risk away, by arbitrarily assuming that spent fuel will be protected by “institutional controls” for an infinite period of time at reactor sites. This assumption is not only absurd and inconsistent with the Nuclear Waste Policy Act (“NWSA”), but it also defeats the Court’s purpose of forcing NRC to reckon with the environmental consequences of its failure to site a repository.*
- *The GEIS fails to acknowledge that the Continued Spent Fuel Storage Rule is a licensing action, and therefore it distorts the statement of purpose and need for the rule as relating to administrative rather than environmental concerns. As a result, the GEIS also mischaracterizes the alternatives that must be considered. Instead of evaluating alternatives related to storage and disposal of spent fuel, the GEIS examines alternatives related to the administrative question of how to prepare an EIS. The result is a farcical cost-benefit analysis that utterly fails to address alternatives for avoiding or mitigating the environmental impacts of storing spent fuel or siting a repository.*
- *The GEIS’ analysis of the environmental impacts of extended spent fuel storage ignores the fact that NRC knows very little about the behavior of spent fuel in long-term or indefinite storage conditions, especially the potentially significant effects of long-term dry cask storage on high burnup fuel integrity. In violation of NEPA, the NRC makes no attempt to quantify these uncertainties.*
- *The GEIS fails to fully consider the environmental impacts of spent fuel pool leaks and fires. In violation of NEPA, the GEIS relies upon incomplete data, adopts a flawed concept of risk, ignores a range of causes for accidents, and fails to assess certain site specific features that could increase the impacts of a leak or fire.*
- *In violation of NEPA, the GEIS makes no attempt to show how the environmental impacts associated with the Continued Spent Fuel Storage Rule will be quantified and incorporated into cost-benefit analyses for nuclear reactors. Although spent fuel disposal and long-term storage costs are high enough to tip the balance of a cost-benefit analysis for reactor licensing away from licensing, nowhere does the NRC explain how it will take these costs into account in reactor licensing decisions.*
- *In violation of NEPA, the GEIS fails to support the limited conclusions in the Continued Spent Fuel Storage Rule and GEIS regarding the technical feasibility of spent fuel disposal.*
- *The NRC has splintered the analysis of environmental impacts associated with storage and disposal of spent fuel into an array of safety findings and environmental analyses. While the issues covered by these separate findings and analyses overlap and involve cumulative impacts,*

the NRC refuses to integrate them. The NRC also refuses to correct inconsistencies between them.

Public Accessibility and Notification Concerns

We believe it is important to mention problems experienced with public accessibility and public notifications associated with the release of the DEIS and related public hearings. Initially there were discrepancies in the meeting times for the afternoon public meeting in Homestead, Florida on April 23, 2015 – both on the NRC’s website and in NRC public meeting notices. There were also different email and mailing addresses to submit public comments to the NRC as listed in separate NRC public notices that were also different than what was listed in the Federal Register Notice. There was also a problem with the DEIS itself in that hyperlinks included in the DEIS were not active, yet appeared to be resulting in the reader receiving an “Authentication Required” error message. In terms of the inactive hyperlinks, we were told that it was a publication problem that occurred during the printing process, that the links were supposed to be removed before printing and that this would be resolved when the FEIS is issued.

All of this caused confusion among the public and SACE staff spent significant time researching and bringing this to the attention of NRC staff. Though NRC staff were cordial and prompt in responding to our concerns, these discrepancies should not have happened. We hope that in the future, a more thorough review process can occur before issuing such important public notices.

Conclusion

Thank you for considering our comments on the DEIS. Our comments demonstrate that there are more affordable, less water-intensive ways for FPL to meet energy demand while protecting the environment and addressing global climate change. As such, there is no purpose and need for the two reactors. If pursued by FPL, the expansion of Turkey Point could have profound and unacceptable environmental impacts to regional water resources, Biscayne and Everglades National Parks, wildlife, wetlands and threaten public health and safety. SACE believes that the DEIS fails to adequately discuss and analyze these potentially adverse impacts and includes insufficient proposals for mitigation. We do not support the issuance of COLs for Turkey Point reactor Units 6 and 7. Instead, we recommend that the NRC and USACE support the “No Action” alternative. If you have any questions or would like to further discuss our concerns, please do not hesitate to contact us.

Sincerely,
(Signatures waived to expedite delivery)

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1 See http://www.cleanenergy.org/wpcontent/uploads/F_SACE_CleanenergysolutionstoTurkeyPtractors_040915.pdf.

2 Available at http://www.cleanenergy.org/wp-content/uploads/F_SACETurkeyPointNRCDEISmtgcmts042215.pdf.

3 FPL Press Release, January 26, 2015. At <http://newsroom.fpl.com/2015-01-26-FPL-announces-plans-to-install-more-than-1-million-solar-panels-at-three-additional-solar-power-plants-as-part-of-continued-strategy-of-advancing-affordable-clean-energy-in-Florida>. And FPL testimony from Richard O. Brown filed on May 1, 2015 with the Florida Public Service Commission, Docket No. 150009, p. 17, states: "...the in-service dates of Turkey Point 6 & 7 utilized in the 2015 feasibility analyses are changed from 2022 and 2023 to 2027 and 2028. These dates represent the earliest practical deployment date for Turkey Point 6 & 7." At <http://www.psc.state.fl.us/library/FILINGS/15/02473-15/02473-15.pdf>.

4 Florida Public Service Commission, Docket No. 130009, Hearing Transcript Volume 3, p. 617. (\$403.519 (3), Fla. Stat.)

5 See March 23, 2015 ASLBP Memorandum and Order, <http://pbadupws.nrc.gov/docs/ML1508/ML15082A197.pdf>.

6 Jenny Staletovich, Miami Herald, "FPL needs more water to run Turkey Point," May 19, 2015. At <http://www.miamiherald.com/news/local/environment/article21419787.html>.

7 See <http://pbadupws.nrc.gov/docs/ML1105/ML110591003.pdf>.

8 See a discussion of the 2.1 contention in the Joint Intervenor's Request for Leave to Respond to NRC Staff's Answers to FPL's Motion for Summary Disposition and Alternatively, Joint Intervenor's Conditional Motion to Admit Second Amended Contention NEPA 2.1, August 20, 2012. At <http://pbadupws.nrc.gov/docs/ML1223/ML12233A743.pdf>.

9 Joint Intervenor's Motion for Leave to File a New Contention Concerning the NRC's Reliance on Speculative Mitigation Measures and Failure to Adequately Examine the Effectiveness of These Proposed Mitigation Measures in the Draft Environmental Impact Statement for the Turkey Point Nuclear Power Plant Units 6 and 7, April 13, 2015. At <http://pbadupws.nrc.gov/docs/ML1510/ML15103A491.pdf>.

10 See DEIS at 1-1 explaining that FPL's permit application to the U.S. Army Corps of Engineers requests authorization to discharge fill into approximately 1,000 acres of jurisdictional wetlands. One of these wetlands is an area known as "Mud Island," which is a special aquatic site according to the 404(b)(1) Guidelines because it has "special ecological characteristics that significantly influence or positively contribute to the general overall environmental health or vitality of the entire ecosystem of a region." DEIS at 4-6.

11 The NRC staff concludes that the overall cumulative impacts on terrestrial resources in the geographic area of interest from past, present, and reasonably foreseeable future actions would be MODERATE to LARGE. "A range is provided because of the review team's uncertainty about the possible effects from the complex interplay of habitat losses from building proposed Units 6 & 7 facilities; habitat loss and degradation from past, ongoing, and anticipated regional land development; the sensitivity of terrestrial habitats in the region to hydrological changes; the number and distribution of Federally- and State listed species present in the region; the presence of two national parks and numerous other conservation lands in the area, and the uncertainty with respect to success of CERP." DEIS at 7-21.

12 Southern Alliance for Clean Energy Motion for Leave to File a New Contention Concerning Reliance by Turkey Point Draft Environmental Impact Statement on the Continued Spent Fuel Storage Rule, April 13, 2015. At <http://pbadupws.nrc.gov/docs/ML1510/ML15103A468.pdf>.