United States Department of the Interior

NATIONAL PARK SERVICE
Southeast Regional Office
Atlanta Federal Center
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Atlanta, Georgia 30303

IN REPLY REFER TO:
1.A.2 (SERO-RD)

DEC 19 2016

Mr. Frank Akstulewicz
Director, New Reactor Licensing
Office of Administration, Mail Stop: OWFN 12 H8
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Colonel Jason Kirk
District Commander
U.S. Army Corps of Engineers
701 San Marco Boulevard
Jacksonville, Florida 32207

Dear Mr. Akstulewicz and Colonel Kirk:

The National Park Service (NPS) appreciates the opportunity to be a cooperating agency with the Nuclear Regulatory Commission (NRC) and the U.S. Army Corps of Engineers (USACE) for the development of the Final Environmental Impact Statement (FEIS) regarding Combined Licenses for Turkey Point Nuclear Plant Units 6 and 7 as proposed by Florida Power and Light (FPL). We appreciate the extensive work done by the NRC and the USACE staff and their willingness to meet extensively with the NPS. However, the NPS continues to have serious concerns regarding the adequacy and accuracy of the FEIS. The NPS is also taking this opportunity to comment on the NRC's Final Safety Evaluation Report (FSER) because it describes natural phenomena, including hurricanes and storm surge, which may negatively affect Units 6 and 7 and have both human and environmental consequences for Biscayne and Everglades National Parks (NP).

USACE is preparing a Least Environmentally Damaging Practicable Alternative (LEDPA) for Clean Water Act Section 404 wetland permits and a Public Interest Review (PIR) in accordance with Clean Water Act Sections 10 and 14 of the Rivers and Harbors Act. According to the FEIS, neither the LEDPA nor the PIR is addressed in this FEIS but will be part of USACE's Record of Decision (ROD). The NPS asserts that there is strong public interest regarding ongoing operational problems with the existing Turkey Point facility, which would be complicated by Units 6 and 7, affecting the success of the multi-billion dollar Comprehensive Everglades Restoration Plan (CERP) and its Biscayne Bay Coastal Wetlands (BBCW) project, as well as the ecological health of Biscayne and Everglades NP fragile resources. As such, the NPS formally

requests that USACE provide its LEDPA and PIR for public review before it issues its ROD. Public comment is not only warranted on the review of the LEDPA, but vital to ensuring that USACE decisions are not contrary to the public interest; are in agreement with the content of the FEIS; and ensure CERP and NPS resources are unnecessarily adversely impacted.

On June 20, 2009, FPL submitted a Combined Construction and Operating License (COL) application to the NRC to build two additional nuclear reactors at the Turkey Point power plant facility in Homestead, Florida. Other proposed infrastructure includes the construction of additional access roads, bridges, a reclaimed water treatment facility, reclaimed and potable water pipelines, Radial Collector Wells (RCW) and associated pipelines, expansion of an existing barge basin, and two separate electric transmission corridors. The Turkey Point power plant complex is located adjacent and contiguous to Biscayne NP and Biscayne Bay and two miles south of Biscayne NP's visitor center. Everglades NP's boundary is located seven miles west of the facility and, as will be articulated throughout this letter, its resources would also be impacted by construction and operation of the project. FPL has also proposed to construct the western powerline adjacent to Everglades NP and the eastern powerline corridor within a small portion of Biscayne NP where FPL has an existing powerline easement. Taken together, this project poses serious direct and cumulative impacts to NPS resources. As such, the NPS questions whether it is good public policy to further expand a nuclear power plant already experiencing environmental problems in a location between two national parks, experiencing an elevated rate of sea level rise, and is highly vulnerable to storm surge. Moreover, the NPS does not have confidence that mitigation can adequately compensate for adverse impacts.

As a cooperating agency, the NPS has continually shared its concerns regarding the accuracy and adequacy of the impacts analysis regarding NPS resources and the CERP. The NPS submitted comments on the Preliminary Draft FEIS on July 8, 2016; Draft Environmental Impact Statement (DEIS) on July 17 and 23, 2015; preliminary draft hydrology and ecology sections of the DEIS on October 8, 2014 and November 25, 2014; Draft Biological Assessments and Essential Fish Habitat Report on January 31, 2014; and scoping comments on August 16, 2010. We have enclosed these documents and incorporated them by reference into this letter.

I. Alternative Site Analysis

As the NPS has stressed throughout this process, it does not seem to be in the public interest to expand a power plant adjacent to Biscayne NP and near Everglades NP. Combined, these National Parks contributed approximately $135 million in 2015 to the local economy, and further provide a critical function of buffering inland areas that would otherwise be more vulnerable to hurricanes, storm surge, and sea level rise. Moreover, both parks contain numerous fragile threatened and endangered species, and are undergoing major multi-billion dollar ecological restoration activities. Nonetheless, the NRC and USACE have not fully considered alternative sites for the project aside from Turkey Point.

The analysis of environmental impacts for all of the energy generating alternatives is based on locating them solely at the Turkey Point location. As an example, the analysis for the natural gas alternative assumed building and operation of a natural-gas-fired plant at the Turkey Point site without analyzing siting the plant at a different location.

FPL applied different criteria to screening the non-Turkey Point sites than it used to screen the existing Turkey Point site. In the analysis of environmental impacts for siting locations at Glades, Martin, Okeechobee, and St. Lucie, these sites were only evaluated as to the environmental impacts of siting a new two-unit nuclear power plant. It is unlikely that the Turkey Point site would have ranked as high for FPL if there was not an existing, operating nuclear power plant at that site. FPL selectively applied its own screening criteria to the other candidate areas including, but not limited to, avoidance of high population areas, ecologically sensitive and special designations, and special dedicated land uses such as national parks. It is probable that the Turkey Point site would have been screened out utilizing the above criteria.

The siting analysis overlooks the impact of supporting infrastructure, such as the FPL's proposed Western Transmission Corridor nearly adjacent to Everglades NP. It also neglects to consider:

- the presence of major Federal investments including Biscayne and Everglades NPs and numerous other protected areas;
- the high concentration of sensitive Federal and State listed Threatened and Endangered species in South Florida, a biodiversity hotspot;
- Federal, state, and nonprofit investment in the multi-billion CERP BBCW Project;
- major problems relating to the Industrial Wastewater Facility (IWF), including violation of its National Pollution Discharge Elimination System (NPDES) permit, recent algae blooms, and a demonstrated hydrologic connection to Biscayne Bay and Biscayne NP;
- the subterranean hypersaline plume underlying the Turkey Point facility and Biscayne NP, which was created by (and remains hydrologically connected to) the IWF;
- radioactive tritium, a tracer for the IWF, is found well above background levels within Biscayne NP and Biscayne Bay;
- the IWF poses an acute risk to sensitive NPS resources from hurricane and storm surge events;
- sea level rise is occurring at an increased rate in South Florida;
- the site of Units 6 and 7 is important mud flat and wetland habitat for shorebirds and nearly adjacent to the NPS boundary;
- impacts to the experience of National Park visitors and recreationists, where park visitations brings an estimated $135 million (2015) to the local economy; and
- the presence of Metropolitan Miami, which is clearly within the 50 mile radius and is the eighth most populous urban area in the United States. Any evacuation would require a route going north toward the City of Miami and heavily populated areas which are downwind of prevailing winds during much of the year.

As such, cumulative impact levels for water and ecological resources at Turkey Point are grossly underrated in the FEIS.

The NPS contends the FEIS does not sufficiently support the NRC's conclusion that "from an environmental perspective, none of the viable alternatives is environmentally preferable to building a new baseload nuclear power generation plant at the Turkey Point site." It appears that the four inland alternative locations do not pose the same level of environmental concern.

Additionally, a number of pending legal actions exist that have an impact either directly or indirectly on this project. Among these is a now final order issued by the Third District Court of Appeal (3rd DCA) reversing and remanding the Final Order on Certification (Siting Order) rendered by Florida's State Siting Board; FPL's pending motions were denied on November 22, 2016. The Siting Order was reversed in its entirety (i.e. Units 6 and 7 and supporting infrastructure, including the Western Transmission Corridor), not in part, and remanded for further review consistent with local environmental regulations, comprehensive plans, and applicable environmental regulations.

As further evidence of the existing and potential future infeasibility of nuclear expansion at the Turkey Point site, FPL has stated earlier this year before the Florida Public Service Commission that they plan to take at least a four year "pause" before construction to analyze economic factors affecting the decision to proceed with an expanded nuclear facility at Turkey Point.

The NPS continues to assert that scientific uncertainty and numerous legal and regulatory issues, most of which relate to the IWF, and the uncertainty of when this project could be built should be considered and resolved before Units 6 and 7 are built because they may exacerbate current problems.

II. Units 6 and 7 Increases IWF Risk to Biscayne NP

A basic question neither the FEIS or FSER addresses is how the construction and operation of Units 6 and 7, which would be surrounded by IWF canals, would impact the surrounding area if a hurricane and major storm surge event were to occur. Because of its coastal location, experts have noted and it has been well publicized that reactors at Turkey Point are similarly susceptible as those in Fukushima, Japan to natural disasters. For example, how would the outer walls of the Units 6 and 7 block island affect the IWF, Biscayne NP and Biscayne Bay, if the eye of Hurricane Matthew, or a comparable storm, passed over Turkey Point? In October 2016, Hurricane Matthew passed very close to the Florida coast as a Category 3 to 4 storm and created more than 12 feet of storm surge in Lake Worth, located 90 miles north.

A concerning and reasonably foreseeable scenario is that a storm surge event would push Biscayne Bay water westward over the narrow eastern berm and across an IWF canal before contacting the outer wall of Units 6 and 7. Polluted IWF water could then be pulled back in part into Biscayne NP and Biscayne Bay either over the narrow eastern levee or through subsurface connectivity. There is also a high likelihood that such a storm surge event upon contact with the outer walls of Units 6 and 7 could be driven back toward the levee thereby causing a breach of the eastern levee and driving significant amounts of polluted IWF water into Biscayne NP and the Biscayne Bay. Breaches of the levee further south could also cause newly stored Units 6 and 7 dredge spoils to enter Biscayne NP and Biscayne Bay. These risks would likely increase when future sea level rise is combined with a storms anticipated storm surge. These reasonably foreseeable scenarios are not analyzed in either the FEIS or Safety Report. The enclosed map titled "Hurricane/Storm Surge Risk to Biscayne National Park" depicts this concern in detail.

Even though much can be learned from prior storm events, models that analyze past storm forward speed, trajectory, and initial tide level show that a storm as small as a Category 3 could

lead to over wash of the IWF under the right conditions, and larger storms and sea level rise increase that likelihood. The NPS enclosed map titled "Modeled Storm Surge from Category 3 and Category 5 Hurricanes" further illustrates this concern.

The NPS raised these concerns previously and was advised by NRC that they would be considered in the FSER. However, upon review, it appears that the FSER solely analyzes safety issues within the Unit 6 and 7 block island. The NPS has routinely asserted that the IWF is unsustainable and that its presence adjacent to the National Park System's preeminent marine park poses a serious risk to sensitive NPS resources in the event of a major hurricane and storm surge event. Excessive IWF water entering Biscayne NP and Biscayne Bay would likely impair NPS resources for future generations to enjoy, which the NPS is required to prevent under the 1916 NPS Organic Act, as well as the "rare combination of terrestrial, marine, and amphibious life in a tropical setting" that Biscayne NP was established to preserve.

III. Direct and Cumulative Impacts to Federal Investments

The FEIS neglects to recognize and accurately reflect past and existing environmental impacts from the Turkey Point facility and reasonably foreseeable future impacts that would occur through the construction and operation of Units 6 and 7 and supporting infrastructure.

- **Comprehensive Everglades Restoration Plan and Biscayne Bay Coastal Wetlands Project:** The NPS disagrees with the impact levels that USACE has assigned to the cumulative impacts for surface water use, groundwater use, surface water quality, and groundwater quality. While stating in one part of the FEIS that withdrawals of surface water from the L-31E Canal would only be allowed during periods of excess flow, consumptive use of surface water from L-31E would not alter the volume of water in Biscayne Bay. As such, the FEIS is inaccurate because the important issue is maintaining freshwater delivery to Biscayne Bay, not the volume of saltwater in the Bay. Elsewhere the FEIS states that the use of surface water from the L-31E Canal diverts it from and could result in less freshwater available for CERP BBCW Project. The NPS considers this a diversion and elimination of freshwater that will negatively impact Biscayne NP, Biscayne Bay, and the BBCW Project.
- **Industrial Wastewater Facility:** The FEIS understates the negative cumulative impacts of past, present, and future use of the IWF. Despite extensive monitoring over a period of years, a hypersaline plume also containing other pollutants such as phosphorus, nitrogen and ammonia has been allowed to migrate west toward Miami-Dade County's drinking water wellfield and east to Biscayne NP and Biscayne Bay. The presence of the tracer element tritium in Bay waters adjacent to the Turkey Point facility is evidence of connectivity and movement of the IWF water into the ecologically sensitive waters of Biscayne NP and Biscayne Bay in violation of FPL's strict liability NPDES permit as well as the Federal Court 1971 Final Judgment. At present there is no guarantee that any efforts to eliminate the plume and its movement will be successful.
- **Radial Collector Wells:** The NPS is concerned that the analysis in the FEIS is inaccurate because it relies on an assumption that the RCWs will be used as a water source only in an emergency and on a short-term basis. The FEIS does not analyze whether extended RCW operations could draw the subterranean hypersaline plume

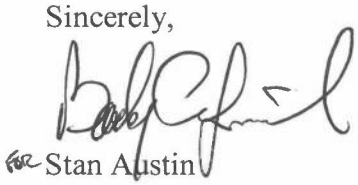
further eastward into Biscayne NP or if RCW operation may impact nearby seagrass communities within the park adding to the future negative cumulative impacts. An additional modeling effort by the NRC considered RCW operation on the hypersaline groundwater plume beneath the Turkey Point site (Biscayne NP and Biscayne Bay). While helpful, the modeling effort has a number of limitations that are not made clear in the FEIS. First, it doesn't address issues such as the source of the freshwater necessary to create the proposed scenarios. Second, the model does not address the recently observed leakage from the IWF system into surface waters. Third, the model tracks the salt associated with the hypersaline IWF water, but does not track the motion of nutrients, which are expected to have adverse impacts on the natural system in Biscayne NP and Biscayne Bay.

- **Western Transmission Corridors:** For purposes of the evaluation of impacts, the FEIS incorrectly considers the transmission line route and conditions reviewed and approved by the Florida Siting Board as the most current information regarding the transmission lines and associated mitigation measures, and should be revised accordingly. The 3rd DCA order reversing and remanding the Final Order on Certification, along with the Conditions of Certification, became final on November 22, 2016, thereby leaving the location of the transmission line corridors uncertain. FPL's western transmission line corridor as contained in the FEIS is adjacent to Everglades NP. The extent of the future adverse cumulative impacts of the transmission lines as considered in the FEIS is reflected in the 3rd DCA decision, which draws on an earlier review by the NPS of the impacts of the transmission lines on avian species. The 3rd DCA found that the West Preferred Corridor would adversely impact the environment and the ecology of the land and its wildlife including listed species under the Endangered Species Act. Two of these species, the wood stork and the snail kite, nest and forage for food very close to or in the West Preferred Corridor. Filling wetlands in the area would destroy foraging habitat of these birds. There is also substantial risk that the birds, particularly young birds that have not yet learned how to avoid obstacles, will collide with transmission poles, transmission lines, and guy wires. Such collision is especially concerning because there would be a total of three transmission lines located together; two 500 kV (up to 150 feet tall) transmission lines (containing a total of five wires each) and one 230 kV (up to 105 feet tall) transmission line (containing a total of three wires). Thus, altogether there would be 13 horizontal wires and numerous guy wires within the corridor posing a dangerous obstacle to Everglades NP's renowned birds. The FEIS assumption is invalid that the Conditions of Certification will be effective.
- **Construction of Units 6 and 7:** Construction of proposed Units 6 and 7 would add to the negative future cumulative impacts affecting the IWF by 1) increasing stormwater runoff, 2) demucking of the plant area and muck/spoils disposal, and 3) dewatering from excavation. These activities risk exacerbating problems with the operation of the IWF, which is already likely degrading the NPS's marine and water resources. We are especially concerned that the two million cubic yards of excavated muck stored on the banks of IWF canals could rapidly erode into Biscayne Bay during a storm surge event that breaches the IWF perimeter levee, causing severe damage to Biscayne NP's fragile resources. Also, Units 6 and 7 would be built upon a rare mud flat and approximately 300 acres of wetlands utilized by shorebirds and migratory birds further negatively impacting NPS resources.

- **Chemicals of Emerging Concern (CECs):** Given the large volume of reclaimed wastewater used for Units 6 and 7 (up to 120 Million Gallons per Day (MGD)), even a very low concentration of CECs that are released and fall within the NPS boundary or the Bay, will provide a loading over time that is physiologically and ecologically significant. These areas as Outstanding Florida Waters have and non-degradation standard under the state.
- **Roads**: The 3rd DCA found that filling land and constructing structures in the East Everglades would negatively impact sheet flow and the hydrologic resources of the area thereby adding more negative cumulative impacts to the proposed expansion project. The 3rd DCA further found that the effect on the area's hydrology would destroy the plant species that supplies the base for the food chain in the ecosystem and will adversely affect the endangered birds that nest and feed on the west side of the L-31N Canal; in addition, these adverse impacts would also affect the County's water supply. However, given the 3rd DCA decision, the location of roads is uncertain at present.

If you have any questions, or need additional information regarding our comments, please contact Energy and Environmental Protection Specialist Bryan Faehner at (202) 513-7256 or bryan_faehner@nps.gov.

Sincerely,



for Stan Austin
Regional Director

Enclosures (2)
Map titled "Hurricane/Storm Surge Risk to Biscayne National Park"
Map titled "Modeled Storm Surge from Category 3 and Category 5 Hurricanes"

cc:
Chairman Stephen G. Burns, Commissioner, U.S. Nuclear Regulatory Commission
Kristine L. Svinicki, Commissioner, U.S. Nuclear Regulatory Commission
Jeff Baran, Commissioner, U.S. Nuclear Regulatory Commission
Vonna Ordaz, Office Director (Acting), Office of New Reactors, U.S. Nuclear Regulatory Commission
Anna Bradford, Deputy Division Director, Division of New Reactor Licensing, Office of New Reactors, U.S. Nuclear Regulatory Commission
Alicia Williamson, Project Manager, NRL, U.S. Nuclear Regulatory Commission
Manny Comar, Project Manager, NRL, U.S. Nuclear Regulatory Commission
Megan Clouser, Senior Project Manager, U.S. Army Corps of Engineers
Ashleigh Blackford, Supervisory Biologist, U.S. Fish and Wildlife Service
Chris Militscher, Chief of the NEPA Program Office, U.S. Environmental Protection Agency
Pedro Ramos, Superintendent, National Park Service
Margaret Goodro, Superintendent, National Park Service

Hurricane/Storm Surge Risk to Biscayne National Park

Biscayne National Park, Florida

National Park Service
U.S. Department of the Interior

1. Placement of Units 6 and 7 would result in these Units being surrounded by the polluted canals of the Industrial Waste Facility (IWF). A portion of the IWF canals would be located between the outer walls of Units 6 and 7 and Biscayne National Park (NP) and Biscayne Bay (Bay).

2. It is reasonably foreseeable that a hurricane/storm surge event would wash over the IWF canal and its levee before contacting the outer eastern wall of Units 6 and 7. As the hurricane/storm surge event receded, it would draw polluted IWF water back into Biscayne NP and the Bay. This concern is not analyzed in either the FEIS or Safety Report.

3. There is also a high likelihood that such a storm surge event upon contact with the outer walls of Units 6 and 7 would be driven back toward the levee thereby causing a breach of the eastern levee and driving significant amounts of polluted IWF water into Biscayne NP and the Bay. Breaches of the levee further south would cause newly stored Units 6 and 7 dredge spoils to enter Biscayne NP and Bay. These concerns are not analyzed in either the FEIS or Safety Report.

4. The IWF is not a closed hydrologic system. It is connected to Biscayne NP and Bay, as documented by the presence of tritium (a tracer of IWF water) in Biscayne NP and Bay waters. Other IWF constituent pollutants concurrently enter Biscayne NP and Bay and pose significant ecological risk to the park and Bay.

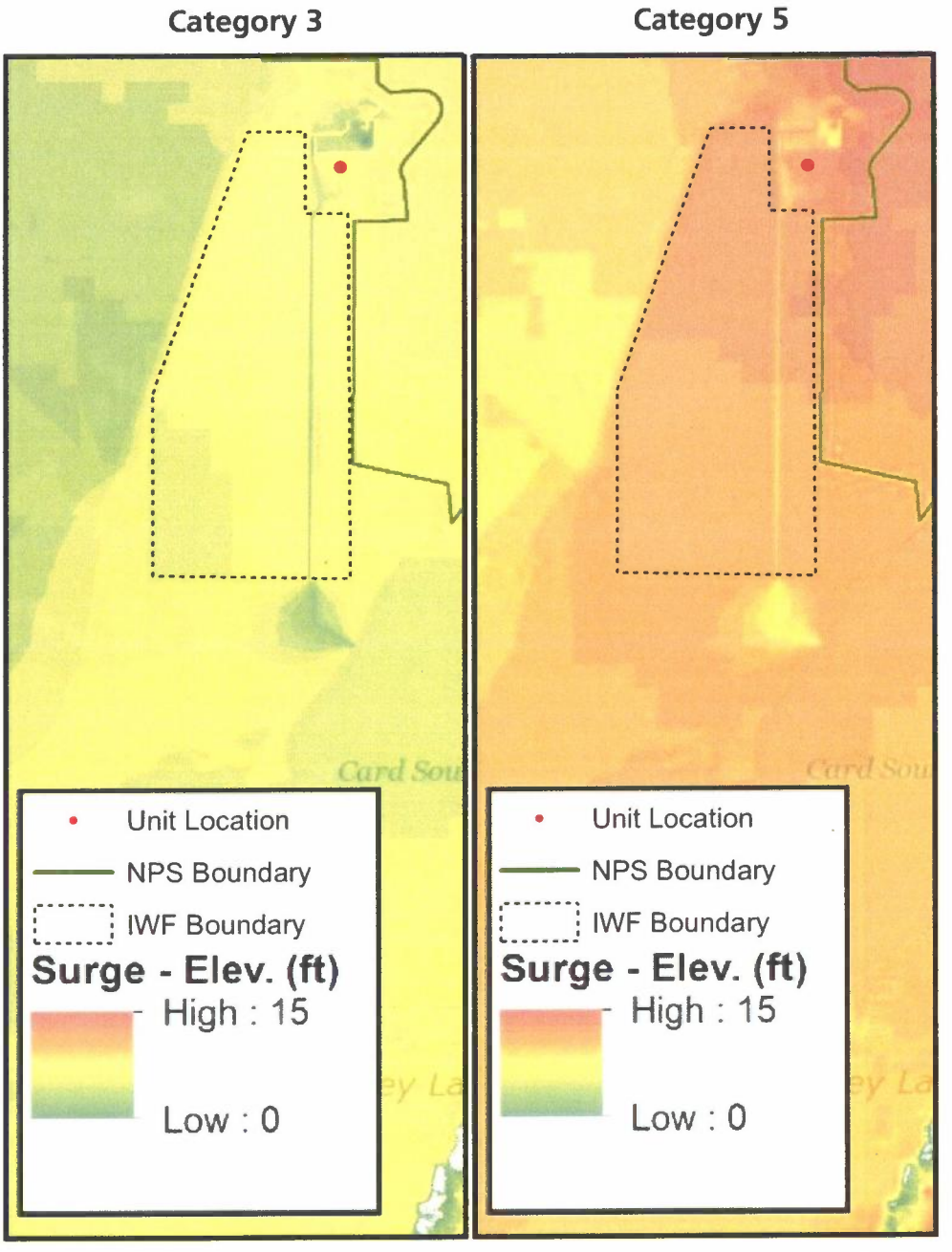
Created by: M. Avalos, National Park Service SERO GIS
Credits: NPS, ESRI

November 2016

Modeled Storm Surge from Category 3 and Category 5 Hurricanes

Biscayne National Park, Florida

National Park Service
U.S. Department of the Interior



The Industrial Wastewater Facility (IWF) is highly susceptible to hurricane driven storm surge events. These two maps show outcomes from NPS runs of the National Weather Service's Sea, Lake and Overland Surges from Hurricanes (SLOSH) model conducted earlier this year. Both the Category 3 (left) and Category 5 (right) hurricane maps show anticipated storm surge based on high tide. Results indicate that storm surge waters would flow over levees separating the IWF from Biscayne National Park (NP) and Biscayne Bay (Bay). Such events increase the likelihood that contaminants in the IWF waters, as well as newly stored dredge spoils from Units 6 & 7 excavation, would enter Biscayne NP and Bay via overwashing and/or breach of the eastern levee (as discussed in accompanying map) in the foreseeable future. This concern is not analyzed in either the FEIS or Safety Report.

Created by: B. Hardel, National Park Service SERO GIS
Credits: NPS, Esri, GEBCO, NOAA, National Geographic, DeLorme, NAVTEQ, Geonames.org

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