cleanenergy.org
Southern Alliance for Clean Energy

Photo Credit: Paul Marcellini

FPL's Turkey Point Nuclear Plant - Existing and Future Threats

FPL's water-guzzling, two-reactor nuclear plant is near Homestead, about 25 miles from Miami sandwiched between two internationally recognized treasures – the Everglades and Biscayne National Parks. Turkey Point requires massive amounts of water to cool down its reactors and utilizes a "once-through" cooling system that draws water from Biscayne Bay and runs it through a series of canals.

Existing Problems

Using vast amount of fresh water to generate energy conflicts with the goals of Everglades restoration and is contaminating the local South Florida drinking water supply and exacerbating salt water intrusion – putting many communities and two precious national parks at risk.[1]

- Turkey Point is already one of Florida's biggest daily water users but it also discharges daily at least 600,000 pounds of salt[2] and other contaminants such as ammonia, heavy metals and tritium (a radioactive form of hydrogen) directly into the Biscayne Aquifer.
- New data shows Turkey Point is contaminating the park and South Florida's main drinking water resource, the Biscayne Aquifer, a "sole source,"[3] federally-designated aquifer that serves over 3 million people.
- Enhanced salt water intrusion would likely affect all of Monroe County, South Dade county generally, Biscayne and Everglades National Parks and communities such as Cutler Bay, Florida City, Homestead, Ocean Reef, and Key Largo, among others.
- The anticipated impacts of global climate change including sea level rise, warmer temperatures and increased flooding will worsen this already unacceptable situation.

FPL's Turkey Point Plant overlooks Biscayne Park.
Photo taken by SACE

Too Much at Risk: Biscayne & Everglades National Parks, South Florida's Drinking Water & Your Wallet

Future Threats

Despite all the problems that FPL's existing reactors are *already* causing, the big power company is actually considering building two more extremely expensive and water-intensive nuclear reactors. FPL customers are already paying in advance for costs associated with these proposed reactors, due to the anti-consumer early nuclear cost recovery law that the state legislature passed, or Florida's "nuclear tax." Since 2008, customers have been charged over $280 million.[3]

Protecting South Florida's drinking water resources for 3+ million people is critical. *Photo: Flickr/Creative Commons.*

- Radial collector wells (RCWs) underneath Biscayne Bay would provide backup cooling water for the proposed reactors and could use over 7.4 billion gallons over the course of a year [4] from under the Bay. By comparison, the entire Florida Keys use about 17 million gallons of water a day from the Biscayne Aquifer, or just over 6 billion gallons a year.[5]

- All levels of government agree that there is already not enough freshwater in South Florida. FPL admits that the new reactors will leave even less water in the area. The back-up cooling system for the new reactors threatens to make the situation worse by taking needed water from Biscayne Bay and the Biscayne Aquifer. This process risks more saltwater intrusion into our limited freshwater supply, leaving less freshwater for other needs in South Florida and allowing what is left to be contaminated by very salty water.

- Biscayne Bay and South Florida are extremely susceptible to the impacts of climate change, which will bring rising sea levels, increased extreme storms, and more flooding to the region. In the interest of public safety and environmental health, it makes no sense to expand a nuclear facility in an area that is ground zero for climate change.

Cooling canal system at FPL's Turkey Point which recent study shows are contaminating the Biscayne aquifer and National Park.
Photo: Miami-Dade Co. Environmental Resources Management

cleanenergy.org
Southern Alliance for Clean Energy

Solutions for South Florida

The mess that FPL finds itself in with the existing Turkey Point plant is very complicated, but there are some common-sense steps that could help prevent further damage and contamination.

- Pursue clean, water-saving energy choices: Nuclear power is much more water-intensive than renewable energy sources, such as solar. Our precious water resources should not be squandered on nuclear power when other less water intensive and far more affordable energy options exist such as solar, energy efficiency and conservation.

- Energy efficiency programs provide energy savings that help customers reduce energy use and save money on bills all while protecting our water resources. FPL's proposed nuclear reactors can more cost-effectively be met with demand side management programs. Energy efficiency measures meet demand at less than 3 cents per kilowatt hour (kWh)[6], while the proposed Turkey Point nuclear reactors will meet demand at a cost of nearly 17 cents per kWh.[7]

Cutler Bay Solar Solutions employs local installers. *Photo taken by SACE.*

- Identify and implement more efficient, cooling technologies: Turkey Point's antiquated cooling canal system is not working and the unacceptable situation will only worsen given the expected impacts of global climate change. Ensuring clean, safe, plentiful water supplies and protecting the Everglades restoration efforts is worth far more than lining the pockets of big power companies. Installing cooling towers could be a viable option and should be researched along with other technologies.

- Enforce existing regulations: FPL cannot release salt outside the boundary of the cooling canal system; their existing discharge permit (NPDES permit-National Pollutant Discharge Elimination System) must be enforced and this salt loading must stop.
- Implement – **ABATE/REMEDIATE/MITIGATE:** In 2009, Miami-Dade County and the South Florida Water Management Division (SFWMD) entered in an agreement to **abate** (stop) FPL's improper management of the cooling canal system; **remediate** the damage by cleaning up the salt intrusion; and **mitigate** any damage to the Everglades or Biscayne Bay. The Florida Department of Environmental Protection (DEP) approved the agreement, which called for a 2-year monitoring period of the operations and resulting damage. But now the current DEP is trying to strip the SFWMD of the right to force the agreement to go forward.

What You Can Do

•Submit comments online via this form[8] to the Miami-Dade Co. Board of Commissioners[9] on the recent study prepared by the University of Miami (UM)[10], which the Commission ordered, ***by March 18, 2016***

•Tell the Public Service Commission to stop approving FPL's spending on unnecessary, expensive new reactors at Turkey Point and instead advance less-water intensive, affordable clean energy choices such as solar and energy efficiency measures. Use the contact form[11] or call 1-800-342-3552

•Submit a letter to editor to your local paper

Sources:
1. http://communitynewspapers.com/palmetto-bay/turkey-point-operations-conflict-with-goals-for-biscayne-bay/
2. http://www.miamiherald.com/news/local/environment/article61864922.html
3. http://www.epa.gov/dwssa/overview-drinking-water-sole-source-aquifer-program#What_Is_SSA
4. FL DEP, Conditions of Certification, FPL Turkey Point Plant Units 6&7, PA 03-45A3, May 19, 2014, page 59: Licensee shall be authorized to operate the RCW system up to sixty (60) days and withdraw a maximum volume of 7,465 MG in any consecutive twelve (12) month period [equivalent to sixty (60) days at full capacity of 124.416 MGD]. At http://publicfiles.dep.state.fl.us/Siting/Outgoing/Web/Certification/pa03_45_2014_units6_7.pdf
5. Florida Keys Aqueduct Authority (FKAA), Lime Softening Plant MOR to FL DEP, March 2014-March 2015.
6. ACEEE, *The Best Value for America's Energy Dollar: A National Review of the Cost of Utility Energy Efficiency Programs*, March 26, 2014, at http://aceee.org/research-report/u1402
7. FPL Witness Steven R. Sim, Docket No. 150009, Hearing Transcript Volume 6 at p. 913
8. Form at http://www.miamidade.gov/environment/cooling-canal-study-and-feedback.asp
9. Find your Miami-Dade County Commissioner at http://www.miamidade.gov/commission/home.asp
10. David A. Chin, Ph.D, P.E., D.WRE, BCEE, Professor of Civil and Environmental Engineering, University of Miami, The Cooling-Canal System at the FPL Turkey Point Power Station, February 2016. Available at http://www.miamidade.gov/environment/library/reports/cooling-canal-system-at-the-fpl-turkey-point-power-station.pdf
11. Contact the Florida Public Service Commission at http://www.psc.state.fl.us/AboutPSC/ContactForm

Have questions or need more information?

Contact Laura Reynolds at 786-543-1926 or ConservationConceptsLLC@gmail.com.

Prepared by Southern Alliance for Clean Energy | March 2016 |www.cleanenergy.org