

PMTurkeyCOLPEm Resource

From: Comar, Manny
Sent: Monday, February 06, 2017 7:59 AM
To: TurkeyCOL Resource
Subject: FW: Turkey Point Mandatory Hearing - Comments
Attachments: Florida Keys Aqueduct 12 30 16.pdf; Miami Dade County 12 30 16.pdf; Seminole Tribe Florida 01-03-17.pdf; City of Miami 01 04 17.pdf; Saurth Miami 01 04 17.pdf

From: Docket, Hearing
Sent: Friday, January 06, 2017 10:37 AM
To: Akstulewicz, Brenda ; Akstulewicz, Frank ; Baggett, Steven ; Barnhurst, Daniel ; Bates, Andrew ; Baval, Rochelle ; Bensi, Michelle ; Blake, Kathleen ; Bradford, Anna ; Burkhart, Lawrence ; Castleman, Patrick ; Cianci, Sandra ; Clark, Brooke ; Comar, Manny ; Cook, Christopher ; Courts, Tonya ; Dixon-Herrity, Jennifer ; Docket, Hearing ; Ellmers, Glenn ; Erwin, Kenneth ; Flanders, Scott ; Frazier, Alan ; Giacinto, Joseph ; Gran, Zachary ; Haque, Mohammad ; Harvey, Brad ; Hoellman, Jordan ; Jimenez, Patricia ; Julian, Emile ; Krsek, Robert ; Kugler, Andrew ; Laufer, Richard ; Lepre, Janet ; Martin, Jody ; McGovern, Denise ; Moore, Johari ; Newell, Brian ; OCAAMAIL Resource ; OGCMailCenter Resource ; OPA Resource ; Powell, Amy ; Riddick, Nicole ; Santos, Cayetano ; Schumann, Stacy ; Shane, Raeann ; Shea, Pamela ; Silvia, Andrea ; Smith, Maxwell ; Sola, Clara ; Speiser, Herald ; Stokes, Tracey ; Taylor, Renee ; Temp, Chairman ; Temp, JMB . ; Temp, KLS X ; Terry, Tomeka ; Valliere, Nanette ; Vietti-Cook, Annette ; Williamson, Alicia ; Zorn, Jason
Subject: Turkey Point Mandatory Hearing - Comments

Attached are comments received from the following in the matter of the Florida Power & Light Company, Turkey Point Units 6 and 7 (Mandatory Hearing), Docket Nos. 52-040-COL and 52-041-COL.

- 1) Florida Keys Aqueduct Authority
- 2) Miami-Dade County, Florida
- 3) Seminole Tribe of Florida
- 4) City of Miami, Florida
- 5) City of South Miami, Florida

Clara (Rica) Sola
Rulemakings and Adjudications Staff
Office of the Secretary
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Hearing Identifier: TurkeyPoint_COL_Public
Email Number: 1252

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Subject: FW: Turkey Point Mandatory Hearing - Comments
Sent Date: 2/6/2017 7:58:46 AM
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From: Comar, Manny

Created By: Manny.Comar@nrc.gov

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"TurkeyCOL Resource" <TurkeyCOL.Resource@nrc.gov>
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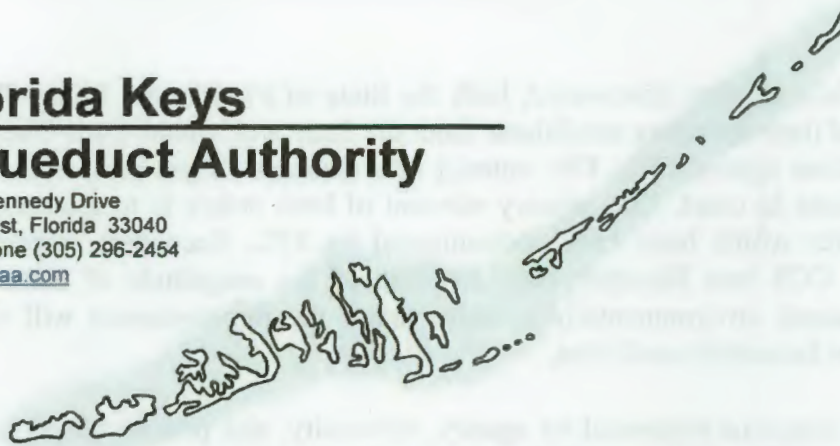
Files	Size	Date & Time
MESSAGE	1693	2/6/2017 7:58:57 AM
Florida Keys Aqueduct 12 30 16.pdf	259344	
Miami Dade County 12 30 16.pdf	624884	
Seminole Tribe Florida 01-03-17.pdf	134878	
City of Miami 01 04 17.pdf	2189134	
Sourth Miami 01 04 17.pdf	7063349	

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Florida Keys Aqueduct Authority

1100 Kennedy Drive
Key West, Florida 33040
Telephone (305) 296-2454
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District 3

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Vice-Chairman
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David C. Ritz
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Cara Higgins
District 1

Richard J. Toppino
District 2

Kirk C. Zuelch
Executive Director

December 29, 2016

Annette L. Vietti-Cook, Secretary
US Nuclear Regulatory Commission
Washington, D.C. 20555-0001

RE: DOCKETS 52-040 AND 52-041
Issuance of Combined Licenses for FPL's Turkey Point Units 6 and 7

Dear Secretary Vietti-Cook:

This letter is to present issues for consideration at your Evidentiary Hearing on February 9, 2017 regarding the application to construct and operate two new nuclear plants in southeast Miami-Dade County. The Florida Keys Aqueduct Authority is an Independent Special District of the State of Florida with the responsibility of supplying the entire group of islands known as the Florida Keys with drinking water from the Class I Biscayne Aquifer located in southeast Miami-Dade County. Our Board of Directors is appointed by the Governor of the State of Florida and has directed staff to prepare this letter in accordance with your correspondence, dated December 8, 2016.

For more than a decade, Florida Power & Light Company (FPL) has been out of compliance with operating requirements of its cooling canal system (CCS). The salinity values in the CCS have risen to concentrations higher than found in seawater. These high concentrations were not contained to acceptable levels as required by FPL's interceptor canal, and as a result, hypersaline conditions have migrated more than two miles beyond FPL's property and a plume of hypersaline has contaminated a large portion of the Biscayne Aquifer. This hypersaline plume and its influence on the movement of saline water as much as four miles westward toward critical drinking water supplies has been an issue that FPL has ignored for years. In 2014, the CCS temperature increased above the permitted range and emergency provisions were granted to allow higher operating temperatures and to tap into unpermitted surface water supplies to reduce temperatures. The CCS experienced increased salinity, regulated nutrients, and other constituents during this emergency. It was later determined, that the CCS had not been properly maintained for many years resulting in sediment accumulation that limited the volume of cooling water and restricted the water flow regime between the canals and the groundwater below and adjacent to the CCS. The primary impact to the Florida Keys from the failure of FPL to conduct the operation of its plant appropriately is to have put at risk the source of all the potable water we provide to our customers. If our wells, which are located approximately ten miles from the FPL plant, are contaminated by the FPL created high salinity plume, the entire water supply to the Florida Keys is gone.

After these FPL failures were discovered, both the State of Florida and Miami-Dade County found FPL in violation of their operating conditions. Both the State and Miami-Dade County filed regulatory and permit violations against FPL. FPL entered into Consent Orders with both entities rather than contest the violations in court. The primary element of both orders is to reduce the salinities in the groundwater aquifer which have been contaminated by FPL. Secondary impacts include nutrient loading from the CCS into Biscayne Bay. Because of the magnitude of these problems and the sensitivity of adjacent, environmentally-sensitive areas, the improvements will take many years to achieve even under favorable conditions.

There are serious concerns expressed by agency, university, and private sector experts that the plan proposed by FPL to fix the hypersaline problem is based on assumptions and analyses that are incorrect and/or inadequate and therefore will not provide the needed scope, capacities, and cost commitments to bring the aquifer back to pre-existing conditions.

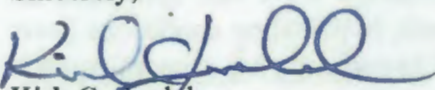
Past and current operational issues caused by FPL have led to the environmental degradation of a sole-source aquifer and Biscayne Bay. FPL had shown little interest in dealing with these unpermitted consequences of its operation until enforcement action was taken. Even with consent orders in place, there is no clear evidence that FPL can resolve the issues they have caused by using the CCS over many years nor can they prove that the CCS is still a viable option to handle thermal loads from the existing nuclear reactors.

FKAA believes that the existing damage to the local environment must be fully reversed before FPL is granted any additional increase to thermal load capacity at its Turkey Point power plant. It makes no sense to allow this expansion when FPL has such a poor track record operating the existing system.

FKAA also requests the USNRC require cooling towers be built for use with the existing operation and the closure of the existing CCS. Once built, the towers would alleviate the thermal loads being imposed by the CCS, leading to recovery of the Biscayne Aquifer and Bay with proven technology.

We appreciate the opportunity to provide these comments to your Commission. If there are any questions regarding our comments, please let me know at your earliest convenience.

Sincerely,



Kirk C. Zuelch
Executive Director

cc: J. Robert Dean, FKAA Board of Directors
Antoinette M. Appell, FKAA Board of Directors
David C. Ritz, FKAA Board of Directors
Cara Higgins, FKAA Board of Directors
Richard J. Toppino, FKAA Board of Directors

George Neugent, Monroe County Commissioner
David Rice, Monroe County Commissioner
Danny Kolhage, Monroe County Commissioner
Heather Carruthers, Monroe County Commissioner
Sylvia Murphy, Monroe County Commissioner
Roman Gastesi, Monroe County Administrator



December 30, 2016

Ms. Annette L. Vietti-Cook
United States Nuclear Regulatory Commission
Washington, D.C. 20555-0001
Submitted via: NRC Electronic Information Exchange

Re: Combined License (COL) for FPL Turkey Point Units 6 & 7

Dear Ms. Vietti-Cook:

Florida Power and Light (FPL) has filed an application with the Nuclear Regulatory Commission seeking approval of a combined license (COL) to construct and operate two additional units (Units 6 & 7) at the Turkey Point site in Miami-Dade County. The COL is valid for 40 years with the option of a 20-year renewal. Miami-Dade County has reviewed the application submitted by FPL and offers the following comment.

The Turkey Point site is located adjacent to the Biscayne Bay shoreline, approximately 8 miles west of the Elliott Key Barrier Island. The location of Units 6 & 7 along the Biscayne Bay shoreline makes consideration of well-founded sea level rise data critical to assessing safety vulnerabilities at the site. As such, Miami-Dade County urges the Nuclear Regulatory Commission to consider sea level rise projections published by federal agencies when modeling safety vulnerabilities related to Units 6 & 7 based on the following:

- The application states that the finished grade elevation for Units 6 & 7 where safety-related facilities would be located is at 25.5 feet NAVD88 and the elevation of floor entrances and openings of all safety-related structures is at 26 feet NAVD88. The plant site is protected by a 21.5-foot high retaining wall.
- Based on modeling, the application states that the combined 'Probable Maximum Storm Surge' still water level (21.1 feet NAVD88) and wave run-up results in a maximum water level due to a 'Probable Maximum Hurricane' at Units 6 & 7 of 24.8 feet NAVD88, approximately one foot below safety-related structures. This analysis considers 1 foot of sea level rise based on historical tide gage measurements taken from the Miami Beach tidal gage station (no longer in operation) from 1931 to 1981.
- The "*Global Sea Level Rise Scenarios for the United States National Climate Assessment*" published by NOAA provides four estimates of global SLR by 2100 that reflect different degrees of ocean warming and ice sheet loss. The scenarios range from the "Lowest" which estimates 0.7 feet of sea level rise by 2100 to the "Highest" which estimates 6.6 feet of sea level rise by 2100. The report states that "the Highest Scenario should be considered in situations where there is little tolerance for risk (e.g. new infrastructure with a long anticipated life cycle such as a power plant)."¹
- It should be further noted that Miami-Dade County Zoning Resolution No. Z-56-07 (Condition No. 21) requires FPL to consider sea level rise projected by the federal government as well as higher water levels that are anticipated as a result of state and federal restoration efforts when designing project features.

- In addition, Miami-Dade County joined with Broward, Monroe and Palm Beach Counties to create the Southeast Florida Regional Climate Change Compact ("Compact") in 2010. Recognizing the vulnerability of the Southeast Florida region to the impacts of climate change, the counties resolved to work collaboratively on mitigation and adaptation strategies. The Compact has developed a Unified Sea Level Rise Projection, based on federal sea level rise projections.ⁱⁱ The report recommends that high risk facilities such as nuclear power plants should be evaluated using the NOAA "High" projections. Through agreement with the South Florida Regional Planning Council, FPL has agreed to consider Compact data and reports for its planning purposes as Units 6 & 7 progress toward final approval, construction and operation.

Thank you for your attention to this matter. If you need additional information, please do not hesitate to contact me at (305) 375-3076.

Sincerely,



Jack Osterholt
Deputy Mayor/Director
Department of Regulatory and Economic Resources

JB:KB

ⁱ Paris, A., P. Bromirski, V. Burkett, D. Cayan, M. Culver, J. Hall, R. Horton, K. Knutti, R. Moss, J. Obeysekera, A. Sallenger, and J. Weiss, 2012: Global Sea Level Rise Scenarios for the United States National Climate Assessment. NOAA Tech Memo OAR CPO-1. 37 pp., National Oceanic and Atmospheric Administration, Silver Spring, MD.

ⁱⁱ <http://www.southeastfloridaclimatcompact.org/wp-content/uploads/2015/10/2015-Compact-United-Sea-Level-Rise-Projection.pdf>

00065950-1

**UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
BEFORE THE COMMISSION**

In the Matter of)	
)	Docket Nos. 52-040
Florida Power & Light Co.)	52-041
Turkey Point Units 6 & 7)	
)	January 4, 2017
Combined Construction and License)	
Application)	
_____)	

**THE CITY OF MIAMI’S (“CITY”) STATEMENT OF ISSUES OR QUESTIONS
FOR CONSIDERATION BY THE UNITED STATES NUCLEAR REGULATORY
COMMISSION AT THE EVIDENTIARY HEARING IN THE UNCONTESTED
PORTION OF FPL’S COLA FOR TURKEY POINT UNITS 6 AND 7**

NOW BEFORE THE UNITED STATES NUCLEAR REGULATORY COMMISSION,
through undersigned counsel, comes the CITY OF MIAMI (“City”), pursuant to 10 C.F.R.
Section 2.315, hereby submits the City of Miami’s Statement of Issues or Questions for
consideration by the United States (“U.S.”) Nuclear Regulatory Commission (“NRC”) at the
evidentiary hearing in the uncontested portion of Florida Power and Light Company’s (“FPL”)
Combined License Application (“COLA”) for Turkey Point Units 6 and 7.

Background

On June 30, 2009, FPL filed a Combined License Application under 10 C.F.R. Part 52,
for Turkey Point Units 6 and 7 in Miami-Dade County, Florida. The NRC docketed the case on
September 4, 2009. The City was granted the ability to participate in the proceedings involving
FPL’s COLA as an Interested Local Government Body pursuant to 10 C.F.R. Section 2.315 on
June 10, 2015. The NRC and U.S. Army Corps of Engineers made available the final
Environmental Impact Statement (“EIS”) on October 28, 2016 and published a notice of

availability of the final EIS on November 2, 2016 in the Federal Register. The Final Safety Evaluation Report (“FSER”) was made available on November 10, 2016. The NRC provided the City a Notice of Hearing on December 8, 2016. The deadline for the City, an Interested Local Government Body, to submit a statement of any issues or questions that the City wishes the NRC to consider is as a part of the uncontested portion of FPL’s COLA for Turkey Point Units 6 and 7 is January 4, 2017.

Statement of Issues and Questions

The City of Miami submits the following statement of issues and questions for consideration by the NRC at the evidentiary hearing in the uncontested portion of FPL’s COLA for Turkey Point Units 6 and 7. The City’s “Exhibit A” contains additional information as it relates to the City’s statement of issues and questions.

Issue No. 1

The City contends that FPL’s COLA does not sufficiently consider storm surge or sea level rise. Specifically, the City contends that the COLA does not sufficiently consider storm surge or sea level rise during a critical event that exceeds plausible or predicted forecasts and parameters considered by FPL and NRC Staff. Recent natural events have shown that they are exceeding plausible and predicted forecasts and as such should be considered FPL’s COLA. Additionally, FPL’s COLA does not consider the upper end of the National Oceanic and Atmospheric Administration’s (NOAA) forecasts.

The City respectfully requests that the NRC require that FPL develop an Emergency Action Plan, that is continually revised and updated, based on a critical event that exceeds the level of the design basis as described in the Section III. A. Storm Surge and Sea Level Rise of

the Policy Issue Document dated December 2, 2016 (SECY-16-0136). The City further requests that the NRC require that FPL update its analysis of sea level rise and storm surge using the upper end of NOAA's plausible and predicted forecasts.

Issue No. 2

The City contends that construction costs for the construction of AP 1000 units at Vogtle 3 & 4 and V.C. Summer 2 & 3 has grown significantly due to schedule delays and cost overruns due to contractor failures to meet delivery dates, contractor staffing issues, constructability issues within the contractor supply chain, and design and fabrication issues. The current total estimate for Vogtle 3 & 4 units is approximately \$21 Billion. It is reasonable to conclude that FPL's costs of construction will be on the high end of its estimated construction costs, approximately \$20 Billion. FPL in the Nuclear Cost Recovery docket before the Florida Public Service Commission has already testified that "through 2017, FPL estimates it will have spent approximately 1.5% of the high end of the estimated project cost range (\$20.0 billion)."¹

The City respectfully requests that the NRC require that FPL address its financial ability to absorb current cost overruns, potential additional overruns should they evolve during construction, and maintain financial integrity during the construction of a project that has the potential of exceeding \$20 Billion in construction costs.

¹ Testimony of Steven D. Scroggs, April 27, 2016, Document No. 02544-16, Docket No. 160009-EI, at 9 (*available at* <http://www.psc.state.fl.us/library/filings/16/02544-16/02544-16.pdf>).

Conclusion

The City of Miami respectfully requests that the United States Nuclear Regulatory Commission consider the aforementioned issues identified by the City in the evidentiary hearing in the uncontested portion of FPL's COLA for Turkey Point Units 6 and 7.

Respectfully Submitted,

Signed electronically by: /s/ Xavier E. Albán
Xavier E. Albán
(Fla. Bar No. 113224)
Assistant City Attorney,
The City of Miami
444 SW 2nd Avenue
Miami, FL 33130
(305) 416-1800
(305) 416-1801 (facsimile)
xealban@miamigov.com

Certificate of Service

I hereby certify that on January 4, 2017, I electronically filed the foregoing statement with the electronic filing system of the U.S. Nuclear Regulatory Commission and that persons and parties of record were electronically served.

In the Matter of)	
)	Docket Nos. 52-040
Florida Power & Light Co.)	52-041
Turkey Point Units 6 & 7)	
)	
Combined Construction and License)	
Application)	
_____)	

AFFIDAVIT OF MARK W. CRISP, P.E.

I, Mark W. Crisp, being duly sworn, state the following:

1. I am over the age of 18 and have personal knowledge of the facts and statements herein.

EDUCATION, QUALIFICATIONS, AND EXPERIENCE

2. I am a Managing Consultant and the Chief Operating Officer for Global Energy & Water Consulting, LLC. My address is 4539 Woodvalley Drive, Suite 100, Acworth, Georgia 30101. I have prepared the following affidavit on behalf of the City of Miami.

3. I hold Civil and Electrical Engineering degrees from the Georgia Institute of Technology. I am a Licensed Professional Engineer in the States of Florida, Georgia, Arkansas, and South Carolina. My professional career has spanned over 35 years, included 20 years employment with major electric utilities, The Southern Company and Mid-South Utilities (now Entergy), and over 15 years as a consultant to the electric utility industry and regulatory bodies both domestically and internationally.

4. During my employment with Southern Company and Entergy I provided engineering design and operations expertise to the companies' fleet of nuclear, coal-fired, gas-fired, hydropower, and renewable generating resources.

5. My consulting experience has included similar engagements with the addition of expert witness testimony on regulatory compliance requirements before the Nuclear Regulatory Commission, the Federal Energy Regulatory Commission, many State Utilities Commissions, the United States Congress, and Federal courts.
6. My international work includes engagements in South America, Central America, Sub-Saharan Africa, West Africa, and portions of the old Communist Bloc Countries.
7. My experience as it relates directly to aspects relevant to Docket Nos. 52-040 and 52-041, specifically AP 1000 technology, includes substantial roles providing consulting expertise to the South Carolina Office of Regulatory Staff during the review and approval of the V. C. Summer Nuclear additions of Units 2 & 3, both AP 1000 technologies. I have also been engaged by joint owners to provide opinions on technical and budget issues of the addition of the Vogtle Units 3 & 4, also AP 1000 technology.

STATEMENT

8. My affidavit in this proceeding is in support of the City of Miami's Statement of Issues and Questions for the Uncontested Hearing for Issuance of the Combined Operating License ("COL") for Turkey Point Units 6 and 7. My statement is based on my review of the Final Environmental Impact Statement ("FEIS") and the Nuclear Regulatory Commissions ("NRC") Final Safety Evaluation Report ("FSER") issued in support of Florida Power & Light's ("FP&L") Application for a COL for the Turkey Point Units 6 and 7, as well as additional publicly available documents.

9. There have been a series of milestones established and met by FP&L for the NRC's review and issuance of a COL for the Turkey Points Units 6 & 7, including FP&L's Application, the NRC's review of the Application, the NRC's issuance of the FSER on November 14, 2016, the NRC's issuance of the FEIS on October 28, 2016, and the NRC's Staff Statement in Support of the Uncontested Hearing for Issuance of Combined Licenses for Turkey Point Units 6 & 7, dated December 2, 2016.
10. In addition to the above agency reviews, the Advisory Committee on Reactor Safeguards ("ACRS") has completed their review of the FP&L COL Application and the NRC's Staff advanced safety evaluation ("ASE") and provided the following conclusion, "There is reasonable assurances that Turkey Point Units 6 & 7 can be built and operated without undue risk to the health and safety of the public. The FP&L COLA for these units should be approved, dated September 16, 2016."
11. The ACRS is an independent committee, reporting directly to the NRC's Chairman, made up of distinguished individuals with expertise in nuclear power operations, construction, design, as well as risk assessment, severe accident phenomena, and other areas of engineering associated with nuclear power deployment.
12. The NRC Staff and the ACRS have established there is no reason to block the deployment of the two AP 1000 Units to be known as Units 6 & 7 at Turkey Point.
13. While the NRC Staff and the ACRS have provided their initial opinion supporting the deployment of the AP 1000 units, they did identify several areas of concern that are critical to the safety of the plant and surrounding populations in the event of a "beyond

design basis” excursion or failure. These have been addressed and appear to be resolved. However, there are concerns that the City of Miami would like to submit for further consideration prior to the final approval and issuance of the COLA. Each of these issues should be considered by the NRC in the Evidentiary Uncontested Hearing scheduled for February 9, 2017.

Issue No. 1

14. The City of Miami presents its first uncontested issue as the Storm Surge and Sea Level Rise possibility (probability) due to hurricanes and other atmospheric anomalies and the potential for sea level rise as they relate to the safe operations of the planned Units 6 & 7. While considerable technical study and analysis has been performed, much of the analysis depended on statistical approaches and forecasting of future responses based on back-casted actual data. Significant effort was used to provide a conservative response matrix of plausible sea level and storm surge elevations. However, one additional step should be incorporated, as a requirement, prior to or in conjunction with the issuance of the COL. This would include a detailed analysis and report including a risk assessment and detailed mitigation plan should an event occur that exceeds that identified by NRC Staff and FP&L. The NRC should require FP&L develop a plan of action as to how they would respond if this event should occur.

15. The NRC should require that FP&L develop an Emergency Action Plan (“EAP”) based on a critical event that exceeds the level of the design basis as described in the Section III. A. Storm Surge and Sea Level Ride of the Policy Issue Document dated December 2, 2016 (SECY-16-0136). This EAP would serve as guidance for Corporate Management,

Plant Operating Personnel, and most importantly, the general public and First Responders as to the procedures, methods, directions, and timing of emergency responses to a beyond design basis event. This document and its procedures would need to be continually updated to account for changes in climatology, physical horizon, demographics, and community needs.

16. There have been numerous examples in the past 10 years of major failures including loss of life, significant financial losses, and socio-economic losses due to beyond design basis events and/or changed circumstances that have occurred with outcomes far worse than anticipated because there was not a critical approach taken to emergency response and continuing improvements. One only needs to look to the impact of Hurricane Katrina in New Orleans, the earthquake and tsunami at the Fukushima-Daiichi Nuclear Plant in Japan, and Hurricane Sandy in New England as recent examples of events that were beyond the “design basis” resulting in significant losses. While the responses were heroic, significant attention to the possibilities of beyond design basis events along with actual testing of response actions could have produced better results. Recent events and experiences with climatology, meteorology, and human events, there will be an event, or combination of events, in our future that exceeds all controlling parameters that are based off past actual data.

Issue No. 2

17. The COL Application (“COLA”) includes a Chapter titled “General and Financial Information” that describes, in part, the financial qualifications of FP&L to construct the new nuclear units at Turkey Point (See Section 1.3 Financial Qualifications in Rev. 8 of the COLA). The ability to financially support the operations of the new units is not

covered by the COLA and it is specifically excluded from review and consideration by 10 CFR 50.33(f) as noted by FP&L that the “estimates of operating costs for the first five years of operations are not required to be submitted and FPL is required only to demonstrate financial qualification to carry out construction activities.”


18. This is a systemic problem in that successful operation of the new nuclear units produces the revenue stream that supports the financial ability of FP&L to construct these units. Without successful operations the debt incurred by FP&L will be of such a magnitude as to at best render FP&L in financial distress that Wall Street and the investors will immediately abandon.

19. In light of this significant financial issue the construction costs for these units becomes critically important. The question begs what will the final costs be considering the schedule delays and cost overruns at the sister units of Vogtle 3 & 4 and V. C. Summer 2 & 3? The second and more critical question becomes can FP&L burden itself with the financial costs of these units should similar schedule delays and cost overruns be experienced at Turkey Point? There is certainly little experience in the nuclear construction industry that would point towards an improved construction environment for Turkey Point Units 6 & 7. The original total budget for Vogtle was approximately \$14 Billion. The current total estimate is approximately \$21 Billion with schedule delays of approximately 39 months (Docket 29849 – Georgia Public Service Commission). The current cost estimate of the Turkey Point units ranges from a low of \$13.7 Billion to a high of \$20 Billion, inclusive of financing costs. It is reasonably within logic to assume the cost of construction for the Turkey Point units will be close to the current costs of the

Vogtle units (approximately \$21 Billion) since the Turkey Point units and the Vogtle units are using the same design. These significant cost overruns are due to contractor failure to meet delivery dates, contractor staffing issues, constructability issues within the contractor supply chain, and design and fabrication issues. A critical issue that must be addressed is the financial ability of FP&L to absorb such cost overruns and potentially additional overruns should they evolve during construction.

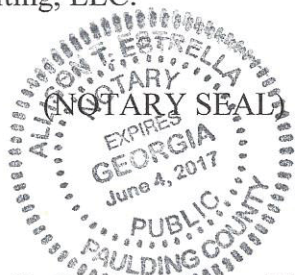
20. The next important issue that should be considered is that FP&L must apply annually to the Florida Public Service Commission in the continuing Nuclear Cost Recovery docket in a formal rate case to recover costs. Assuming that FP&L is unable to recover the cost of construction due to, among other potential reasons, cost overruns in its annual petitions for cost recovery to the Florida Public Service Commission, how will FP&L manage the write off and maintain financial integrity for the construction of nuclear reactors that have the potential of exceeding \$20 billion?

FURTHER AFFIANT SAYETH NAUGHT.


Mark W. Crisp

STATE OF Georgia
COUNTY OF Cobb

Sworn to (or affirmed) and subscribed before me this 4th day of January, 2017, by
MARK W. CRISP, Managing Consultant and Chief Operating Officer, Global Energy & Water
Consulting, LLC.




(Signature of Notary Public-State of Georgia)

Allison T Estrella
(Name of Notary Typed, Printed, or Stamped)

Personally Known OR Produced Identification ✓
Type of Identification Produced Georgia Drivers License



Office of the Mayor

4 January 2017

Annette L. Vietti-Cook , Secretary
United States Nuclear Regulatory Commission
Washington DC 20555-0001

RE: DOCKETS 52-040 and 52-041
Issuance of Combined Licenses for FPL's Turkey Point Units 6 and 7

Dear Secretary Vietti-Cook:

The City of South Miami hereby submits evidence for the Turkey Point 6&7 Combined license application hearing to be held on Feb 9, 2017, Docket Nos. 52-040 & 52-041.

Sincerely,

A handwritten signature in black ink that reads "Philip K. Stoddard". The signature is written in a cursive, flowing style.

Philip K. Stoddard, Ph.D.
Mayor

U. S. NUCLEAR REGULATORY COMMISSION
BEFORE THE SECRETARY

IN THE MATTER OF

FLORIDA POWER AND LIGHT (Docket Nos. 52-040
& 52-041

TURKEY POINT

REACTORS 6 & 7

JANUARY 4, 2017

The City of South Miami, Florida (South Miami) hereby submits evidence for the FPL COL (Docket Nos. 52-040 & 52-041} application uncontested evidentiary hearing to be held on Feb 9, 2017. The EIS has included extensive review of the required factors.

Nonetheless we identify uncontested concerns in six categories:

- 1) Financial Concerns.
- 2) Factual errors.
- 3) Unaddressed interactions between known factors.
- 4) Partial omissions.
- 5) Insufficient caution – sea level rise.
- 6) Insufficient caution – underground radioactive waste disposal.

1. FINANCIAL CONCERNS.

FINANCIAL INFORMATION REVEALED IN THE PAST TWO WEEKS INDICATES THAT TOSHIBA IS NOT FINANCIALLY VIABLE AND IS NOT FULFILLING CONTRACTS IN A TIMELY MANNER DISQUALIFYING TOSHIBA FROM THIS PROJECT

Appendix C to Part 50—A Guide for the Financial Data and Related Information Required to Establish Financial Qualifications for Construction Permits and Combined Licenses states:

“...the applicant should include information other than that specified, if the information is pertinent to establishing the applicant’s financial ability to carry out the activities for which the permit or license is sought.”

“The Commission reserves the right, however, to require additional financial information at the construction permit stage...”

In *The New York Times*, December 27, 2016, we read:

Toshiba Could Lose Billions From Troubled U.S. Nuclear Power Deal

*In the United States, Westinghouse has been working with CB&I Stone & Webster on two projects to expand existing nuclear power stations by building new reactors. The projects, at the V.C. Summer station in South Carolina and the Alvin W. Vogtle plant in Georgia, are **several years behind schedule and billions of dollars over budget.***

In *Japan Today*, January 1, 2017, we read:

Battered Toshiba out of easy options to plug nuclear hole

...The timely provision of safety and reliability upgrades depends on a financially stable manufacturer. The ability of Toshiba-Westinghouse to remain as a provider of nuclear reactors and continued product support has come into question.

*In the past year, Toshiba-Westinghouse the manufacturer of FPL’s two proposed AP1000 nuclear reactors, has experienced serious financial problems. Toshiba grossly overpaid for Westinghouse. In 2015, Toshiba was fined for accounting fraud wherein they **overreported their nuclear division profits by \$1.3 billion.** Toshiba grossly overpaid for CB&I Stone & Webster, which makes large cast*

elements for their nuclear plants. The NRC is very familiar with the problems relating to CB&I's performance at the VC Summer and Vogtle construction sites. The massive writedown for Toshiba from this new financial blunder sent the stock into such a sharp decline, **the Tokyo Stock exchange halted Toshiba's trading.** Toshiba is hurting for cash and hemorrhaging. **Toshiba cannot raise cash by issuing stock shares because of restrictions imposed by the Tokyo stock exchange after last year's accounting scandal. Analysts are noting that Toshiba has few remaining assets to sell to raise cash.** [emphasis added]
<https://www.japantoday.com/category/business/view/battered-toshiba-out-of-easy-options-to-plug-nuclear-hole>

In *The Register*, 3 Jan 2017, we read:

Toshiba is facing such horrific cost-overruns with its US nuclear power plant projects it may have to sell assets, such as its flash memory business, to cover them.

Its US subsidiary, Westinghouse Electric, is building four AP1000 power-generating reactors in the United States and costs are getting out of hand, with multi-year construction delays and billions of dollars involved. As part of its attempt to deal with this, Westinghouse Electric agreed to buy CB&I Stone & Webster, a nuclear construction and services business, and the transaction closed in December 2015 with a goodwill component having an estimated cost of \$87m.

However the estimated cost is now several billion dollars, an astronomical difference. The problem is, according to a Toshiba statement (pdf), the AP1000 contracts.

Westinghouse has found that the cost to complete the US projects will far surpass the original estimates, mainly due to increases in key project parameters, resulting in far lower asset value than originally determined, leading to a possible recognition of goodwill far exceeding the original December 2015 estimate of US\$87 billion.

http://www.theregister.co.uk/2017/01/03/toshiba_facing_nuke_power_goodwill_cost_meltdown/



Figure 1. The steady decline in Toshiba's stock value in the middle of the chart resulted from Toshiba's improper statement of profits in their nuclear division, while the sharp decline at the right edge of the chart resulted from the Toshiba's recent financial problems with subsidiary CB&I Stone & Webster.

CONCLUSION

Given the seriousness of the proceeding information, and as required and provided for in the citations above, South Miami holds that Florida Power and Light should provide this information to the Nuclear Regulatory Commission in a timely manner as required by regulations and that it should be considered as an extraordinary circumstance which threatens the viability of the entire project and that appropriate hearings and investigations be initiated.

2. FACTUAL ERRORS. Prevailing winds.

NUREG-2176, vol. 1, EIS 5-69 states:

“Chemicals associated with cooling-tower drift are also unlikely to affect Biscayne Bay, Card Sound, Biscayne National Park or Everglades National Park because expected deposition patterns are **generally to the southwest over the IWF**, and any chemicals associated with cooling-tower deposition would likely be rapidly diluted and undetectable. Thus, the potential effects of reclaimed water use on the aquatic species described in Section 2.4.2 as living in Biscayne Bay, Card Sound, and other surface-water habitats near the Turkey Point site are expected to be minimal.”

“The highest depositional rates for chemicals and constituents associated with the drift were predicted for the IWF cooling canals; **lower depositional rates were expected in surface-water habitats near the site (e.g., Western Areas/Model Lands)** and nearshore areas of Biscayne Bay.” [emphasis added]

These statements in the Final EIS for TPN 6&7 not only lack documentation for the dominant wind directions, they are factually incorrect. The EIS indicates that winds blow “*generally to the southwest*”, which in meteorological parlance would be northeast winds. If that were true, then the subsequent statement would also be true, that we should expect “**lower depositional rates... in surface-water habitats near the site (e.g., Western Areas/Model Lands)**”. In Southeast Florida, winds blowing toward the SW (i.e., from the NE) are uncommon, as indicated in Figure 2 below. NE winds constitute only 9% of the yearly wind direction total, as indicated from wind data collected at nearby airports over decades.

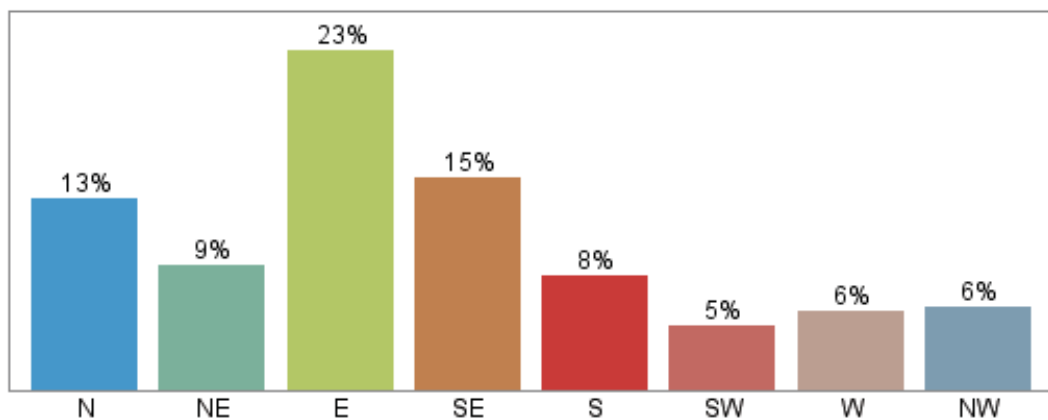


Figure 2. The fraction of time the wind blows from the various directions over the entire year at the Kendall-Tamiami Executive Airport (Miami, Florida, United States) weather station over the course of an “average” year. The figure is based on 28 years of historical records from 1984 to 2012. Values do not sum to 100% because the wind direction is undefined when the wind speed is zero.

<https://weatherspark.com/averages/31775/Miami-Florida-United-States>

Similar data are available for Miami International Airport and show similar distribution of wind directions:

https://www.windfinder.com/windstatistics/miami_airport

Thus, actual data show that dominant winds in the region are toward the west and northwest (from the East and Southeast), which would relocate cooling tower chemicals offsite and deposit them in the Southeastern Coastal Everglades habitat west of Turkey Point.

As a consequence of factual misinformation incorporated into the EIS, careful and accurate consideration of the consequence of chloride and other chemicals misted across the coastal Everglades has been left out of the EIS. Effects of chemical deposition on freshwater wetland habitat must be addressed because of the acknowledged importance of the Coastal Everglades restoration. Until then, the EIS document is both inaccurate and incomplete.

3. INTERACTION EFFECTS

The COL application and evaluation documents consider myriad possible factors that could potentially compromise health, safety, and environmental integrity. Missing from the evaluation are some critical and likely interactions between effects that were considered singly, but not together. I briefly detail a selection of these.

a. Shelter-in-place x Power outage x Subtropical climate.

Orders for residents to “shelter-in-place” is part of the procedure that will be used in the event of a significant atmospheric radiation incident, e.g. NUREG/CR-7002. No consideration has been made of the temperatures that people would encounter in their houses during a radiological emergency. First we must assume that a radiological emergency is most likely after a hurricane with storm surge that would have shut down the entire Turkey Point generating station. As a result, people would have no electricity for air-conditioning. Much, or even most of Miami-Dade County is hot, and houses get very hot when the windows are closed and the A/C is turned off. Yet, the emergency plans do not consider how long people could safely stay in a closed house with no electric cooling. Probably not long. As the emergency plan includes practices that would be hazardous to public health during hot weather, it must be considered inadequate.

b. Emergency evacuation x Protection from radiation poisoning.

Failure to distribute potassium iodide (KI) in Fukushima Japan resulted in thyroid damage for most of the young people in the population. Despite the hard lesson learned in Fukushima, FPL has not opted to pre-distribute KI in Miami-Dade County. Neither does the Miami-Dade County government have a realistic plan to distribute KI to the vulnerable population in the event of an atmospheric radiation release of radioactive iodine isotopes. An unstated amount of KI is to be distributed at the Tamiami Fair Grounds, in Miami, 27 miles north of Homestead, FL, but the Fair Grounds site is not large enough to accommodate the number of people who would need to receive KI prior to atmospheric exposure. No plans exist to get KI to people who shelter-in-place. Accordingly, the safety plan cannot be considered complete.

c. Emergency evacuation x Surface flooding.

The U.S. Department of Transportation has determined that sections of local highways can be rendered impassible by storm flooding, the magnitude of which will be enhanced by sea level rise. Of particular concern for the COL application, every major road listed in the emergency evacuation plan for TPN 6&7 (*Turkey Point Turkey Point Nuclear Power Plant Evacuation Time Estimate report*), is among the roads that USDOT lists as being compromised by future flooding (shown in Figure 3 below), specifically Florida’s Turnpike, US-1, and Krome Avenue. From the ETE report (9-2):

The ETE simulations discussed in Section 7 indicate that the evacuation routes are oversaturated and experience pronounced traffic congestion during evacuation due to the limited capacity of the roadways and the large volume of evacuating traffic. The Florida Turnpike, US Highway 1 and Krome Ave are the most heavily used evacuation routes.

The likelihood of evacuation is greatest following a hurricane, which is, not coincidentally the most likely driver of flooding and impassible road condition. Again, the problem identified is an interaction between known factors, each of which was considered separately in the COL application, but not together. An emergency evacuation time estimate cannot be considered complete if it does not account for likely complications resulting from the interaction between surface transportation and local flooding.

While building pads are proposed for elevation, access roads and roads on FPL property at Turkey Point are closer to sea level. Low elevation presents evacuation and access barriers in emergency situations when roads are inundated due to storm surge, the frequency and extent of which will be enhanced by sea level rise. We have seen no evaluation of the hazards posed by road flooding for emergency servicing of equipment or decommissioning.

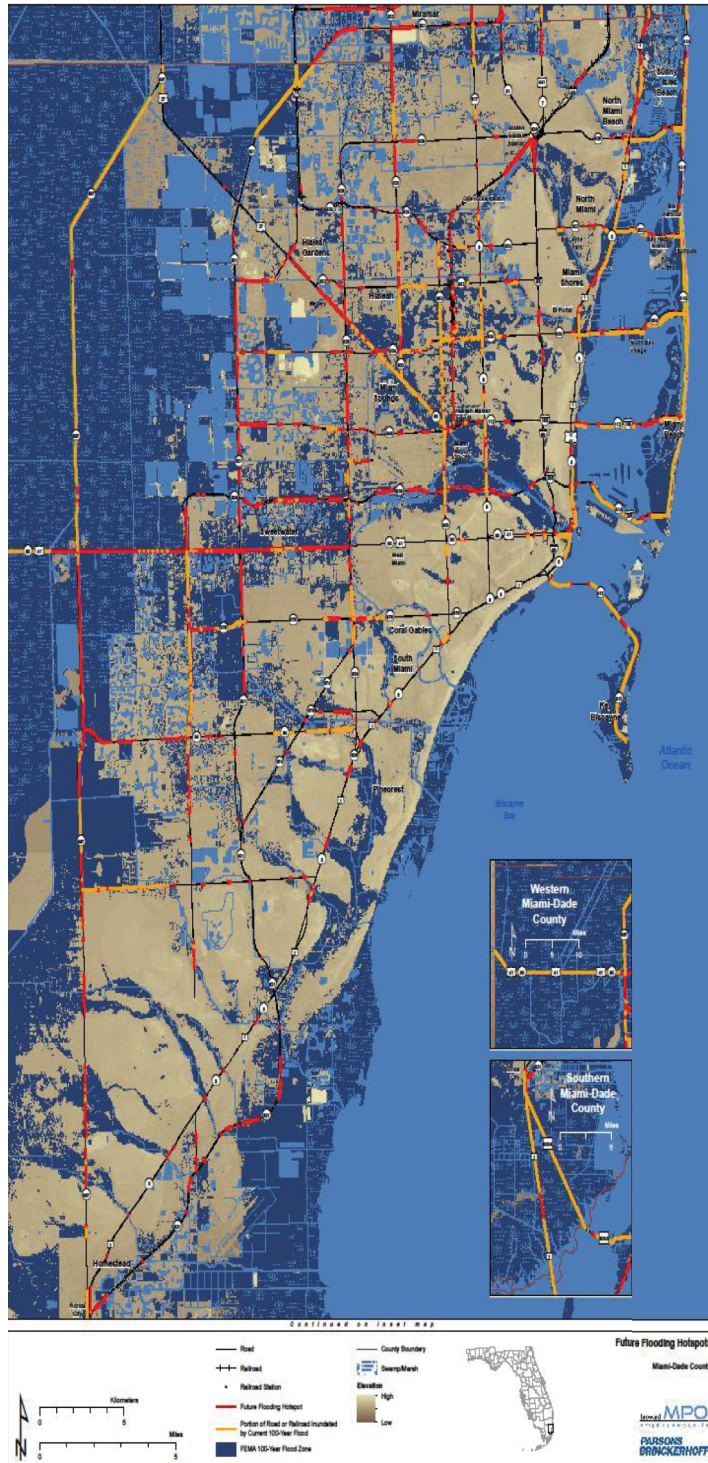


Figure 3. Future flooding of major roadways in Miami-Dade County. *South Florida Climate Change Vulnerability Assessment and Adaptation Pilot Project*
https://www.fhwa.dot.gov/environment/climate_change/adaptation/resilience_pilots/2013-2015_pilots/south_florida/final_report/south_florida_final.pdf

4. PARTIAL OMISSIONS – Transmission Lines

Here we do not contest the conclusion of the analysis, but rather the omission of written consideration. NUREG-2176, vol. 1, EIS (e.g., 5-81) addresses economics and aesthetics of transmission lines to be built for distribution of power generated by TPN 6&7. The document omits aesthetic and economic impacts of the Eastern Preferred Corridor on the developed areas of Miami-Dade County. The Final EIS analysis avoids mention of the Eastern Preferred Transmission Corridor along US-1, passing through the Village of Palmetto Bay, the Village of Pinecrest, the City of South Miami, the City of Coral Gables, and the City of Miami. The proposed above-ground transmission lines would have significant visual impact, affecting the local economy of some of the highest economic value areas in the region. This proposed corridor is under litigation, however its omission from categories considered in the EIS renders that document incomplete. Conclusions concerning environmental protection based on incomplete information are potentially inaccurate and cannot be considered complete.

5. INSUFFICIENT CAUTION – Sea Level Rise

On August 1, 2016, the White House Council on Environmental Quality (CEQ) issued to heads of all Federal Departments and Agencies final guidance on greenhouse gasses (GHGs). The CEQ guidance includes these directives on how agency decisions subject to NEPA must address sea level rise (SLR) in the context of climate change:

"As discussed in this guidance, when addressing climate change agencies should **consider... [t]he effects of climate change on a proposed action** and its environmental impacts."

"This guidance is applicable to all Federal actions subject to NEPA, including site specific actions, certain funding of site-specific projects, rulemaking actions, permitting decisions, and land and resource management decisions."

"Climate change effects on the environment and on the proposed project should be considered in the analysis of a project considered vulnerable to the effects of climate change such as **increasing sea level....**"

"In addition, the particular impacts of climate change on vulnerable communities may be considered in the design of the action or the selection among alternatives to assess the impact, and potential for disproportionate impacts, on those communities. For example, chemical **facilities located near the coastline could have increased risk** of spills or leakages **due to sea level rise or increased storm surges**, putting local communities and environmental resources at greater risk. Increased resilience could minimize such potential future effects. Finally, considering climate change preparedness and resilience can help ensure that agencies... minimize the risk of expending additional time and funds in the future."
[bold added]

https://www.whitehouse.gov/sites/whitehouse.gov/files/documents/nepa_final_ghg_guidance.pdf

In 2015, the Southeast Florida Regional Climate Change Compact issued the report Unified Sea Level Rise Projection. The report included the following statements relevant to nuclear power plant design and safety:

"This regional projection is offered to ensure that all major infrastructure projects throughout the Southeast Florida region have the same basis for design and construction relative to future sea level."

"Due of the community's critical reliance on major infrastructure, existing and proposed high risk infrastructure should be evaluated using the upper curve of the projection, the orange curve (NOAA High). Examples of high risk critical infrastructure include **nuclear power plants**, wastewater treatment facilities, levees or impoundments, bridges along major evacuation routes, airports, seaports, railroads, and major highways."

"**The upper curve of the [NOAA] projection should be utilized for planning of high risk projects to be constructed after 2060, or projects which are not easily replaceable or removable, have a long design life (more than 50 years),**

or are critically interdependent with other infrastructure or services.... [L]ong term, by 2100, sea level is projected to rise 31 to 81 inches above 1992 mean sea level.” [bold added]

<http://www.southeastfloridaclimatecompact.org/wp-content/uploads/2015/10/2015-Compact-Unified-Sea-Level-Rise-Projection.pdf>

This upper-end NOAA projection does not include further destabilization of ice in Greenland and Antarctica, which new data suggest may be starting.

Data collected by scientists at the Rosenstiel School of Marine and Atmospheric Sciences over the last 20 years show that in Biscayne Bay, the rate of SLR in Miami since 1996 has averaged 0.22”. Based on recent trends, Dr. Brian McNoldy revises that estimate to 0.36” per year: <http://www.rsmas.miami.edu/blog/2014/10/03/sea-level-rise-in-miami/>

Notwithstanding these projections by NOAA and the Southeast Regional Climate Compact, and in contrast to recent data collected by oceanographers in Biscayne Bay, FPL's COLA for TPN 6&7 **projects 8 inches of sea level rise by the year 2100**. FPL rounded that figure up to **one foot** for the purposes of planning storm surge resiliency.

FPL bases this projection on estimates provided by Bechtel Corporation. On August 19, 2016, Dr. Mustafa Samad from Bechtel Corporation addressed the ACRS on the SLR projections included in the TPN 6&7 COL Application. Dr. Samad testified that he had projected SLR to the year 2100 based on a linear extrapolation of mean tide data from two tide stations over the periods 1931-1981 and 1913-2010. From these retrospective data Dr. Samad projected a mere 8 inches of SLR between 2010 and 2100, which he stated would provide a 1.2 foot margin of safety for storm surge and spring tides, as detailed in RAI 245-3 and RAI 245-5.

The conflicts between FPL's projections, the current pace of SLR, and the projected accelerating rate of SLR in NOAA's guidance are stark, disturbing, and not adherent to the recent guidance from the White House. Based on the recent trend of local SLR documented by the Dr. McNoldy, without including the acceleration predicted by NOAA, Turkey Point will exceed FPL's projected 8” of SRL 20 years from now. FPL's rounded one foot of rise would be met by 2046, 50 years ahead of FPL's schedule.

In appendix E of the EIS, the NRC writes:

The review team is aware that the sea-level rise of 1–4 ft by 2100 is not bounding. It is not implausible that sea level rise significantly in excess of 4 ft could occur by 2100. Such extreme sea-level rises would inundate much of South Florida making it uninhabitable. However, NEPA requires consideration of likely future scenarios not extreme future scenarios. However, the gradual increase in sea level and NRC's safety process protects the public health and safety.

It's somewhat shocking that the NRC staff flatly refuses to adhere to the regional guidance for protection of critical infrastructure, calling it “extreme” when considering

the siting of a nuclear power plant filled with enriched nuclear fuel, and onsite storage of spent nuclear fuel.

Further, the suggested “*gradual increase in sea level*” produces a non-linear storm surge risk, because Elliott Key, which currently shelters Turkey Point, will become inundated and provide less protection.

The NRC needs to insure that TPN 6&7 is constructed to withstand NOAA’s upper projection of 2 meters of SLR as per the current guidance by the White House, SLR projections by NOAA, and recommendations by the Southeast Florida Regional Climate Change Compact. Multiple design safety issues at Turkey Point are affected by NOAA’s SLR projections:

a. Storm surge freeboard

The 1.2 feet of projected storm surge freeboard will be rapidly exhausted by actual SRL rates, even conservative ones, and grossly overwhelmed by upper range estimates. FPL needs to design according to the best guidance, specifically, that issued by the Southeast Florida Regional Climate Change Compact, which is adjusted to match the local conditions of Gulfstream (AMOC) modulation of global SLR projections.

b. Storm surge & wave dynamics

FPL’s unrealistically low SLR projections does not take into account foreseeable changes in surge and wave dynamics at 1-2 meters of SLR. Eliot Key currently shields Turkey Point from the fetch off the Atlantic. When Eliot Key is submerged by SLR, storm surge and wave dynamics are also subject to change. No modeling in the COLA accounts for these changes produced by realistic and upper bounded SLR projections.

c. Emergency Access

Will access roads to the TPN facility and the water treatment plant remain accessible during storms and even at normal times? Will these roads be vulnerable to washout from storm surge? No analysis of road access when southeastern Miami-Dade County is under water is provided in the COLA. This analysis needs to be included.

d. Cooling water source persistence

TPN 6&7 are planned to use reclaimed wastewater from the Southern Water Treatment Plant at least 305 days a year. Will the cooling water supply from this remain available when the low-lying regions of SE Miami-Dade County are inundated by SLR? Miami-Dade County has recognized the high likelihood of completely reconstructing the county’s waste water systems in 30 years, yet the COLA accounts for no projected loss of this water supply.

e. Decommissioning access. Long-term nuclear safety will depend on the ultimate decommissioning of the plant. Sea level rise will be accelerating rapidly and roads to the plant will have been compromised. Even one foot of sea level rise turns Turkey Point into an island in Biscayne Bay (Figure 4). What plans are in place for decommissioning when the site is a stranded island without road access? We see no mention of the problem in the planning documents.

Many aspects of the COLA were predicated on a negligible 1-foot of SLR by 2100'. That projection was based on retrospective data from the last century, and not on prospective climate models for the current century. This projection was unrealistic when it was proposed, it has been proven to be wrong by data from the past two decades, and nowhere in the COLA is a consideration of which safety design assumptions are vulnerable to far greater acceleration of the rate of SLR as projected by NOAA. Formal consideration of worst-case SLR projections needs to be included in the application as advised by the White House CEQ and the Southeast Florida Regional Climate Compact. The COLA should include appropriate modeling for those worst-case SLR scenarios and accommodation of those projections in the safety design of TPN 6&7. Until realistic considerations of SLR are included in the application, the application should be considered incomplete from the perspective of long-term reactor safety.

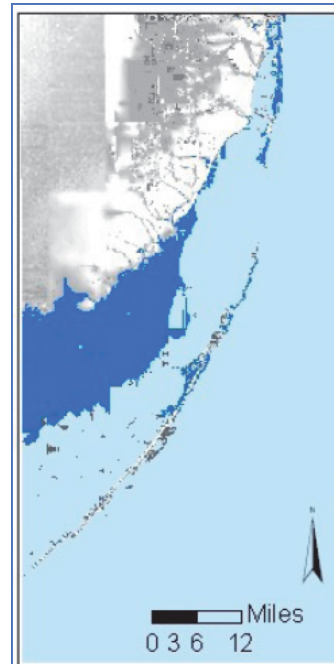


Figure 4. The dark blue area inland of Turkey Point will be inundated by one foot of sea level rise. The existing cooling canals are seen in the center of the map.

6. INSUFFICIENT CAUTION – Radioactive waste injection.

The COLA states:

“...liquid radioactive waste-treatment system would be discharged to the Boulder Zone via the injection wells.” NUREG–2176, 3-32

“Liquid radioactive effluent would be discharged to the deep-injection wells. The discharge would be monitored and administratively controlled to ensure that it meets the requirements of 10 CFR Part 20, Appendix B, Table 2 Column 2 (10 CFR Part 20) (TN283).”

Although the lower confining unit atop the Boulder Zone is believed to be intact and relatively impermeable, rate of lateral flow within the Boulder Zone has not been characterized. Diffusion models have been created based on limited understanding of the confining units and untested assumptions about lateral flow, but nobody really knows whether or where radioactive injectate in the Boulder Zone will migrate or how fast.

Over the past decade, FPL amassed the worst nuclear safety complaint history of any company in the United States (Figure 5). Given the dismal record, prudence would preclude allowing FPL to monitor and administratively control deep well radioactive waste injection into an area where independent measurement and verification is logistically impossible. The recent safety complaint history would suggest that all radioactive waste disposal be conducted in a manner that can be monitored and verified by an independent agency.

We are uncomfortable with the idea of injecting radioactive waste underground, even deep underground, within ten miles of potable water wells. While the confinement *seems* OK, any surprise involving radiation in drinking water is virtually impossible to fix after the fact. Following the debacle in Flint, Michigan, people are very sensitive to issues of possible water contamination. **Alternate plans for liquid radioactive waste disposal should be explored.**

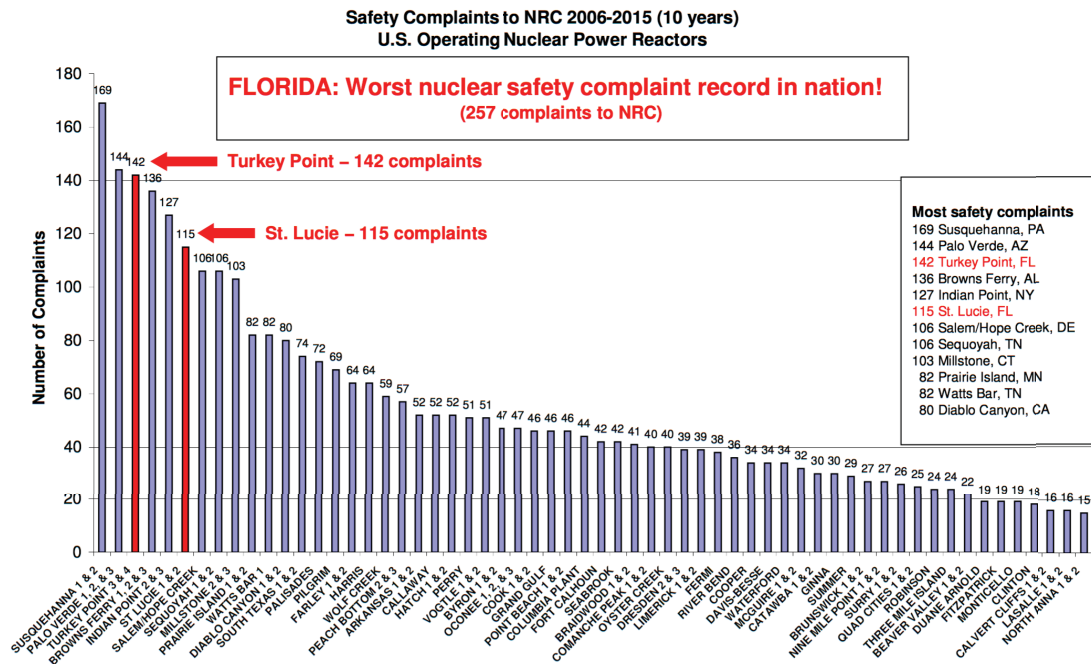


Figure 5. Number of safety complaints at U.S. nuclear power plants over the past decade 2006-2015.

<https://sanonofresafety.files.wordpress.com/2011/11/nrc-allegation-statistics10yearfloridachart2016-10-26.pdf>