FPL's model to help determine how to clean up the plume is flawed.

FPL was mandated by both Miami-Dade County and Florida's Department of Environmental Protection (DEP) to retract the more than 40 years of legacy pollution that has leaked out from Turkey Point's industrial waste boundary via the antiquated cooling canal system (CCS). In order to do this FPL was asked to provide a model of how they would go about halting the plume and eventually retracting it and cleaning it up. According to expert analysis, FPL's groundwater model developed for evaluation of various remedial measures has a number of technical issues that should be corrected before the model can be used reliably. Technical reviews of the FPL model were provided by University of Florida professor Dr. Lou Motz, SFWMD senior modeler Jeff Giddings, and SEAWAT model code developer Dr. Weixing Guo.

Some of the critiques of the model included:

- Inappropriate representation of canals in the model allowing only one way of water travel between the canals and the groundwater system
- Inaccurate representation of net recharge to the groundwater system that does not allow for accurate simulation of rainfall, runoff, evaporation and transpiration
- Use of constant hydraulic coefficients over large areas of the model known to have highly varying aquifer characteristics
- The Saltwater-Freshwater interface is not in the correct location
- Representation of an inappropriate hydraulic disconnect of the CCS from the underlying groundwater system during the remedial action simulations
- A lack of capture of existing contaminated groundwater in the lowermost portions of the aquifer
- Impacts to wetland systems adjacent to the CCS from the proposed remedial actions

A corrected model shows that cleanup efforts could negatively impact nearby wetlands and Everglades Restoration.

If FPL or one of the state agency's responsible for protecting water resources of the state corrected this model and accounted for the technical problems that our experts identified, the net result would be less water in the system than FPL is claiming so therefore a greater impact to adjacent wetlands and the progress of Everglades Restoration. The only way to retract the plume safely would be to slow the operations and pumps to protect the wetlands and water resources. FPL would not be in compliance with DEP's Consent Order to halt the plume within 3 years and fully retract it within 10 years. None of the model reviewers think it can be done safely in the time required.

Cleanup would in fact take a lot longer, and the sheer volume of water FPL planned to pump into the deep aquifer has never been done, is not guaranteed to remain in the deep aquifer nor cause some other unintended consequence.

Given the inaccuracies associated with the FPL model used to develop the proposed remedial actions and given the limitations of only addressing two possible hydraulic connections between the leaking cooling canals and Biscayne Bay within a highly permeable groundwater matrix, the proposed remedial actions by FPL will not stop the continued flow of contaminated water from the CCS to the surrounding groundwater system and the surface waters of Biscayne Bay.

--Summary prepared by Laura Reynolds, consultant to Southern Alliance for Clean Energy, October 2016