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	)	
	)	April 13, 2015
Combined Construction and License	)	
Application	)	
	)	

PETITION BY THE CITY OF MIAMI, FLORIDA, FOR LEAVE TO INTERVENE IN A HEARING ON FLORIDA POWER & LIGHT COMPANY'S COMBINED CONSTRUCTION AND OPERATING LICENSE APPLICATION FOR TURKEY POINT UNITS 6 & 7, OR IN THE ALTERNATIVE, PARTICIPATE AS A NON-PARTY LOCAL GOVERNMENT

On June 30, 2009, Florida Power & Light Co. ("FPL" or "the company") filed a Combined License Application (COLA) under 10 C.F.R. Part 52, for Turkey Point Units 6 and 7 in Miami-Dade County, Florida. The U.S. Nuclear Regulatory Commission ("the Commission") docketed the case on September 4, 2009. On March 6, 2015, notice of the draft Environmental Impact Statement (EIS) was published in the Federal Register. The filing deadline for contentions concerning the draft EIS is April 13, 2015.

Petitioner, the City of Miami ("the City"), a Florida municipality, meets the requirements for standing to intervene in the Commission's action on FPL's application and offers at least one admissible contention, and therefore seeks leave to intervene, or in the alternative, to participate as an interested non-party local government pursuant to 10 C.F.R. § 2.315(c).

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I. STANDING

The City is a Florida municipal corporation incorporated in 1896 and located 25 miles from Turkey Point. Additionally, FPL's proposed transmission corridor originating at the company's Davis substation is located directly within the City's limits. The City, its residents, and its taxpayers have a strong interest in protecting South Florida's environment, including ensuring that nuclear power plants do not contaminate the environment and their community, and avoiding damage to water quality and reductions in water availability due to environmental impacts and water use impacts caused by the construction and operation of the reactors. The City anticipates that hazards to the health of its residents may arise from completion and operation of the proposed reactors, including both routine and accidental releases of radioactive materials into the air and into local surface waters and groundwater. The City and its residents are also concerned about the impact construction and operation of the proposed units will have on the quality and quantity of water available to them for potable use, and to support natural ecosystems.

10 C.F.R. § 2.309 requires that, in addition to proposing at least one admissible contention, a petitioner wishing to intervene in a licensing proceeding must have standing. In determining whether a petitioner has standing to intervene as of right, Commission precedent states that the Boards should look to modem judicial standing concepts. Portland General Electric Co. (Pebble Springs Nuclear Plant, Units I and 2), 4 NRC 610 (1976). The judicial principles referred to are those set forth in Sierra Club v. Morton, 405 U.S. 727 (1972); Barlow v. Collins, 397 U.S. 159 (1970); and Association of Data Processing Service Organizations v. Camp, 397 U.S. 150 (1970). Such standards

require a showing that (1) the action being challenged could cause injury-in-fact to the person seeking to establish standing, and (2) such injury is arguably within the zone of interests protected by the statute governing the proceeding. Wisconsin Electric Power Co. (Point Beach, Unit I), 12 NRC 547 (1980); Crowe Butte Resources, Inc. (North Trend Expansion Project), 67 NRC 241 (2008); Dominion Nuclear Connecticut, Inc. (Millstone Nuclear Power Station, Unit 3), 67 NRC 421 (2008); Entergy Nuclear Operations, Inc. (Indian Point, Units 2 and 3), 68 NRC 43 (2008).

Injury-in-Fact

The proximity of the City and its residents to the site where the proposed units are to be built and operated is sufficient to establish an injury-in-fact. See Power Auth. Of the State of New York (James A. FitzPatrick Nuclear Power Plant and Indian Point Nuclear Generating No. 3), CLI-00-22, 52 NRC 266, 295 (2000); See Private Fuel Storage, L.C.C. (Independent Spent Fuel Storage Installation), CLI-98-13, 48 NRC 26. 33-34 (1998). The petitioner does not have to show that his concerns are well-founded in fact, as such concerns are addressed when the merits of the case are reached. Distances of as much as 50 miles have been sufficient. Virginia Electric and Power Co. (North Anna Nuclear Power Station, Units I and 2), 9 NRC 54, 56 (1979); Duquesne Light Co. (Beaver Valley Power Station, Unit 2), 9 NRC 393,410, 429 (1984); Tennessee Valley Authority (Watts Bar Nuclear Plant, Units 1 and 2), 5 NRC 1418, 1421 n.4 (1977); Texas Utilities Generating Co. (Comanche Peak Steam Electric Station, Units 1 and 2), 9 NRC 728, 730 (1979); Entergy Nuclear Operations, Inc. (Indian Point, Units 2 and 3), 68 NRC 43, 60 (2008). Because the City is situated 25 miles from FPL's proposed Turkey

Point Units 6 & 7, and the proposed transmission line corridor will be constructed within the City's jurisdiction, injury-in-fact is presumed, and the first prong of the judicial standing test is satisfied.

Zone of Interests

"In order to assess whether an interest is within the 'zone of interests' of a statute, it is necessary to 'first discern the interests "arguably ... to be protected" by the statutory provision at issue,' and 'then inquire whether the plaintiffs interests affected by the agency action are among them." U.S. Enrichment Corp. (Paducah, Kentucky), 54 NRC 267, 272-273 (2001), (citing National Credit Union Administration v. First National Bank, 522 U.S. 479, 492 (1998). The Atomic Energy Act authorizes the Commission to accord protection from radiological injury to both health and property interests. See AEA, §§ 103b, 161b, 42 U.S.C. §§ 2133(b), 2201 (b). Gulf States Utilities Co. (River Bend Station, Unit 1), 40 NRC 43, 48 (1994). NEPA regulations state that, in determining whether a federal action would "significantly" affect the environment, the agency should consider "[t]he degree to which the proposed action affects public health and safety." 40 C.F.R. § 1508.27. The agency is therefore responsible for taking a "hard look" at the project's effect on safety. See Metro. Edison Co. v. People Against Nuclear Energy, 460 U.S. 766, 772, 77S (1983).

As previously discussed, the City and its residents, located 25 miles from the proposed nuclear units, are presumed to suffer an injury-in-fact should there be an accidental release of radioactive materials. This potential injury clearly is within the class of injuries that the AEA is designed to protect against, i.e., radiological injury to both health and property interests.

Likewise, the City and its residents are among those protected by NEPA in its requirement that federal agencies consider the degree to which their actions, in this case licensing the construction and operation of nuclear reactors and associated facilities, affect public health and safety, and therefore significantly affect the environment. Based on the foregoing, the City has standing to intervene in this proceeding as a matter of right.

II. CONTENTIONS

1. Contention 1: The draft EIS is deficient in concluding that the environmental impacts from FPL's proposed deep injection wells will be "small" because the draft EIS fails to identify the source data of the chemical concentrations in draft EIS Table 3-5 for ethylbenzene, helptachlor, tetrachloroethylene, and toluene. Such information is necessary to ensure the accuracy and reliability of those concentrations, so it might reasonably be concluded that those chemicals will not adversely impact the groundwater by migrating from the Boulder Zone to the Upper Floridan Aquifer.

The draft EIS does acknowledge that upward migration of wastewater has occurred at other sites and that "it is possible that an unknown vertical pathway could exist within the area of influence of the injection wells and could lead to eventual upward migration of wastewater into the USDW." Draft EIS at 5-28; see also draft EIS at 2-54 and 2-69. Nevertheless, the draft EIS' conclusion that all water related impacts, including potential adverse impacts related to the deep injection wells, will be "small" is based on an incomplete analysis. Draft EIS at 5-29, Tables ES-1 and ES-2. Accordingly, it has failed to adequately address the potential impacts associated with the disposal of plant liquid effluents, including chemical and radioactive waste, into the Lower Floridan Aquifer via Class I underground injection wells.[1]

Specifically, the draft EIS simply mentions, without evaluating, the potential for upward migration of injectate and infiltration of contaminants into the Lower Floridan

[1] This omission is especially significant in light of the fact that some municipalities in Miami-Dade County are now using the Floridan Aquifer as a source for drinking water. See http://www.miamiherald.com/news/local/community/miami-dade/hialeah/article1972939.html

Aquifer, which is classified as an Underground Source of Drinking Water ("USDW") under the Safe Drinking Water Act. See 40 C.F.R. § 144.3. Like the Environmental Report (ER) previously submitted by FPL, the draft EIS presumes that the Boulder Zone of the Lower Floridan Aquifer in southern Florida is isolated from the overlying Upper Floridan Aquifer by thick confining units. Moreover, it fails to analyze the fate and transport of the injected effluent into the Boulder Zone, and fails to assess health and environmental risks associated with the liquid effluent pathway. Monitoring of other injection operations in South Florida has shown that the Boulder Zone provides less confinement in certain areas than originally thought.

This omission in the draft EIS is especially significant because the document also fails to provide a complete and accurate assessment of the chemical and radiological constituents of the plant liquid waste streams.[2] Liquid wastes from several systems are collected in a common blowdown sump for underground injection. Again, like the ER previously submitted by FPL, the draft EIS fails to identify the total amount of each chemical constituent of the effluent. Hence, it is not possible to discern exactly what is in the effluent, and in what amount. Although Table 3-5 purports to identify the effluent waste stream constituents and concentrations in the blowdown sump from reclaimed water or saltwater, the table only cites to prior FPL documents which are not accessible because they are password protected. Within previous versions of the ER, the relevant tables do not discus how the data was derived, and whether they capture all streams of

[2] The draft EIS also fails to state what release levels into the environment are considered safe for each potentially harmful chemical that will be released, and it does not provide the source references for safe release levels.

chemical and radiological contamination contained in the effluent. See ER Tables 3.6-2 and 3.6-3.

Ultimately, this analysis is based on an unsubstantiated assumption that no vertical migration of effluents from the Boulder Zone will occur. As a result, the draft EIS fails to adequately discuss or analyze the potential environmental impacts of migration of chemical and radioactive effluent from the Lower Floridan Aquifer into USDWs or Biscayne Bay.

2. Contention 2: The draft EIS is deficient because its evaluation of the operation of the radial collector wells does not preclude the possibility that the radial collector wells will change the plume dynamics of the Industrial Wastewater Facility/Cooling Canal contaminant plume.

The impact of the radial collectors on the Industrial Wastewater Facility (IWF) contaminant plume should be evaluated more thoroughly because the plume is believed to extend towards the proposed well field and potentially into this portion of the Biscayne Aquifer. It is possible that operation of the radial collector wells could change the plume dynamics, as evidenced by data submitted by FPL as part of the application to the State of Florida for the Units 6 and 7 project. These data included aquifer performance testing (APT) in the area where the radial collectors are proposed. Water quality data collected during the APT that was performed in April/May 2009 revealed unusually high sulfate levels in the surface water samples. These levels were well in excess of concentrations expected in typical surface waters of the bay but were consistent with the levels found in the IWF contaminant plume. This finding indicates the possibility that the plume may have been further distended during the APT to a point where a portion of it directly entered surface waters in the location of sampling. Groundwater levels in monitoring well MW-5 decreased to a stage lower than -5.0 feet (NAV88) during and after the event. The

data show a continual downward trend for several months and this trend starts well before the APT. Therefore these extraordinarily low groundwater levels cannot be attributed solely to the APT, if at all. If these data can be relied on, it is believed that the explanation is due to uptake by the IWF pumps of significant volumes of water from the surrounding portions of the aquifer. A similar decrease in water level was observed in the cooling canals with water levels quickly decreasing to stages well below sea level during the APT. Unusual and significant stresses to the aquifer are the most likely explanation.

Therefore, if operation of the radial collector wells does change the hypersaline plume dynamics, the portion of the plume that is recaptured by the current IWF pumping would likely change as would the potential fate of the remainder of this plume. Notably, tracer data from the Uprate Monitoring indicate some of the plume water does reach the bay benthos. Additionally, if more of the plume were to be captured by the IWF, this would result in the transport of additional salts and other plume constituents back onto the Model Lands landscape via the cooling canal system. A portion of these recaptured pollutants including chlorides would make its way into the westward portion of the existing contaminant plume. In other words, redistribution of the recaptured pollutants would create a mechanism whereby only a portion of the contaminants from the portion of the aquifer below the bay was returned to that portion of the aquifer. The net result of this redistribution would be increased loading of hypersaline water to other portions of the Biscayne aquifer.

The evaluation of the radial collector wells presented by the draft EIS is not adequate to address any of the above concerns, nor is it able to assess the combined effects of the existing operations and the Uprate and Units 6 and 7 projects. Nevertheless,

it is clear that both combined and cumulative impacts will result from these two projects that will be in addition to current hydrologic impacts. One important aspect of this hydrologic question will be to determine how much of the current water consumption is replaced via fresh groundwater and how much is replaced via saline groundwater and to what extent this ratio of sources will change with combined operation of all proposed projects. If the ratio tips to more saline water, then further contamination via salts entering the aquifer will occur. If the ratio tips to more freshwater, then the amount of freshwater (which is already inadequate in this area) will further decrease.[3] These questions require a multi density hydrologic model with coupled surface and groundwater since, according to Appendix G of the draft EIS, the current groundwater model is inadequate to examine these issues.

3. Contention 3: Concerning the radial collector wells, Appendix G, page G-28, of the draft EIS states that "[t]he base case model predicted that 1.9 percent of the water extracted by the RCW would come from the industrial wastewater facility. A 'worst' case of 3.3 percent of the extracted water coming from the industrial wastewater facility was predicted by cutting the vertical conductivity of all layers in half." This portion of the draft EIS is deficient because it does not address what percentage of water would come from under the IWF. Due to differences in vertical and horizontal transmissivity, it can be assumed that a greater quantity of water would come from deeper ground waters under the IWF, including the hypersaline plume, than from the surface waters in the IWF.

The draft EIS acknowledges that intermittent operation of the radial collector wells could allow hypersaline water to migrate into Biscayne Bay, stating on page G-29 that:

> FPL's base case model predicted that 1.9 percent of the water extracted by the RCW would come from the industrial wastewater facility. This prediction is also regarded as uncertain because of the parameter

[3] Likewise, FPL has proposed diverting to the IWF additional supplies of water from the Floridan Aquifer and the L-31. These proposals are currently being considered in state administrative proceedings and those outcomes should be taken into account in the NRC's review.

> calibration uncertainty mentioned above and because of the potential effects of variable density fluid on the migration of the hypersaline plume. If the RCWs are operated continuously, then it is likely that the hypersaline water flow induced by the RCW from the industrial wastewater facility would be captured by the RCW. However, **intermittent operation could result in an increase of hypersaline flow into the aquifer beneath the bay that could migrate into the bay when the RCW is not operating. The steady-state nature of the FPL model and the assumption of constant density fluids make the model inadequate for modeling this potential scenario.**

(Emphasis added.) For the radial collector wells to draw water directly from the IWF, the water would have to move vertically. Hence, it can be assumed that a greater quantity of water would come from deeper ground waters under the IWF, including the hypersaline plume, than from the surface waters in the IWF because vertical transmissivity is much lower than horizontal in the limestone of the upper Biscayne Aquifer and especially in Biscayne Bay where sediments impede vertical flow.

Assuming the denser hypersaline water under the IWF is more resistant to transit than the surrounding fresh water, the radial collector wells are likely to pull a greater amount of fresh water in from the northwest, increasing demand on the freshwater aquifer, as shown in Figure G-5 on page G-37 of the draft EIS. Likewise, the hypersaline water underneath the IWF, which has nearly twice the salinity of the bay water, may also prove problematic for cooling the reactors which require salt concentration to stay below 1.5 times the salinity of the bay water. Hence, it is vital the EIS address the percentage of water that could conceivably come from underneath the IWF.[4]

[4] Again, this is another area where it is important to account for the potential outcomes of FPL's proposals to divert to the IWF additional supplies of water from the Floridan Aquifer and the L-31 that are now being considered by state administrative agencies.

III. ALTERNATIVE PLEADING

In the event that the contentions raised herein are found inadmissible, and the City is therefore not admitted as a party under 10 C.F.R. § 2.309, the City requests permission to participate in the proceedings as a non-party local government, as provided for in 10 C.F.R. § 2.315(c), which provides that: "The presiding officer will afford an interested ... local governmental body (county, municipality or other subdivision) ... which has not been admitted as a party under § 2.309, a reasonable opportunity to participate in a hearing. Each ... local governmental body ... shall, in its request to participate in a hearing, each designate a single representative for the hearing. The representative shall be permitted to introduce evidence, interrogate witnesses where cross-examination by the parties is permitted, advise the Commission without requiring the representative to take a position with respect to the issue, file proposed findings in those proceedings where findings are permitted, and petition for review by the Commission under § 2.341 with respect to the admitted contentions."

As discussed above in the section on standing, the City and its residents are presumed to meet the injury-in-fact requirement for standing due to their proximity to the proposed Turkey Point Units 6 & 7, being situated 25 miles from the proposed site. The presumption recognizes that persons within a certain distance of nuclear power plants have an obvious interest in their safe construction and operation because of the potential harmful effects of radioactive material routinely or accidentally released into the air or water. In addition to this obvious interest, the City and its residents are further interested in agency action due to the associated potential offsite impacts caused by a proposed

above-ground transmission corridor which could interfere with planned development in the community and could create health and safety hazards.

IV. CONCLUSION

Because the City has demonstrated standing as required by 10 C.F.R. § 2.309, and has proposed at least one admissible contention, it should be granted leave to intervene as a full party and be granted a hearing on its contentions. In the event that the City is admitted as a party under § 2.309, the City also requests participation as a full party on all contentions raised by other parties. Should the City's contentions be found inadmissible, the City should be afforded participation as an interested non-party local government pursuant to 10 C.F .R. § 2.315(c).

V. NOTICE OF APPEARANCE OF DESIGNATED REPRESENTATIVE

For the purposes of compliance with 10 C.F.R. §§ 2.314(b) and 2.315(c), the City designates as its representative at hearing:

Matthew Haber
(Fla. Bar No. 105203)
Assistant City Attorney,
The City of Miami
444 SW 2nd Avenue
Miami, FL 33130
(305) 416-1800
(305) 416-1801 (facsimile)
mshaber@miamigov.com

Mr. Haber, appearing in a representative capacity for the City, when necessary, shall be the person designated to introduce evidence, interrogate witnesses where cross-examination by the parties is permitted, advise the Commission with respect to issues raised in the proceeding, file proposed findings of fact if any be permitted, and petition for review by the Commission under § 2.341 with respect to admitted contentions.

Signed electronically by: *<u>/s/ Matthew Haber</u>*

Matthew Haber
(Fla. Bar No. 105203)
Assistant City Attorney,
The City of Miami
444 SW 2nd Avenue
Miami, FL 33130
(305) 416-1800
(305) 416-1801 (facsimile)
mshaber@miamigov.com

Executed in Accord with 10 CFR 2.304(d): *<u>/s/ Matthew Haber</u>*

Matthew Haber
(Fla. Bar No. 105203)
Assistant City Attorney,
The City of Miami
444 SW 2nd Avenue
Miami, FL 33130
(305) 416-1800
(305) 416-1801 (facsimile)
mshaber@miamigov.com

VI. CERTIFICATE OF SERVICE

I hereby certify that on April 13, 2015, I electronically filed the foregoing petition with the electronic filing system of the U.S. Nuclear Regulatory Commission and that persons and parties of record were electronically served.