



Department of Regulatory and Economic Resources

Environmental Resources Management

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May 2, 2023

Ms. Brooke P. Clark, Secretary  
U.S. Nuclear Regulatory Commission  
Mail Stop O-16 B33  
Washington, DC 20555-0001

**VIA EMAIL:** *Rulemaking.Comments@nrc.gov*

ATTN: Rulemakings and Adjudications Staff

Re: U.S. Nuclear Regulatory Commission (NRC) Draft Revision 2 to NUREG-1437, "Generic Environmental Impact Statement for License Renewal of Nuclear Plants" (LR GEIS)

Dear Secretary U.S. Nuclear Regulatory Commission:

The Department of Regulatory and Economic Resources, Division of Environmental Resource Management (DERM) has reviewed the above-referenced draft LR GEIS submitted by the NRC. The NRC is proposing to amend its environmental regulations by updating the Commission's 2013 findings on the environmental effect of renewing the operating license of a nuclear power plant. This proposed rule would further redefine the number and scope of the environmental issues that must be addressed by the NRC and applicants during license renewal environmental reviews.

The Draft LR GEIS report identifies generic environmental issues related to the following as Category 1 issues, thereby not requiring a plant specific review. This raises concerns regarding the Turkey Point Power Plant located in Miami-Dade County because it immediately borders Biscayne National Park, the Florida Keys National Marine Sanctuary, and the Biscayne Bay Aquatic Preserve, respectively, to its east. Pursuant to 62-302.700 Florida Administrative Code, these national and state designations together afford these surface waters the highest level of protection in the state, both as Outstanding National Resource Waters and Outstanding Florida Waters, with Everglades National Park boundaries existing just south of the Sanctuary's. Over 20,000 acres of publicly owned conservation lands, portions of which are managed by Miami-Dade County's Environmental Endangered Lands program, are situated west of the plant within a wetland basin that is largely rain-driven and affected by competing freshwater needs of adjacent users, including Florida Power and Light (FPL). This unique configuration of local, state, and federally protected lands and/or surface waters warrant consideration such that review of ongoing and/or proposed impacts as well as mitigation of adverse impacts resulting from plant operations in the future should sufficiently address protection of these regional and national resources.

Based on the above, Miami-Dade County provides comments on the following environmental issues that are proposed to be categorized as Category 1 issues, thereby not requiring a site-specific review for license renewal. The County recommends that these issues, which address issues unique to Turkey Point Power Plant, be changed to Category 2 issues in order to require a site-specific review.

**The draft document claims that impacts of continued operations and refurbishment activities on geology and soils would be SMALL for all nuclear plants and would not change appreciably during the license renewal term.**

This is a site-specific issue and an incorrect assumption based on the unique geologic features beneath the Turkey Point Power Plant. The geologic structure in south Florida is unique in that it consists of highly transmissive karst features. Karst formations consist of soluble limestone which can change over time due to water flow through the ground. It is now understood that there is significant movement of groundwater as a result of the operations at Turkey Point Power Plant and the Cooling Canal System (CCS). The cumulative effects of groundwater movement underneath the plant and the CCS is not entirely understood, and the initial licensing review was based on the assumption that these were only minor impacts. It is reasonable to assume that changes in the geologic formations underneath and adjacent to Turkey Point Power Plant as a result of operations at the plant have occurred. This is evidenced by water quality standard exceedances in adjacent water bodies including the L-31E canal, which appears to be influenced by the hypersaline plume underneath Turkey Point Power Plant.

**The draft document claims that effects on salinity gradients would be limited to the area in the vicinity of the intake and discharge structures. These impacts have been assumed to be SMALL at operating nuclear power plants.**

This is a site-specific issue and an incorrect assumption for operations at Turkey Point Power Plant. It is now understood that the Turkey Point Power Plant has a large saline groundwater plume underneath the plant, the CCS, the adjacent wetlands to the west and Biscayne National Park to the east. A 2016 study by the US Geological Survey (USGS) showed that the saltwater intrusion line in the Model Lands basin, immediately adjacent to Turkey Point Power Plant, is advancing westward at a rate of 140 meters per year. This rapid migration of salt water is in part due to the operations at Turkey Point Power Plant. In addition, saltwater contamination has recently been documented in the nearby L-31E canal, a historically freshwater canal. Therefore, the operations at Turkey Point Power Plant should specifically be considered when reviewing a license renewal for this criterion.

**The draft document claims that the impacts of continued operations and refurbishment activities on groundwater quality resulting from water withdrawals would be SMALL. Further, it assumes that groundwater withdrawals at operating nuclear power plants would not significantly degrade groundwater quality.**

This is an incorrect assumption based on the operations at Turkey Point Power Plant and is a site-specific issue. Due to south Florida's local geology, surface water from the CCS and underlying groundwater moves freely through the porous bedrock and beyond the boundaries of the facility as evidenced by the presence of Tritium above background levels in groundwater and surface water. Monitoring data indicate that operation of the Cooling Canal System (CCS) has a large impact on groundwater quality contrary to the assumptions in the draft document. Data collected since the commencement of operations of the Turkey Point Power Plant and more recently since the Uprate of Units 3 & 4 demonstrate that there are long term effects on the groundwater that were not considered and that have been exacerbated over time with increased groundwater withdrawals. The NRC should consider and analyze all available data including the most recent post Uprate data, to fully evaluate the function of the CCS over the next 34 to 35 years, including plans for the addition of external sources of fresh or low saline water, and its impact on water resources in the area. The changes caused by these groundwater withdrawals are not static and given the data that currently exist, it is not

reasonable to assume that groundwater impacts from continued operations are small from current or future operations.

**The draft document claims that cooling system impacts on terrestrial resources for plants that have once-through cooling systems or cooling ponds would be SMALL. Continued operation of nuclear power plant cooling systems during license renewal could cause thermal effluent additions to receiving water bodies, chemical effluent additions to surface water or groundwater, impingement of waterfowl, disturbance of terrestrial plants and wetlands by maintenance dredging, and erosion of shoreline habitat. However, plants where these impacts have occurred successfully mitigated the impact, and it is no longer of concern. The draft document states that that these impacts are not expected to be significant issues during the license renewal term.**

This is an incorrect assumption based on the site-specific situation at Turkey Point Power Plant. The Turkey Point Power Plant is located immediately adjacent to the Everglades Mitigation Bank (EMB) which is owned and operated by FPL. Miami-Dade County has documented terrestrial resource impacts in certain wetland areas in close proximity to the plant and within the EMB. This includes the die off of sawgrass in large areas within the EMB immediately adjacent to the CCS. Over the past several years, FPL has collected Continuous Surface Electromagnetic (CSEM) data in the areas of the west of the plant in efforts to map the groundwater plume. These data have shown the migration of the groundwater plume into the area where the sawgrass die off has occurred.

**The draft document claims that the impacts of bird collisions with plant structures and transmission lines would be SMALL. Bird mortalities from collisions with nuclear power plant structures and in-scope transmission lines would be negligible for any species and are unlikely to threaten the stability of local or migratory bird populations or result in noticeable impairment of the function of a species within the ecosystem. These impacts are not expected to be significant issues during the license renewal term.**

This is a site-specific issue. Some transmission corridors approved for the Turkey Point Power Plant are located within and immediately adjacent to Everglades National Park. There are documented nesting colonies of the federally listed wood storks near these transmission corridors and the entire area is known as a core foraging area for these wood stork populations. In addition, the federally listed Everglades snail kite utilizes these areas for foraging and construction of transmission lines in the approved corridors would result in degradation of habitat and increased likelihood of listed species bird collisions with transmission lines.

Based on these facts, Miami-Dade County was able to successfully demonstrate in the District Court of Appeals that the installation of transmission lines in these corridors would result in an increase in bird collisions and that habitat would be degraded. It should be noted that the USFWS is currently considering removing the wood stork from the protections currently provided under the ESA. If this were to occur, these potential impacts to the wood stork would no longer be reviewed under the plant specific environmental impacts for threatened and endangered species.

**The draft document claims that the effects of nonradiological contaminants on aquatic organisms would be SMALL. Heavy metal leaching from condenser tubes was an issue at several operating nuclear power plants. These plants successfully mitigated the issue, and it is no longer of concern. Cooling system effluents would be the primary source of nonradiological contaminants during the license renewal term. Implementation of BMPs and adherence to**

**NPDES permit limitations would minimize the effects of these contaminants on the aquatic environment.**

This is an incorrect assumption based on the operations at the Turkey Point Power Plant. The matter of the Turkey Point's boundaries is important to note as the groundwater emanating from the CCS has been documented by the County to have moved beyond the FPL property boundaries altogether into surface water and groundwater including the L-31 E canal, as well as the County's Environmentally Endangered Lands Preserve where wetland habitat and associated fauna can be impacted. Contrary to the claim above that cooling system effluents including heavy metals leaching from condenser tubes would be the primary source of contaminants, chlorides from evaporation are the primary source of contamination to the surrounding ground and surface waters. Other impacts have included but not been limited to increases in salinity in freshwater wetland environments as a result of seepage fluxes caused by exchange of water and salt between the CCS and the groundwater beneath and adjacent to it, as well as nutrient inputs to surrounding areas from the CCS documented over time, specifically nitrogen. Increased nutrients in groundwater and surface waters can lead to impairments of Outstanding Florida Waters. Additionally, nitrogen and phosphorus as a result of decay from seagrass and mangrove die-offs within the cooling canal system has been documented in groundwater beyond the CCS and is a potential source of nitrogen impacting water quality in adjacent surface waters such as the L-31 E canal and Biscayne National Park.

DERM has been involved in review and evaluation of various aspects of the FPL Turkey Point Power Plant facility over the past several years. DERM is committed to providing assistance to the NRC in review of this proposed rule change, as well as any review pertaining to the Turkey Point Power Plant facility.

If you have any questions or need additional information, please contact Lisa Spadafina, DERM Director at 305-372-6567, or via email at [Lisa.Spadafina@miamidade.gov](mailto:Lisa.Spadafina@miamidade.gov).

Sincerely,



Lisa M. Spadafina, Director  
Division of Environmental Resources Management