

**[NOT YET SCHEDULED FOR ORAL ARGUMENT]**

No. 20-1026

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IN THE UNITED STATE COURT OF APPEALS  
FOR THE DISTRICT OF COLUMBIA CIRCUIT

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FRIENDS OF THE EARTH, et al.,  
Petitioners,  
v.

UNITED STATES NUCLEAR REGULATORY  
COMMISSION and  
UNITED STATES OF AMERICA,  
Respondents.

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On Petition for Review of Actions by the  
Nuclear Regulatory Commission

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**BRIEF OF *AMICUS CURIAE* CITIZENS ALLIED  
FOR SAFE ENERGY (CASE), IN SUPPORT OF  
PETITIONERS**

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**CERTIFICATE AS TO PARTIES, RULINGS AND RELATED CASES**

Pursuant to D.C. Circuit Rule 28 (a)(1), *amicus curiae* Citizens Allied for Safe Energy (CASE) states as follows:

**A. Parties, Intervenors, and Amici**

All parties and intervenors currently appearing before this Court are listed in Petitioner's brief. To undersigned's knowledge, CASE is the first entity to seek amicus status.

**B. Rulings Under Review**

References to the rulings at issue appear in the Brief for Petitioners Friends of the Earth, et al.

**C. Related Cases**

This case has not previously been before this Court or any other Court. The undersigned counsel are not aware of any other cases related to this one within the meaning of D.C. Cir. Rule 28(a)(1)(C).

/s/ William J. Snape III  
William J. Snape, III  
Counsel for Amicus CASE

**RULE 26.1 DISCLOSURE STATEMENT**

Pursuant to Federal Rule of Appellate Procedure 26.1, Citizens Allied for Safe Energy (CASE) states that it is a not-for-profit corporation incorporated in the State of Florida, with its principal place of business in Miami, Florida. CASE has no parent corporation and no publicly traded stock. Accordingly, no publicly held corporation owns 10% or more of its stock.

/s/ William J. Snape III  
William J. Snape, III  
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**CERTIFICATE OF COUNSEL PER D.C. CIRCUIT RULE 29(d)**

Counsel for *amicus curiae* Citizens Allied for Safe Energy (CASE) hereby certifies, pursuant to D.C. Circuit Rule 29(d), that this separate brief is necessary because CASE intends to proffer unique information focused on its members' own significant concerns regarding the past, current and anticipated future impact of the operation of the Cooling Canal System (CCS) for Nuclear Reactors Units 3 and 4 at Turkey Point at Homestead, Florida. The environmental, economic and governmental issues are specific to this location and this installation. This separate brief will allow the Court to receive this limited, targeted information efficiently without requiring CASE to take positions on other issues in the litigation.

/s/ William J. Snape III  
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## **GLOSSARY OF ACRONYMS AND ABBREVIATIONS**

Pursuant to D.C. Circuit Rule 28(a)(3), the following is a glossary of uncommon acronyms and abbreviations used in this brief:

CASE	Citizens Allied for Safe Energy
CCS	Cooling Canal System at Turkey Point
DERM	Department of Environmental Regulation Management Division of the Department of Regulatory and Economic Resources, Miami-Dade County, Florida
FDEP	Florida Department of Environmental Protection
NRC	Nuclear Regulatory Commission
SACE	Southern Alliance for Clean Energy

## **IDENTITY AND INTEREST OF *AMICUS CURIAE***

Citizens Allied for Safe Energy, Inc. (CASE), a Florida not-for-profit corporation incorporated in 2010, is submitting this *Amicus Curiae* brief in support of the Petitioners on behalf of its members and fellow citizens. Members who live within 50 miles of Turkey Point are aware of the dire impact the operation of the Turkey Point Cooling Canal System (CCS) has had on our beloved Everglades wetlands, our ecology, our economy, and our freshwater. Saltwater from the CCS has intruded several miles inland forcing the closure of municipal freshwater sources and the operator has been cited and fined by Miami-Dade County for polluting the area surrounding the CCS. The inadequate oversight and management of Turkey Point and the significant harm to CASE's environmental missions and individual members have led CASE to participate in this litigation.

## **SUMMARY OF ARGUMENT**

Turkey Point is set between two national parks, Biscayne National Park, an underwater marine preserve and spawning ground, and Everglades National Park, a 2,700 square mile "River Of Grass", as Marjory Stoneman Douglas named it, which is the source of drinking water for

almost 8,000,000 people in South Florida.<sup>1</sup> The operation of the Cooling Canal System (CCS) has caused the intrusion of hypersaline water into groundwater resources and introduced toxic and carcinogenic chemicals into the local ecosystem. CASE members and local residents implore that Turkey Point's renewed licenses be vacated to ensure future environmental protection. Plans and actions by Florida Power & Light (FPL) to mitigate and remediate the environmental harm at Turkey Point have been unsuccessful and the Florida Department of Environmental Protection (FDEP) has been ineffective in its oversight of the CCS. Cooling towers should replace the current CCS and the practice of "Once-Through" seawater should be fully vetted as alternatives for future use at Turkey Point Nuclear Units 3 and 4.

### **ARGUMENT**

The operation of Turkey Point Nuclear Reactors 3 and 4 pose an environmental threat to South Florida's ecosystem and economy. The CCS has been marked by numerous citations and fines for polluting the surrounding waters. Vast amounts of precious freshwater have been withdrawn from the aquifer in vain attempts to stem the relentless increase

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<sup>1</sup> MARJORY DOUGLAS, *THE EVERGLADES: RIVER OF GRASS* (Rhinehart & Company 1947).

in salinity and the production of toxic Cyanobacteria. The ultimate failure of the CCS must be adequately addressed.

**I. The environmentally harmful Turkey Point Cooling Canal System (CCS) is insufficiently responsive to mitigation and remediation efforts.**

The CCS at Turkey Point, Florida has been a devastating failure and is polluting surface water, groundwater, and the Biscayne aquifer. In the 1970s, the canals were dug on the shore of Biscayne Bay in an attempt to avoid seagrass bed damage as a result of hot seawater returning into Biscayne Bay.<sup>2</sup> The CCS has inflicted massive harm upon the Southeast corner of one of most unique natural wonders in the world: the Florida Everglades.<sup>3</sup> The reactors have caused canal water temperatures to reach 104 degrees Fahrenheit and created hypersaline water within the canals.<sup>4</sup>

The Southern Alliance for Clean Energy (SACE), one of the few organizations in the Southeast with the analytical capacity to approach utilities and decision makers with multi-disciplinary arguments showcasing

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<sup>2</sup> Jenny Staletovich, *Turkey Point is About to Get a New Pollution Permit. Critics Say Not So Fast*, WLRN (May 14, 2020), <https://www.wlrn.org/post/turkey-point-about-get-new-pollution-permit-critics-say-not-so-fast#stream/0>.

<sup>3</sup> *Learn About FPL's Polluting Turkey Point Site – Already a Problem*, SOUTHERN ALLIANCE FOR CLEAN ENERGY (Apr. 6, 2016), <https://cleanenergy.org/blog/learn-about-fpls-polluting-turkey-point-site-already-a-problem> [hereinafter *Polluting Turkey Point*].

<sup>4</sup> *Id.*

the true costs of high risk energy sources, has expressed concern for the Turkey Point site.<sup>5</sup> SACE stated that “Turkey Point is already one of Florida’s biggest water users and is discharging daily at least 600,000 pounds of salt and up to 3 million pounds toxins, carcinogens, other contaminants such as ammonia, heavy metals and tritium (a radioactive form of hydrogen) directly into the Biscayne Aquifer.<sup>6</sup> SACE concluded that “[u]sing vast amount of fresh water to generate energy conflicts with the important goals of Everglades restoration.”<sup>7</sup>

In 2012 and 2013, FPL modified Units 3 and 4 to increase the reactors’ output capacity by 15%, resulting in an immediate and drastic increase in salinity in the CCS as the graphs below show.<sup>8</sup> Graph 1 illustrates that after the CCS began operating in the 1970s, the CCS rose to 25.6 part per trillion (ppt) after only one year.<sup>9</sup> By September 2014, after

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<sup>5</sup> Polluting Turkey Point, *supra* note 3.

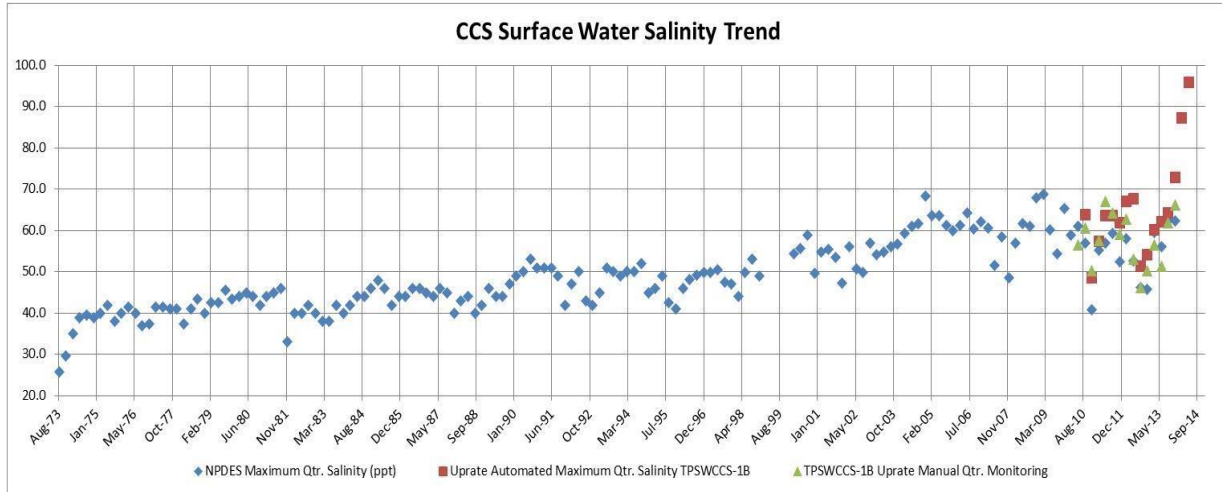
<sup>6</sup> *Id.*

<sup>7</sup> *Id.*

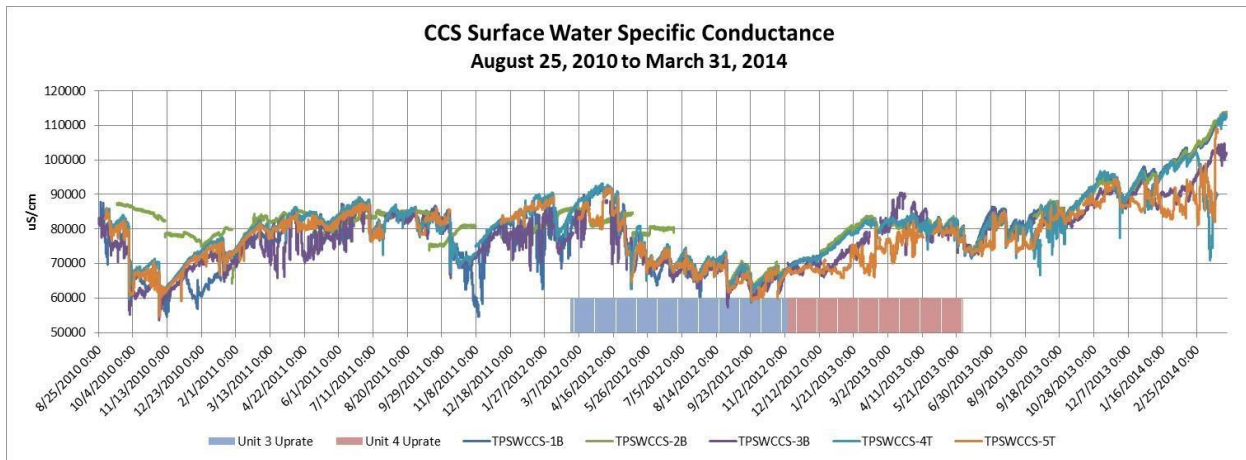
<sup>8</sup> Jenny Staletovich, *Hot Cooling Canals Threaten Shutdown of Turkey Point Nuclear Power Plants*, MIAMI HERALD (July 17, 2014), <https://www.miamiherald.com/news/local/community/miami-dade/article1975835.html>.

<sup>9</sup> MIAMI-DADE COUNTY, *Units 3&4 Uprate Implementation Water Quality Impacts*, NUCLEAR REGULATORY COMMISSION, <https://www.nrc.gov/docs/ML1529/ML15295A127.pdf> (last visited July 29, 2020).

the uprates, salinity reached almost 100 ppt, over three times that of seawater, causing increases in temperature and nitrogen.



Graph 1: Compilation of Available CCS Surface Water Salinity Data



Graph 2: Salinity of CCS Surface Water Increasing Post Uprate as Evidenced by Increasing Specific Conductance

Graph 2 demonstrates that salinity began to increase rapidly and reached nearly 100 practical salinity units (psu) in April 2014.<sup>10</sup> In June 2015 the Miami Dade County Commission ordered that a comprehensive

<sup>10</sup> *Id.*

study of the CCS be conducted and the results demonstrated that “the thermal efficiency of the CCS has decreased in the post-uprate period relative to the thermal efficiency in the pre-uprate period.”<sup>11</sup> The study also stated that “[e]ngineered systems that add less-saline water to the CCS to decrease salinity could have an adverse environmental impact caused by the increased water-level elevations in the CCS that these systems create.”<sup>12</sup> Despite this available information, FDEP, FPL and the Department of Environmental Regulation Management Division of the Department of Regulatory and Economic Resources (DERM) are unwilling to shut down the CCS.

On July 31, 2014 the NRC released a public notice that it was considering issuing amendments to FPL’s operating licenses to “increase the ultimate heat sink (UHS) water temperature limit...from 100 degrees Fahrenheit (°F) to 104 °F.”<sup>13</sup> Coincidentally, NRC’s 2014 request occurred at the same time that data from the CCS illustrated a major increase in salinity and temperature for Units 3 & 4. In response to the extremely high

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<sup>11</sup> David A. Chin, *The Cooling Canal System at the FPL Turkey Point Power Station*, MIAMI DADE COUNTY 1, 44 <https://www.miamidade.gov/environment/library/reports/cooling-canal-system-at-the-fpl-turkey-point-power-station.pdf> (last visited July 29, 2020)

<sup>12</sup> *Id.*

<sup>13</sup> 79 Fed. Reg. 44,464 at 44,465 (July 31, 2014).



temperature levels, FPL issued a request in 2014 that the NRC timely review its license “to avoid a dual unit shutdown that could affect grid reliability.”<sup>14</sup> The NRC found that the circumstances of “dry weather, [high] temperature, algae concentration, and grid reliability” created “exigent circumstances” and that “time [did] not permit the Commission to publish a Federal Register notice.”<sup>15</sup> However, it is the position of CASE that the circumstances around and impacts of the uprate of Units 3 and 4 on the CCS should have been apparent over time, and that these consequences should have been predictable to all parties -- and thus avoidable by the NRC, FDEP, and FPL.

The CCS is unlined which allows salt, minerals, chemicals, nutrients and bacteria flow freely from the canal and spread in all directions beyond the boundaries of the CCS. These substances then descend into the Biscayne Aquifer, spread east into Biscayne National Park and west into the Everglades.<sup>16</sup> Biscayne National Park is an underwater preserve that is vital to Florida Keys aquatic life. The CCS sits on the Biscayne Aquifer, and is the source of potable water for 7.7 million people.<sup>17</sup> When temperatures in the

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<sup>14</sup> 79 Fed. Reg. 47,689 at 47,690 (Aug. 14, 2014).

<sup>15</sup> *Id.*

<sup>16</sup> Polluting Turkey Point, *supra* note 3.

<sup>17</sup> EVERGLADES FOUNDATION, *The Everglades It's the Water You Drink*,

CCS increase, the rate of evaporation and saline density also increase. This dynamic also affects the increase in nitrogen which stimulates algae blooms, a Cyanobacteria that “[i]f ingested, water contaminated with toxins found in both red tides and blue-green algae can cause nausea, vomiting and, in severe cases, acute liver failure.”<sup>18</sup>

The Florida Keys National Marine Sanctuary protects 3,800 square nautical miles of coastal and ocean waters from the estuarine waters of south Florida along the Florida Keys archipelago.<sup>19</sup> A Study<sup>20</sup> published by the National Marine Sanctuary Foundation showed that “economic activity generated in Florida Keys National Marine Sanctuary is responsible for

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[https://evergladesfoundation.org/wp-content/uploads/2018/07/Water\\_Supply\\_FactSheet.pdf](https://evergladesfoundation.org/wp-content/uploads/2018/07/Water_Supply_FactSheet.pdf) (last visited July 31, 2020).

<sup>18</sup> Pam Wright, *Florida's Blue-Green Algae Bloom 10 Times Too Toxic to Touch, Testing Shows*, THE WEATHER CHANNEL (Aug. 10, 2018, 12:00 PM), <https://weather.com/science/environment/news/2018-08-10-florida-algae-bloom-st-lucie-microcystin#:~:text=Blue-green%20algae%20blooms%20are%20caused%20by%20cyanobacteria%20and,waste%20and%20fertilizers%20from%20nearby%20farms%20and%20neighborhoods>.

<sup>19</sup> THE FLORIDA KEYS NATIONAL MARINE SANCTUARY, *About*, <https://floridakeys.noaa.gov/about/> (last visited July 31, 2020).

<sup>20</sup> TBD Economics, LLC, *The Economic Contribution of Spending In The Florida Keys National Marine Sanctuary To The Florida Economy*, NATIONAL MARINE SANCTUARY FOUNDATION (July 2019), <https://marinesanctuary.org/wp-content/uploads/2019/07/FKNMS-Report-Final-072819.pdf>.

contributing \$4.4 billion and 43,000 jobs across the state of Florida.”<sup>21</sup> The Study analyzed the harmful effects of algal blooms in the Florida Keys and found that in a normal year, the impacts of an algal bloom event “could result in approximately \$389 million lost from the economy” while an extreme event “could cause up to \$1.5 billion in damages.”<sup>22</sup> Furthermore, fishing provides a significant economic impact to the Florida Keys. Many CASE’s members and neighbors are employed by the fishing industry and enjoy fishing recreationally.

CASE has observed that the CCS is the cause of unremitting pollution and salinization of the surrounding area. It is clear from the data and studies presented above that conditions in the CCS is not adequately controlled or monitored by responsible regulators. Threats to marine life, drinking water, and Florida’s economy that are dependent upon fishing, tourism, and clean water continue unabated.

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<sup>21</sup> NATIONAL MARINE SANCTUARY FOUNDATION, *Foundation Study Finds Florida Keyes National Marine Sanctuary Contributes \$4.4 Billion Annually to Florida’s Economy* (July 30, 2019), <https://marinesanctuary.org/news/foundation-study-finds-florida-keys-national-marine-sanctuary-contributes-4-4-billion-annually-to-floridas-economy/>

<sup>22</sup> *Id.*

**II. The Florida Department of Environmental Protection (FDEP) has been ineffective in its enforcement and oversight, and has allowed the CCS to operate for 49 years without sufficient implementation and enforcement of regulations.**

The FDEP has not sufficiently regulated the CCS. Under the Florida Power Plant Siting Act, licenses or certifications are “issued by the Secretary of the [FDEP] in non-contested cases.”<sup>23</sup> Despite this clear delegation of authority, FDEP has not adequately regulated the CCS and has therefore has not exercised its authority in a meaningful way. For example, in response to FPL’s poor management of the CCS in 2015, DERM issued a Notice of Violation and Orders For Corrective Action to advising FPL of its continued violations of Miami’s Municipal Code attributable to the Turkey Point Power Plant.<sup>24</sup> It is clear from the data and studies presented that conditions in the CCS are not adequately controlled or monitored by responsible regulators.

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<sup>23</sup> *Power Plant Siting Act*, FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION, <https://floridadep.gov/air/siting-coordination-office/content/power-plant-siting-act> (last visited July 29, 2020); *See also* FLA. STAT. § 403.501 (2017).

<sup>24</sup> Notice Of Violation and Orders for Corrective Action, MIAMI-DADE COUNTY DEPARTMENT OF REGULATORY AND ECONOMIC RESOURCES (Oct. 2, 2015), <https://www.nrc.gov/docs/ML1529/ML15295A207.pdf>.

In 2017, the FDEP issued a Non-Hazardous Deep Injection Well Permit to FPL, which it is currently using at the CCS in an attempt to correct the conditions for which the DERM NOV cited above was issued.<sup>25</sup> However, CASE can find no evidence that this injected material has ever been tested for the presence of Hazardous substances.<sup>26</sup> Class IV Hazardous Waste Injection Wells are banned in Florida.<sup>27</sup> As Mark B. McNeal, a Professional Geologist, has stated: “...the FDEP adopted EPA approved (Underground Injection Control) regulations and *FDEP has primacy in (Florida)*.”<sup>28</sup> Because the Permit authorizes FPL to draw water from just outside the CCS, it is quite plausible that the water to be injected into the aquifer will be polluted with the same toxic and carcinogenic waste present in the CCS.

The Applicant's Environmental Report does not explicitly list the specific substances that will be discharged into the CCS.<sup>29</sup> Rather, the report defers

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<sup>25</sup> Theresa Java Free, *Turkey Point Can Flush Down Reactor Water*, KEY NEWS (July 19, 2017), <https://keysnews.com/article/story/turkey-point-can-flush-down-reactor-water/> [hereinafter *Reactor Water*].

<sup>26</sup> Mark B. McNeal, *Florida's Diverse Use of Class I Injection Wells*, GROUNDWATER PROTECTION COUNCIL 1, 3 (Jan. 23, 2013) [http://www.gwpc.org/sites/default/files/event-sessions/McNeal\\_Mark\\_2.pdf](http://www.gwpc.org/sites/default/files/event-sessions/McNeal_Mark_2.pdf).

<sup>27</sup> *Id.* at 2.

<sup>28</sup> *Id.* at 9 (emphasis added).

<sup>29</sup> *Applicant's Environmental Report Subsequent Operating License Renewal Stage*, UNITED STATES NUCLEAR REGULATORY COMMISSION, <https://www.nrc.gov/docs/ML1811/ML18113A145.pdf> (last visited July 29, 2020).

to the Environmental Impact Statement for Turkey Point Reactors 6 & 7 published by the NRC.<sup>30</sup> The Environmental Impact Statement says that the following chemicals would likely be added to the CCS: “a biocide (sodium hypochlorite), pH adjusters (sulfuric acid, lime, carbonylhydrazide, hydrazine), proprietary scale inhibitors, a proprietary dispersant (high stress polymer), a coagulant (ferric chloride), and oxygen scavengers (sodium bisulfite, morpholine).”<sup>31</sup> It is therefore quite reasonable to conclude that these toxic and carcinogenic chemicals that are deliberately added to Units 3 & 4 will then be injected into the aquifer under FDEP’s permit.

Indeed, the notice of violation described on page 10, including footnote 24, *supra*, was issued for this exact water. The responsibility of monitoring the CCS falls under the purview of the FDEP, yet the FDEP has demonstrated itself unable to thoroughly and accurately address the

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<sup>30</sup> UNITED STATES ARMY CORPS OF ENGINEERS, *Environmental Impact Statement for Combined Licenses (COLs) for Turkey Point Nuclear Plant Units 6 and 7*, UNITED STATES NUCLEAR REGULATORY COMMISSION (Oct. 2016), <https://www.nrc.gov/docs/ML1630/ML16300A137.pdf> [hereinafter COLs Chapters 1 to 6].

<sup>31</sup> UNITED STATES ARMY CORPS OF ENGINEERS, *Environmental Impact Statement for Combined Licenses (COLs) for Turkey Point Nuclear Plant Units 6 and 7 – Chapters 7 to 12*, UNITED STATES NUCLEAR REGULATORY COMMISSION 1, 339 (Oct. 2016), <https://www.nrc.gov/docs/ML1630/ML16300A137.pdf>.

environmental impact of the CCS. FDEP has allowed the CCS to become an uncontrollable cesspool of salinity and a toxic and carcinogenic waste despoiling the aquifer and nearby Biscayne Bay and the Florida Everglades.

**III. Cooling towers should replace the CCS and there is sufficient time to plan and build them before the extended operating schedule for Turkey Point Units 3 and 4 begins.**

As an alternative to the CCS, FPL should consider replacing them with cooling towers as planned for Turkey Point Reactors 6 & 7. Continued operation of the CCS will only extend its already catastrophic impact on the environment, the nearby residents, and the local economy. In July, 2016 the Miami-Dade County Commission unanimously passed a resolution to stop FPL from using the canals at Turkey Point.<sup>32</sup> The Board noted that, “over the decades, the saltier, heavier water flowing through more than 5,900 acres of canals have leaked downward, pushing a line of saltwater inland toward the Keys’ drinking water wellfield.”<sup>33</sup> Given the widespread acknowledgement that the CCS poses a threat to the environment, if the twenty year operating extension is sustained, cooling towers should be implemented as an alternative to the existing damaging canals.

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<sup>32</sup> *Id.*

Jenny Staletovich, *Miami-Dade Pushes to Retire FPL’s Turkey Point Cooling Canals*, MIAMI HERALD (July 19, 2016, 7:44 PM), <https://www.miamiherald.com/news/local/environment/article90635427>.

<sup>33</sup> *Id.*

**IV. Use of “Once-Through” seawater has been authorized for future Turkey Point Nuclear Units 6 and 7, should be fully vetted .**

Units 3 & 4 have historically used “Once-Through” seawater and Units 6 & 7 have already been approved for future use.<sup>34</sup> Currently, the circulating-water system at CCS uses saltwater “obtained through radial collector wells with laterals extending beneath Biscayne Bay” when there are insufficient water quantities to power the system.<sup>35</sup> FPL previously considered two alternative intake systems, “a shoreline intake structure and a passive offshore intake but ultimately determined that neither would be “environmentally preferable.<sup>36</sup> These findings demonstrate that the seawater options are at least possible for Units 3 & 4 and should be fully evaluated as potential alternatives. No cooling method is without its downsides. The CCS is dysfunctional and environmentally harmful; cooling towers place unacceptable demands on limited available freshwater. Accordingly, agencies should not be permitted to destroy the environment because of a fifty year old consent decree that may no longer make sense. Because the seawater option is at least possible for Units 3 & 4, it should be fully vetted in modern times. An objective and independent analysis should

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<sup>34</sup> COLs Chapters 1 to 6, *supra* note 33, at 370.

<sup>35</sup> *Id.*

<sup>36</sup> *Id.* at 373.



be employed to examine the use of once-through seawater, or the use other alternative energy sources.

### CONCLUSION

"NEPA's primary function is 'information-forcing,' compelling federal agencies to take a hard and honest look at the environmental consequences of their decisions." *NPCA v. Semonite*, 916 F.3d 1075, 1082 (D.C. Cir. 2019), *citing American Rivers v. FERC*, 895 F.3d 32, 49 (D.C. Cir. 2018). For the foregoing reasons CASE respectfully requests that the Court vacate the Turkey Point renewed licenses, and remand to the NRC, with instructions and limitations.

Respectfully submitted,

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Dated: August 3, 2020

**CERTIFICATE OF COMPLIANCE**

Pursuant to DC Circuit Rules 29 and 32, as well as the accompanying U.S. Rules of Appellate Procedure (FRAP), undersigned counsel for *amicus curiae* certifies that this brief:

- (i) complies with the page/type-volume limitation of FRAP Rule 29(a)(5), excluding the parts of the brief exempted by FRAP Rule 32(f), with a total of 2753 words, and under 15 pages including all footnotes; and
- (ii) complies with the typeface requirements of FRAP Rule 32(a)(5) and (6) because it has been prepared using Microsoft Office Word and is set in Georgia font and size 14-point or higher.

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**CERTIFICATE OF SERVICE**

I hereby certify that on August 3, 2020, I electronically filed the foregoing amicus curiae brief with the Clerk of the Court using the CM/ECF system. Participants in this case are registered CM/ECF users, and service will be accomplished by the appellate CM/ECF system.

By: /s/ William J. Snape III

William J. Snape, III