



Citizens Resistance at Fermi Two (CRAFT)  
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October 20, 2023

Permits Section, Water Resources Division  
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Submitted by:

<https://mienviro.michigan.gov/ncore/external/publicnotice/info/5797946950012781164/comments>

**RE: Fermi 2 Nuclear Power Plant NPDES Comments – Permit No. MI0037028**

Citizens' Resistance at Fermi 2 (CRAFT) respectfully submits these comments on EGLE's draft National Pollutant Discharge Elimination System permit (draft permit) for DTE Electric Company's (DTE) Fermi 2 Nuclear Power Plant (Fermi 2).

1. CRAFT objects to the absence of thermal limits in the draft permit. The absence of thermal limits violates Mich. Admin. Code R. 323.1070(1) and R. 323.1070(2)(j). CRAFT further objects to EGLE's allowance of a mixing zone where state water quality standards may be exceeded, as this allowance is contrary to the recommendations in Chapter 5.1.1 of the EPA's Water Quality Standards Handbook. *See* 40 C.F.R. § 131.13
2. CRAFT objects to the absence of discharge limits in the draft permit governing release of radionuclides from Fermi 2, and requests that EGLE exercise its legal authority to regulate radionuclide discharges indirectly.
3. CRAFT objects that Fermi 2 was permitted to operate under the administratively continued, and overly permissive, current NPDES permit. Although DTE submitted a permit application 180 days before the existing permit expired, as required by Mich. Admin. Code R 323.2151, that permit application was not complete, requiring several subsequent amendments that likely delayed the issuance of the draft permit. As a result, the facility has been operating, and will continue to operate, under an administratively continued permit, rather than operating pursuant to a new permit that sufficiently protects human health and the environment. Such a continuance has the practical effect of extending the length of the permit beyond 5 years which is the permit length allowed under Mich. Admin. Code R 323.2150. Allowing this continuance also ignores the important fact that the Fermi 2 facility meets a number of critical criteria identified in EPA's priority permit system as environmentally significant. Accordingly, its permit should have been promptly reissued with appropriate protective requirements.

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These and other objections to the draft permit are further detailed in the attached comment letter.

CRAFT is an Indigenous-led, intergenerational, multi-racial, and cross-cultural grassroots organization dedicated to environmental justice and the well-being of the earth. It focuses on nuclear safety in Michigan and the Great Lakes region. CRAFT formed in response to a 1993 accident at Fermi 2 that caused 1.5 million gallons of untreated radioactive water to enter Lake Erie, which is a local source of drinking water. CRAFT continues to object to the potential for accidental releases from this nuclear facility and maintains concern about the health and environmental effects of Fermi 2 under normal operating conditions.

CRAFT prepared these comments in collaboration with the Environmental Law Clinic at the UC Berkeley School of Law (Clinic). The Clinic trains students to enhance environmental justice and environmental health by deploying the law to protect those least politically empowered. The Clinic also works to ensure that the life experiences of its clients' members inform the highly technical regulatory space in which health-consequential decisions are made. The Vermont Environmental Law Clinic and the Environmental Law Clinic at University of Detroit Mercy School of Law also made substantial contributions to this submission.

Now, CRAFT will look to EGLE to do their best to save the Western Basin of Lake Erie from degradation.

Submitted for all creation,

Jesse DeerInWater, CRAFT Community Organizer

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## **Introduction**

The Great Lakes are one of the earth's most distinctive natural features and contain over 20% of the world's available fresh surface water.<sup>1</sup> The Lakes are also surrounded by twelve aging nuclear fission reactors, nine in the U.S., and three in Canada. These facilities continuously discharge pollutants into the Lakes, which are the drinking water source for millions of people. These nuclear plants release heated water and radionuclides to the Great Lakes during normal operations. These plants pose the risk of accidental radiation releases to air, water, and soil; and none have a plan for safe, long-term disposal of their spent nuclear fuel.

The Enrico Fermi 2 Nuclear Plant in Monroe County, Michigan, on the western shore of Lake Erie, is one such facility. Fermi 2 began operations in 1988 and was licensed for forty years. Pursuant to a 2016 renewal license from the Nuclear Regulatory Commission (NRC), its lifespan has been extended for twenty additional years, such that the plant is NRC-authorized to operate until 2045.<sup>2</sup> However, importantly, Fermi 2 is also subject to NPDES permitting and other operational permits that are not under NRC authority.

CRAFT's primary objection is based on the absence of thermal limits in the Fermi 2 draft NPDES permit. The Fermi 2 reactor draws water from Lake Erie for cooling, and discharges heated, phosphorus-laden wastewater both directly to Lake Erie and to Swan Creek, which then flows into Lake Erie. High water temperature and nutrient loading are both widely understood contributors to the formation and persistence of Harmful Algal Blooms (HABs).<sup>3</sup> HABs can cause illness and even death in humans and animals.<sup>4</sup> The frequency and extent of HABs in the Western Lake Erie Basin caused the Michigan Department of Environmental Quality in 2016 to declare the Basin an "impaired" water under Section 303(d) of the Clean Water Act.<sup>5</sup> In 2018, the Ohio Environmental Protection Agency followed suit, responding to public and litigation pressure after a 2015 incident in which a state of emergency was declared for the City of

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<sup>1</sup> Encyclopedia Britannica online, "Great Lakes," <https://www.britannica.com/place/Great-Lakes>, <https://decommissioningcollaborative.org/fermi-2/>.

<sup>3</sup> FRESHWATER HARMFUL ALGAL BLOOMS 101, <https://www.nrdc.org/stories/freshwater-harmful-algal-blooms-101> (last visited Nov. 8, 2022).

<sup>4</sup> FACTS ABOUT CYANOBACTERIAL BLOOMS FOR POISON CENTER PROFESSIONALS, <https://www.cdc.gov/habs/materials/factsheet-cyanobacterial-habs.html> (last visited Nov. 8, 2022).

<sup>5</sup> Paul Gross et al., "Lake Erie impairment designation: What it means for farmers," Mich. State Univ. Extension (Apr. 11, 2017), [https://www.canr.msu.edu/news/lake\\_erie\\_impairment\\_designation\\_what\\_it\\_means\\_for\\_farmers](https://www.canr.msu.edu/news/lake_erie_impairment_designation_what_it_means_for_farmers).

Toledo's drinking water due to algal contamination, forcing nearly a half-million people to find an alternative water supply.<sup>6</sup>

Due to persistent HABs in the western basin of Lake Erie near Fermi 2 permanent signage warns swimmers at a beach near the reactor, "If it's green, don't go in."



**Figure 1.** Sterling State Park, Monroe, MI  
*Photo: UC Berkeley Environmental Law Clinic (Nov. 2022)*

HABs pose such acute health concerns that in the summer of 2022, the Monroe County Health Department issued a whole-body contact advisory for Sterling State Park that lasted for nearly three weeks. The advisory cautioned people not to enter or allow their pets to enter the water because of the harmful effects of the algal blooms.<sup>7</sup>

The draft permit, like the facility's current permit, lacks thermal discharge limits. The temperatures of Fermi 2's discharges appear to exceed the thermal limits specified for the Great Lakes in Michigan's State Water Quality Standards.<sup>8</sup> To ensure that Fermi 2's future operations protect human and environmental health, EGLE must modify the draft permit, and impose permit conditions that require facility compliance with state Water Quality Standards (WQS).<sup>9</sup>

<sup>6</sup> Matt Reynolds, "Ohio deems Lake Erie 'impaired' after years of resistance," Courthouse News Svce. (Mar. 23, 2018), <https://www.courthousenews.com/ohio-deems-lake-erie-impaired-after-years-of-resistance/>.

<sup>7</sup> Monroe News Staff Report, *Suspected Algal Bloom in Lake Erie; Monroe County Health Department Makes Recommendations*, The Monroe News (Jul. 29, 2022), <https://www.monroenews.com/story/news/2022/07/29/suspected-algal-bloom-reported-western-basin-lake-erie/10173570002/>. The Advisory lasted from July 29 through August 16, 2022.

<sup>8</sup> Mich. Admin. Code. 323.1070.

<sup>9</sup> *Id.*

Incorporating a thermal limit in Fermi 2's permit is also consistent with the restorative goals of EGLE's "impairment" designation under the CWA, notwithstanding EGLE's failure to prepare a Total Maximum Daily Load (TMDL) to date.

Addressing Fermi 2's thermal pollution of Lake Erie is a matter of increasing urgency. Climate change is accelerating the formation of HABs and threatening the Lake Erie ecosystem. As described below, recent scientific research suggests that the human health dangers of HABs are more varied and serious than previously understood. EGLE should accordingly act swiftly to protect the Lake and nearby residents from further harm by setting a thermal limit.

Beyond HAB-related harms from discharge of elevated-temperature water and phosphorus, the draft permit fails to limit radionuclide discharge in facility wastewater. Any radionuclide discharge may further degrade Lake Erie, negatively impacting the environment and communities in Monroe County.<sup>10</sup> EGLE should exercise its authority to provide publicly available data regarding liquid effluent from Fermi 2, and control liquid effluent from Fermi 2.

## **I. EGLE Must Include Thermal Limits in the NPDES Permit for Fermi 2**

### A. Thermal limits are legally required

The CWA requires that thermal discharge limits comport with any applicable state water quality standards (WQSs).<sup>11</sup> Specifically, NPDES permits for point source dischargers must extend beyond the requirement of best practicable control technology currently available to include "any more stringent limitation . . . required to implement any applicable water quality standard."<sup>12</sup> Michigan has identified numeric WQSs for maximum temperature of thermal effluent from point sources.<sup>13</sup> As such, EGLE must include temperature limits in DTE's NPDES permit for Fermi 2 to ensure the facility's compliance with Michigan's WQSs.

There is a strong likelihood that Fermi 2 effluent discharges have already violated state WQSs. Michigan WQS Rule 70(1) provides: "The Great Lakes and connecting waters shall not receive a heat load which would warm the receiving water at the edge of the mixing zone more than 3 degrees Fahrenheit above the existing natural water temperature."<sup>14</sup> In the months of May, June, July, August, and September 2022, however, the effluent temperature at Fermi 2 Outfall 001 was reported to be more than 3°F above the intake temperature (i.e., the existing natural water temperature) almost every day (Table 1, below). While these data do not definitively establish that the edge of the mixing zone was heated more than 3°F, the extreme difference between intake and effluent water temperatures suggests that Fermi 2 may have been in multi-month violation of WQS Rule 70(1).

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<sup>10</sup> EPA Guide, Radionuclides in Drinking Water: A Small Entity Compliance Guide, 2002 (<https://www.epa.gov/sites/default/files/2015-06/documents/compliance-radionuclidesindw.pdf>).

<sup>11</sup> See 33 U.S.C. § 1311(b)(1)(C); 40 CFR § 122.44(d). See also 33 U.S.C. §§ 1341(a)(1) and (d) and 1370.

<sup>12</sup> 33 U.S.C. § 1311(b)(1)(c).

<sup>13</sup> MICH. ADMIN. CODE r. 323.1070(1).

<sup>14</sup> *Id.*

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Michigan WQS Rule 70(2) states: “The Great Lakes and connecting waters shall not receive a heat load which would warm the receiving water at the edge of the mixing zone to temperatures in degrees Fahrenheit higher than the following monthly maximum temperature: (j) Lake Erie: J 45, F 45, M 45, A 60, M 70, J 75, J 80, A 85, S 80, O 70, N 60, D 50.”<sup>15</sup> From May through September 2022, the final effluent temperature at Fermi 2 Outfall 001 exceeded the WQS maximum temperature for that month almost every day (Table 1). Again, while this data does not confirm that the edge of the mixing zone was heated beyond the monthly maximum, the extreme differences in intake and effluent temperatures are strongly suggestive of exceedance.

<b>Fermi 2 Discharge at Outfall 001</b>	<b>May 2022<sup>16</sup></b>	<b>Jun. 2022<sup>17</sup></b>	<b>Jul. 2022<sup>18</sup></b>	<b>Aug. 2022<sup>19</sup></b>	<b>Sept. 2022<sup>20</sup></b>
Maximum Daily Intake Temperature (°F) at 001	65	75	79	80	78
Maximum Daily Final Effluent Temperature (°F) at 001	97	95	94	95	93
Number of days when final effluent temperature was more than 3 °F above intake (WQS)	30	26	31	31	31
Number of days when final effluent temperature exceeded Michigan WQS maximum	20	27	31	26	23
Number of days when final effluent temperature (but not intake temperature) exceeded 25 °C (77 °F) ideal for HAB growth	15	26	19	15	25

**Table 1**

<sup>15</sup>MICH. ADMIN. CODE r. 323.1070(2)(j).

<sup>16</sup>DTE ELECTRIC COMPANY, DECO-FERMI-2 PIT, DISCHARGE MONITORING REPORT, PERMIT NUMBER MI0037028, DMR PERIOD MAY 1, 2022 TO MAY 31, 2022 (June 20, 2022).

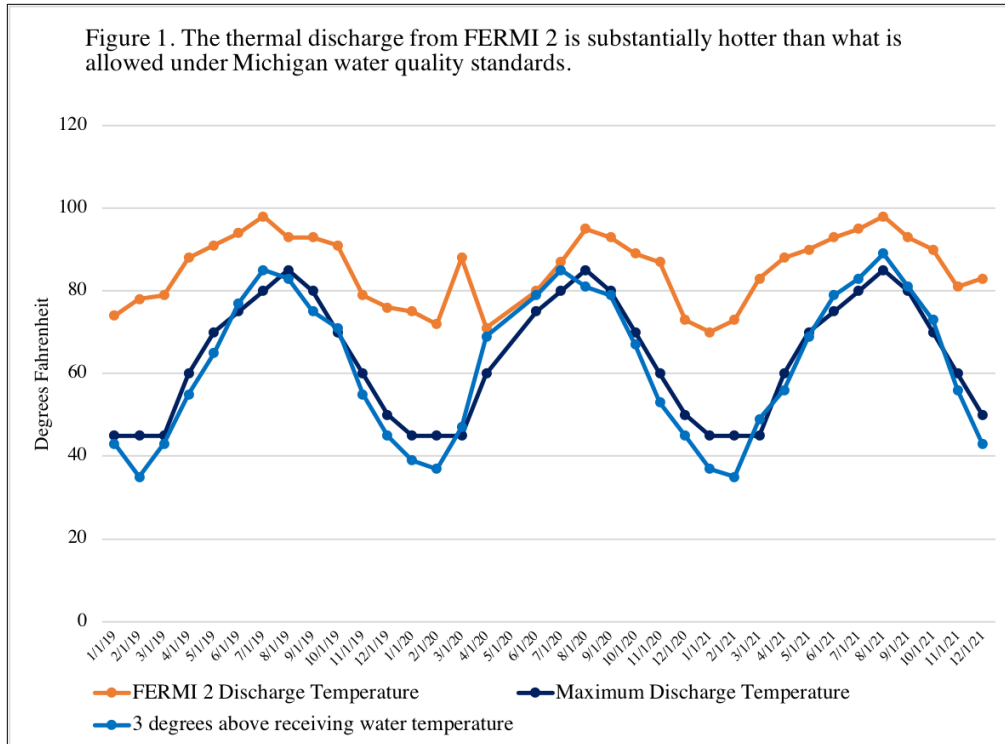
<sup>17</sup>DTE ELECTRIC COMPANY, DECO-FERMI-2 PIT, DISCHARGE MONITORING REPORT, PERMIT NUMBER MI0037028, DMR PERIOD JUNE 1, 2022 TO JUNE 30, 2022 (June 20, 2022).

<sup>18</sup>DTE ELECTRIC COMPANY, DECO-FERMI-2 PIT, DISCHARGE MONITORING REPORT, PERMIT NUMBER MI0037028, DMR PERIOD JUL. 1, 2022 TO JUL. 31, 2022 (Aug. 19, 2022).

<sup>19</sup>DTE ELECTRIC COMPANY, DECO-FERMI-2 PIT, DISCHARGE MONITORING REPORT, PERMIT NUMBER MI0037028, DMR PERIOD AUG. 1, 2022 TO AUG. 31, 2022 (Sep. 20, 2022).

<sup>20</sup>DTE ELECTRIC COMPANY, DECO-FERMI-2 PIT, DISCHARGE MONITORING REPORT, PERMIT NUMBER MI0037028, DMR PERIOD SEP. 1, 2022 TO SEP. 30, 2022 (Oct. 20, 2022).

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**Figure 2.** Graphic: Vermont Environmental Law Clinic

Importantly, in the absence of thermal discharge limits in Fermi 2’s permit, and in the context of EGLE’s regulatory permission for a mixing zone in Lake Erie where elevated temperatures are allowed, DTE does not *monitor* the temperature at the actual discharge outfall D001 to determine compliance or noncompliance with WQSs. This data gap benefits DTE, but it does not ensure adequate protection of state waters. If, instead, EGLE imposed the required thermal limits—as CRAFT urges— DTE would be required to measure the water temperature both at the discharge point and in the receiving water body, and confirm whether its discharges conform to permit limits.

Further, and critically, although the CWA in many instances allows exceedance of state WQSs within mixing zones (because the WQSs apply only to the edge of such zones), such WQS exceedances are prohibited where mixing zones “impair the designated use of the waterbody as a whole,” or where pollutant concentrations within the mixing zone “cause significant human health risks considering likely pathways of exposure.”<sup>21</sup> EPA therefore recommends that the use of mixing zones in NPDES permits be carefully evaluated and appropriately limited on a case-by-case basis in light of the overarching requirement to protect the designated use of the waterbody as a whole.<sup>22</sup> Here, local HAB growth within the mixing zone poses potentially significant human health risks, as described below, such that EGLE should disallow the use of mixing zones for Fermi 2’s discharge.

<sup>21</sup> 40 C.F.R. § 131.13; ENV’L. PROT. AGENCY, WATER QUALITY STANDS. HANDBOOK, § 5.1.1.

<sup>22</sup> 40 C.F.R. § 131.10.



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Disallowing a mixing zone is squarely within EGLE's purview. As the NRC made clear in the context of Fermi 2's most recent licensing proceeding, regulation of thermal effluent impacts from nuclear facilities is the exclusive province of water quality regulators:

DTE is required to address the thermal impacts from the operation of Fermi 2 – including any possible mitigation that may be required – as part of the NPDES permitting process. . . . The State of Michigan, not the NRC, is responsible for administering the NPDES permitting process.<sup>23</sup>

Including thermal effluent limits in Fermi 2's NPDES permit, and disallowing any thermal mixing zone, will ensure compliance with CWA requirement that thermal limits satisfy Michigan WQSs, and the EPA regulatory requirement that NPDES permits prevent further degradation of impaired water bodies.

### B. Thermal limits are necessary

#### *1. Lake Erie's HABs threaten human and ecological health*

Thermal discharge limits are necessary to protect human health and the Lake Erie ecosystem. As a result of anthropogenic warming and pollution of surface waters, HABs are proliferating, damaging ecosystems and impacting drinking water supplies around the world.<sup>24</sup> A bloom can be harmful to people, animals, or the environment if it produces toxins, becomes too dense, depletes the oxygen in the water, or releases harmful gases.<sup>25</sup> Federal and state agencies recognize the many dangers that HABs pose to human health and entire ecosystems.<sup>26</sup>

In freshwater systems, cyanobacteria—the microorganisms commonly called “blue-green algae”—result in HABs.<sup>27</sup> Factors contributing to HAB formation include light availability; water temperature; alteration of water flow; vertical mixing; pH changes; nutrient loading; and trace metals.<sup>28</sup> HABs produce toxins that harm people, animals, and ecosystems, imperil drinking water supplies, compromise recreational activities, and decrease property values.<sup>29</sup>

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<sup>23</sup> U.S. NUCLEAR REGUL. COMM'N., NUREG-1437, SUPPLEMENT 56, VOL. 2, GENERIC ENV'L. IMPACT STATEMENT FOR LICENSE RENEWAL OF NUCLEAR PLANTS REGARDING FERMI 2 NUCLEAR POWER PLANT, A-10 (Sep. 2016), <https://www.nrc.gov/docs/ML1625/ML16259A109.pdf>.

<sup>24</sup> CAUSES OF CYANOHABS, <https://www.epa.gov/cyanohabs/causes-cyanohabs> (last visited Sep. 20, 2022).

<sup>25</sup> FACTS ABOUT CYANOBACTERIAL BLOOMS FOR POISON CENTER PROFESSIONALS, <https://www.cdc.gov/habs/materials/factsheet-cyanobacterial-habs.html> (last visited Nov. 8, 2022).

<sup>26</sup> See HARMFUL ALGAL BLOOMS FAQs, <https://www.michigan.gov/egle/-/media/Project/Websites/egle/Documents/Programs/WRD/SWAS/HAB/HAB-FAQ.pdf?rev=77d8be9e26f547c28e9634c57b82a2fb&hash=CBC5D1D7B8D5DEFDA89E0F28D30465F1>; HARMFUL ALGAL BLOOMS, <https://www.michigan.gov/egle/about/organization/water-resources/assessment-michigan-waters/harmful-algal-blooms>; HARMFUL ALGAL BLOOM – ASSOCIATED ILLNESS, <https://www.cdc.gov/habs/michigan.html>

<sup>27</sup> NOAA Announces FY22 Notice of Funding Opportunity to Expedite Harmful Algal Bloom Control Technologies, NATIONAL CENTERS FOR COASTAL OCEAN SCIENCE (Sep. 20, 2022, 3:35 PM), <https://coastalscience.noaa.gov/news/noaa-announces-fy22-notice-of-funding-opportunity-to-expedite-harmful-algal-bloom-control-technologies/>.

<sup>28</sup> CAUSES OF CYANOHABS, *supra* note 24

<sup>29</sup> NATIONAL CENTERS FOR COASTAL OCEAN SCIENCE, *supra* note 27

Short-term exposure to HAB toxins during recreational activities can cause hay fever-like symptoms, skin rashes, and respiratory and gastrointestinal distress.<sup>30</sup> Ingestion of drinking water with elevated concentrations of certain of these toxins (specifically, microcystin and cylindrospermopsin) can cause liver and kidney damage.<sup>31</sup> Microcystins may also harm the reproductive system.<sup>32</sup> According to EPA, these two cyanotoxins are among the four most commonly found in Lake Erie.<sup>33</sup>

The other two cyanotoxins commonly found in Lake Erie, anatoxins and saxitoxins, can also cause serious health effects in humans and animals. Anatoxins can harm the central nervous system in humans.<sup>34</sup> And in May 2021, an epidemiologist at the Michigan Department of Health and Human Services reported that Anatoxin-A exposure sickened and killed dogs immediately after they swam in a Michigan pond.<sup>35</sup> Saxitoxins concentrate in shellfish, where they can cause Paralytic Shellfish Poisoning if ingested.<sup>36</sup>

Cyanotoxins also pose risks of deadly diseases in humans. Dr. Elijah Stommel, a neurologist at the Dartmouth-Hitchcock medical center in New Hampshire, has correlated exposure to BMAA (beta-Methylamino-L-alanine), an amino acid produced by cyanoHABs, to neurological diseases including amyotrophic lateral sclerosis (ALS).<sup>37</sup> ALS kills motor neurons in the brain and spinal cord, progressively paralyzing the body until swallowing and breathing become impossible.<sup>38</sup> Although the cause of ALS is the source of ongoing scientific investigation, Dr. Stommel has noticed that often ALS patients' homes are clustered around bodies of water containing HABs.<sup>39</sup> More generally, correlations between BMAA and neurological disease appear strong,<sup>40</sup> which is cause for serious concern in light of research suggesting that virtually all cyanobacteria species produce BMAA.<sup>41</sup>

Cyanobacteria blooms are under investigation across the country related to human health dangers, including southern Florida and Lake Tahoe, California. Physicians in South Florida

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<sup>30</sup> HEALTH EFFECTS OF CYANOTOXINS, <https://www.epa.gov/cyanoHabs/health-effects-cyanotoxins> (last visited Sep. 20, 2022).

<sup>31</sup> *Id.*

<sup>32</sup> LEARN ABOUT CYANOBACTERIA AND CYANOTOXINS, <https://www.epa.gov/cyanoHabs/learn-about-cyanobacteria-and-cyanotoxins> (last visited Sep. 20, 2022).

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

<sup>34</sup> *Id.*

<sup>35</sup> CTIC Communications, *Susan Peters – Canine Mortalities in Michigan, Water Exposure*, YOUTUBE (Mar. 9, 2021), <https://www.youtube.com/watch?v=2Hdyck82IrU&feature=youtu.be>.

<sup>36</sup> LEARN ABOUT CYANOBACTERIA AND CYANOTOXINS, *supra* note 32.

<sup>37</sup> James S. Metcalf, Maeve Tischbein, Paul Alan Cox & Elijah W. Stommel, *Cyanotoxins and the Nervous System*, TOXINS, no. 13, 660-679, 2021, at 665.

<sup>38</sup> Kathleen McAuliffe, *Are Toxins in Seafood Causing ALS, Alzheimer's, and Parkinson's?*, DISCOVER MAGAZINE (Jul. 21, 2011), <https://www.discovermagazine.com/mind/are-toxins-in-seafood-causing-als-alzheimers-and-parkinsons>.

<sup>39</sup> Metcalf, *supra* note 37.

<sup>40</sup> McAuliffe, *supra* note 38.

<sup>41</sup> Larry E. Brand et al., *Cyanobacterial Blooms and the Occurrence of the neurotoxin beta-N-methylamino-L-alanine (BMAA) in South Florida Aquatic Food Webs*, HARMFUL ALGAE, no. 9(6), 620-635, 2010, at 621.

have noted patients presenting with lung damage caused by HABs.<sup>42</sup> Dr. Stommel; John Cassani, a conservationist; and Dr. Larry Brand, a researcher at the Rosentiel School of Marine & Atmospheric Science, all explain that cyanotoxins not only pose risks from contact and drinking water exposure, but likely spread through the air. This potential route of exposure is of significant concern because aerosols can endanger people up to a mile away from a toxin source, and toxins enter the bloodstream readily when introduced through the lungs.<sup>43</sup>

In summer 2022, a report by Dr. James Haney, a researcher at the University of New Hampshire, confirmed that microcystins, Anatoxin-A, and BMAA were present in both water *and* aerosols sampled from Lake Tahoe, and that “despite relatively small concentrations of microcystins in the Lake Tahoe water, concentrations in the air were comparable to lakes with higher productivity and lakes with higher concentrations of microcystins in the water.”<sup>44</sup> Although no epidemiological study has yet been conducted in the Tahoe area, investigation is ongoing because of local concern about shoreline communities that appear to greatly exceed the usual two-per-100,000 incidence of ALS cases in the general population.<sup>45</sup>

Regarding Lake Erie, Sherry Straub-Guess, a resident of Toledo, Ohio, explained that less than 45 days after her father unexpectedly and inexplicably passed away, she was warned not to drink her water and told that “[she] had Microcystin that was contaminating [her] drinking water.”<sup>46</sup> Although specific causation remains to be proven in various cases of lethal illness among individuals likely exposed to cyanotoxins, general causation is now well established. It is also well established that excessive algal growth adversely affects whole ecosystems by blocking light needed for native plants, such as seagrasses, to grow.<sup>47</sup> Cyanobacterial HABs, like those in Lake Erie, can pose extreme danger to human, animal, and ecosystem health. EGLE should accordingly use all available regulatory tools to contain and reduce HAB growth.

### 2. Warm water promotes HAB growth

Discharges of elevated-temperature water from Fermi 2 increases likelihood of growth and endurance of HABs. Cyanobacteria generally exhibit optimal growth at temperatures above 25°C (77°F).<sup>48</sup> Fermi 2's high-temperature thermal effluent (often above 77°F, as per *Table 1*) may be contributing to the scale and persistence of HABs in Lake Erie. For comparison, in Daya Bay, China, researchers found that “the seasonal extension of HAB was found to be connected

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<sup>42</sup> Calusa Waterkeeper, *Troubled Waters*, YOUTUBE (June 18, 2021), <https://www.youtube.com/watch?v=mWTm6vxDVaA>.

<sup>43</sup> *Id.*

<sup>44</sup> Hailey Carter and James F. Haney, *A Preliminary Investigation of Cyanobacteria Toxins in Lake Tahoe Water and Aerosols, Lake Tahoe Cyanotoxin Report: Summer 2022*, UNIVERSITY OF NEW HAMPSHIRE, 2022.

<sup>45</sup> Interview with Trish Friedman, community activist, Nov. 2022 (re: ongoing investigation of ALS cases in Lake Tahoe area); ALS (LOU GHERIG'S DISEASE), <https://www.mass.gov/info-details/als-lou-gehrigs-disease#:~:text=ALS%20is%20estimated%20to%20affect,about%20%20per%20100%2C000%20people> (last visited Nov. 14, 2022) (background rate of ALS incidence).

<sup>46</sup> Calusa Waterkeeper, *supra* note 42.

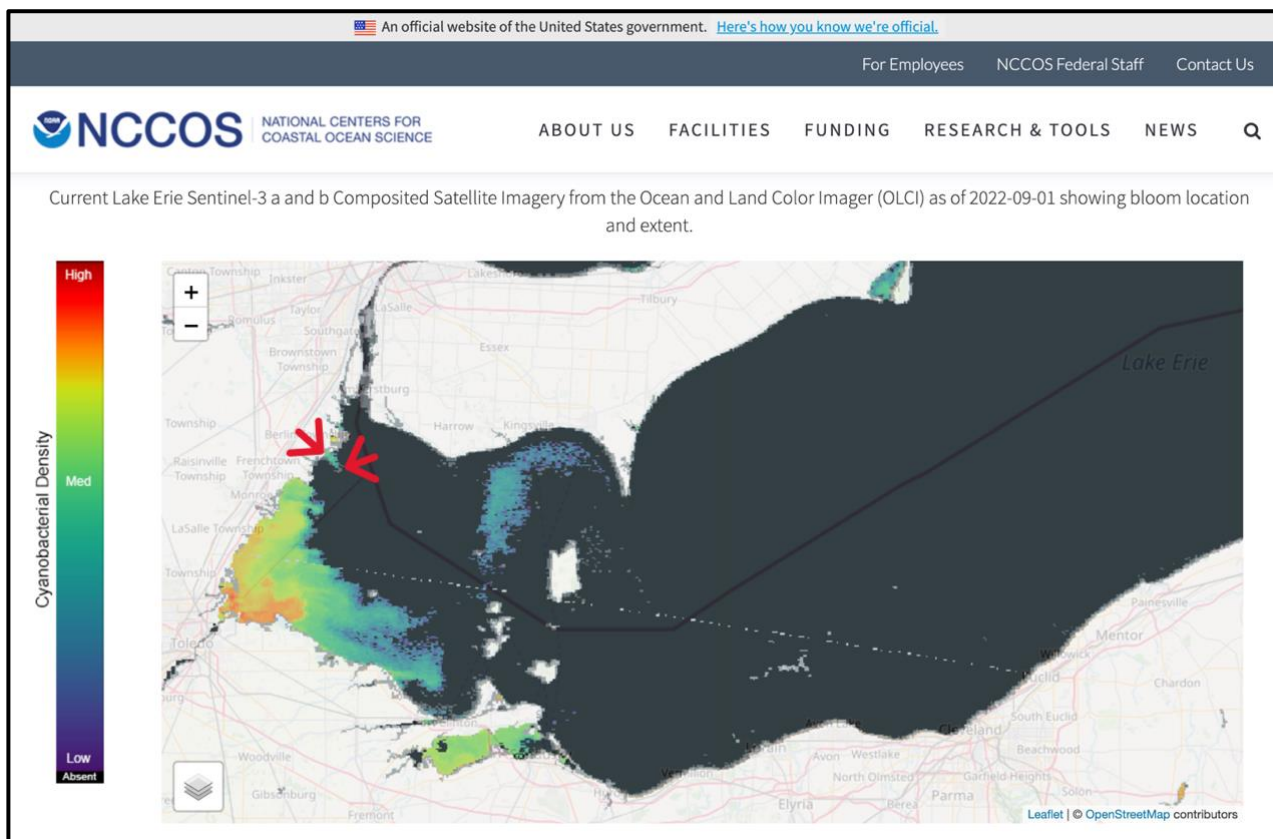
<sup>47</sup> WHAT IS NUTRIENT POLLUTION?, <https://oceanservice.noaa.gov/facts/nutpollution.html> (last visited Sep. 20, 2022).

<sup>48</sup> Hans W. Paerl and Jef Huisman, *Climate Change: A Catalyst for Global Expansion of Harmful Cyanobacterial Blooms*, ENVIRONMENTAL MICROBIOLOGY REPORTS., no. 1, 27-37, 2009, at 29.

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partially with increased water temperature resulting from the thermal discharge of nuclear power stations.<sup>49</sup>

Warmer temperatures also lead to water stratification, in which water separates into layers of varying densities, allowing buoyant cyanobacteria with gas vesicles to float upwards and gain better access to sunlight for photosynthesis than their non-buoyant algal counterparts.<sup>50</sup> In a problematic feedback loop, algal blooms absorb sunlight, which further increases water stratification, and promotes additional blooms.<sup>51</sup> Warmer global temperatures, reduced ice cover, and intense precipitation events caused by climate change all favor cyanobacteria growth and extend annual bloom duration.<sup>52</sup> These facts simply underscore the importance of limiting additional heat inputs to a vulnerable ecosystem. HABs forming in the Fermi 2 mixing zone pose an increased risk of increasing HAB growth in Lake Erie.



<sup>49</sup> Jing Yu et al., *Response of Harmful Algal Blooms to Environmental Changes in Daya Bay, China*, 18 TERRESTRIAL, ATMOSPHERIC, AND OCEANIC SCIS., no. 5, 1011-1027, Dec. 2007, at 1012.

<sup>50</sup> *Algal Blooms*, GLISA: A NOAA RESEARCH TEAM (last visited Sep. 20, 2022) <https://glisa.umich.edu/resources-tools/climate-impacts/algal-blooms/>.

<sup>51</sup> CLIMATE CHANGE AND HARMFUL ALGAL BLOOMS, <https://www.epa.gov/nutrientpollution/climate-change-and-harmful-algal-blooms> (last visited Sep. 20, 2022).

<sup>52</sup> INTERNATIONAL JOINT COMMISSION, A BALANCED DIET FOR LAKE ERIE: REDUCING PHOSPHOROUS LOADINGS AND HARMFUL ALGAL BLOOMS. REPORT OF THE LAKE ERIE ECOSYSTEM PRIORITY (Feb. 12, 2014), <https://legacyfiles.ijc.org/publications/2014%20IJC%20LEEP%20REPORT.pdf>.

**Figure 3.** *The red arrows indicate the location of Fermi 2 and a patch of cyanobacterial growth near the plant distinct from the larger Lake Erie HAB.*<sup>53</sup>

### 3. *Limiting thermal pollution from Fermi 2 would help mitigate local HABs*

Although many factors contribute to HAB formation, limiting the temperature of Fermi 2's nutrient-laden thermal effluent will reduce local water temperature in the vicinity of the plant, and the corresponding risk of increased HAB growth. Reducing HABs is particularly important in Lake Erie, the Great Lake most impacted by HABs due to its shallow depth, warm surface temperatures, and proximity to agricultural land and associated nutrient runoff.<sup>54</sup> ELGE has accordingly recognized the Lake's vulnerability for nearly a decade: In 2014, EGLE listed Lake Erie waters as "impaired" pursuant to CWA § 303(d), due to the increase in HABs.<sup>55</sup> The 2011 bloom that led to the impaired designation was the largest HAB on record in Lake Erie—only to be eclipsed by the 2015 HAB.<sup>56</sup>

HABs are most prevalent in the southwest end of Lake Erie. A Lake Erie bloom last year extended from Point Mouillee in Michigan to Port Clinton in Ohio, with the highest cyanobacterial concentrations between Monroe, MI (where Fermi 2 discharges) and Maumee Bay.<sup>57</sup> Although shallower, warmer waters and wind patterns contribute to the southwestern location of HABs in Lake Erie, the gap between the larger southwestern bloom and the smaller wisp that extends out into the Lake from Monroe County suggests that Fermi 2's effluent discharge may contribute to bloom growth. Satellite images demonstrate a local patch of cyanobacteria growth near Fermi 2 that is distinct from the larger western Lake Erie basin bloom, as seen in Figure 3 above.

At ground level, HABs are readily visible on Swan Creek even in late fall, indicating their persistence in proximity to the Fermi 2 reactor, as seen in the EGLE photo below.

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<sup>53</sup> NCCOS LAKE ERIE SATELLITE IMAGERY, CURRENT LAKE ERIE SENTINEL-3 A AND B COMPOSITED SATELLITE IMAGERY FROM THE OCEAN AND LAND COLOR IMAGER (OLCI) AS OF 2022-09-01 SHOWING BLOOM LOCATION AND EXTENT, <https://coastalscience.noaa.gov/research/stressor-impacts-mitigation/hab-forecasts/lake-erie/satellite-imagery/> (last visited Sep. 9, 2022).

<sup>54</sup> GLISA: A NOAA RESEARCH TEAM, *supra* note 50.

<sup>55</sup> See MICH. DEP'T. OF ENV'T., GREAT LAKES, AND ENERGY, WATER RES. DIV., WATER QUALITY AND POLLUTION CONTROL IN MICHIGAN 2022, Sections 303(d), 305(b), and 314 Integrated Report (May 2022) at 68.

<sup>56</sup> GLISA: A NOAA RESEARCH TEAM, *supra* note 50 (red arrows added).

<sup>57</sup> *Lake Erie Harmful Algal Bloom Forecast*, NATIONAL CENTERS FOR COASTAL OCEAN SCIENCE (last visited Sep. 20, 2022) <https://coastalscience.noaa.gov/research/stressor-impacts-mitigation/hab-forecasts/lake-erie/>.



**Figure 4.** Algal blooms (light green patches) visible in Swan Creek, Monroe County, November 2022.<sup>58</sup> Outfalls 009 and 011 from Fermi 2 discharge into Swan Creek.

Bloom growth directly and adversely affects local residents. In what would normally have been peak season for recreational swimming, in 2022 the Monroe County Health Department issued a whole-body contact advisory for Sterling State Park that lasted from July 29 to August 16.<sup>59</sup> Sterling State Park is just south of Fermi 2. The advisory was lifted once cyanobacteria levels fell back below levels of concern, but an advisory remained in effect for Luna Pier Beach, which is across Brest Bay from Fermi 2.<sup>60</sup> This correlation suggests that Fermi 2 effluent is a factor contributing to formation of HABs.

Including thermal limits in the Fermi 2 NPDES permit is long overdue. When, in 2016, the NRC prepared a supplemental environmental impact statement in response to DTE's application for Fermi 2 license renewal,<sup>61</sup> knowledgeable local commenters expressed serious concern over the absence of thermal limits in the plant's permit. As Sandra Bihn, Executive Director of Lake Erie Waterkeeper,<sup>62</sup> explained:

About 500,000 people who are provided drinking water by the City of Toledo were told not to drink the water because the toxin microcystin exceeded World Health Organization drinking water standards... . Before relicensing, there needs

<sup>58</sup> MICH. DEP'T. OF ENV'T., GREAT LAKES, AND ENERGY, MIENVIRO PORTAL, <https://mienviro.michigan.gov/nsite/map/help/detail/3960280954289938217/documents> (last visited Nov. 9, 2022).

<sup>59</sup> Monroe News Staff Report, *Suspected Algal Bloom in Lake Erie; Monroe County Health Department Makes Recommendations*, The Monroe News (Jul. 29, 2022), <https://www.monroenews.com/story/news/2022/07/29/suspected-algal-bloom-reported-western-basin-lake-erie/10173570002/>.

<sup>60</sup> Monroe News Staff Report, *"Whole Body Contact" Advisory Lifted for Sterling State Park; Algae Cyanobacteria Has Subsided*, The Monroe News (Aug. 17, 2022), <https://www.monroenews.com/story/news/2022/08/16/bathing-beach-advisory-lifted-sterling-state-park/10344308002/>.

<sup>61</sup> U.S. NUCLEAR REGUL. COMM'N., NUREG-1437, SUPPLEMENT 56, VOL. 1, GENERIC ENV'L. IMPACT STATEMENT FOR LICENSE RENEWAL OF NUCLEAR PLANTS REGARDING FERMI 2 NUCLEAR POWER PLANT, xxi (Sep. 2016).

<sup>62</sup> Sandra Bihn, PUBLIC SUBMISSION, COMMENT ON: NRC-2014-0109-0003 DTE ELECTRIC CO., FERMI 2; NOTICE OF INTENT TO PREPARE AN ENVIRONMENTAL IMPACT Statement (Sep. 3, 2014).

to be an assessment of whether or not the thermal discharge mixing zone algae creation is contributing to a larger bloom of harmful algae—cyanobacteria—and/or if the thermal discharge contributes to an increased amount of microcystin released in the water.<sup>63</sup>

The NRC noted that public interest in HABs, and the possible role of higher temperatures in exacerbating them, constituted “new information that the GEIS [Generic Environmental Impact Statement] had not considered.”<sup>64</sup> More generally, the NRC noted that:

[H]eated discharge from cooling system operations can result in the presence of thermophilic microorganisms, such as enteric pathogens, thermophilic fungi, bacteria, and the free living amoeba. The presence of these microorganisms could result in adverse effects to the health of nuclear power plant workers in plants that use cooling towers and to the health of the public where thermal effluents discharge into cooling ponds, lakes, canals, or rivers.<sup>65</sup>

Against this factual backdrop, the NRC nonetheless minimized the importance of the omission of thermal limits from Fermi 2's NPDES permit. While acknowledging that the permit did not impose such limits, the agency emphasized that the discharge temperature to the Lake is typically no higher than 18 °F (10 °C) above that of the intake water.<sup>66</sup> Unmentioned, however, was that this temperature difference is 6°C *more* than the temperature difference found to cause increased HAB growth near a nuclear power plant outfall in Daya Bay, China.<sup>67</sup>

Although NRC likewise acknowledged research finding that high-temperature discharges likely exacerbate algal blooms in Lake Erie specifically, it largely dismissed public concern. The agency stated: “Fermi 2 discharge water is warmer and may contain somewhat higher concentrations of nitrogen and phosphorus compounds than the ambient Lake Erie water, *but the affected area would be limited* due to the mixing and diffusion of the discharge water with lake water.”<sup>68</sup> This conclusion ignores the degree to which the mixing zone itself is affected by heated nuclear plant effluent; the effects of even localized warming on near-shore HABs in a shallow basin; and the EPA regulatory prohibition on authorizing mixing zones where pollutant concentrations “cause significant human health risks.”<sup>69</sup>

Moreover, in each month at Fermi 2's Outfall 001, for at least 15 days of the month the intake temperature was below 77 °F, but the effluent temperature exceeded 77 °F. Fermi 2's

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<sup>63</sup> U.S. NUCLEAR REGUL. COMM'N., NUREG-1437, SUPPLEMENT 56, VOL. 2, GENERIC ENV'L. IMPACT STATEMENT FOR LICENSE RENEWAL OF NUCLEAR PLANTS REGARDING FERMI 2 NUCLEAR POWER PLANT, A-10, Comment 004-U-1 (Sep. 2016).

<sup>64</sup> U.S. NUCLEAR REGUL. COMM'N., *supra* note 61 at 4-86.

<sup>65</sup> U.S. NUCLEAR REGUL. COMM'N., *supra* note 63 at A-10.

<sup>66</sup> U.S. NUCLEAR REGUL. COMM'N., *supra* note 61 at 3-9.

<sup>67</sup> Jing Yu et al., *Response of Harmful Algal Blooms to Environmental Changes in Daya Bay, China*, 18 TERRESTRIAL, ATMOSPHERIC, AND OCEANIC SCIS., no. 5, 1011-1027, Dec. 2007, at 1024.

<sup>68</sup> U.S. NUCLEAR REGUL. COMM'N., NUREG-1437, SUPPLEMENT 56, VOL. 2, GENERIC ENV'L. IMPACT STATEMENT FOR LICENSE RENEWAL OF NUCLEAR PLANTS REGARDING FERMI 2 NUCLEAR POWER PLANT, A-318 (Sep. 2016) (emphasis added).

<sup>69</sup> See also 40 C.F.R. § 131.13; ENV'L. PROT. AGENCY, WATER QUALITY STANDS. HANDBOOK, § 5.1.1.

effluent thus regularly elevated at least some water in the area to the ideal temperature for HAB growth, which is 77 °F or greater.<sup>70</sup> The whole-body contact advisory for Sterling State Park due to HABs, which is in close proximity to Fermi 2, makes clear that mitigation of temperatures even within the local mixing zone is important for protecting residents from excessive growth of local HABs. EGLE should include thermal limits in Fermi 2's NPDES permit to ensure that the plant's effluent does not exacerbate local HAB growth.

C. Thermal limits in nuclear plant permits are feasible

*1. EGLE has imposed a thermal limit on the other Great Lakes nuclear plant it regulates*

Imposing a thermal limit on Fermi 2's wastewater discharge is not only legally required and ecologically essential, it is feasible and indeed common for nuclear plants. EGLE set a limit on heat addition from the effluent of the only other nuclear power generating facility in Michigan that discharges into the Great Lakes, the Donald C. Cook Nuclear Plant, on the shores of Lake Michigan.<sup>71</sup>

The Cook power plant's NPDES permit for 2014-18 imposed a "heat addition" limit of "17,300 MBTU/Hr" (thousand international British thermal units per hour) for total power plant discharge.<sup>72</sup> Although the MBTU/Hr metric is a measure of the power emanating from the effluent discharge rather than of the effluent's raw temperature, it is nonetheless a form of thermal limit on nuclear plant discharge. The Cook plant permit demonstrates that ELGE can impose, and has imposed, such limits.

*2. Regulators in Wisconsin, New York, and Canada have imposed thermal limits on Great Lakes nuclear plants*

In marked contrast to Fermi 2, most nuclear power facilities on the Great Lakes have thermal discharge limits. Facilities on Lake Michigan, Lake Huron, and Lake Ontario all have discharge limits. The Point Beach Nuclear Plant in Two Rivers, Wisconsin, on the shores of

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<sup>70</sup> Hans W. Paerl and Jef Huisman, *Climate Change: A Catalyst for Global Expansion of Harmful Cyanobacterial Blooms*, ENVIRONMENTAL MICROBIOLOGY REPORTS., no. 1, 27-37, 2009, at 29.

<sup>71</sup> Moreover, the Turkey Point power plant in Homestead, Florida was forced to discontinue its discharge into the Biscayne Bay after a federal court judge issued an order prohibiting the discharge of heated water into Biscayne Bay and other navigable waters near Turkey Point. The judge based his order on evidence demonstrating ongoing and pervasive biological damage to Biscayne Bay caused by the thermal pollution being emitted from the plant. TURKEY POINT 3 & 4 COOLING TOWER RETROFIT IS FEASIBLE AND COST-EFFECTIVE, NUCLEAR REGULATORY COMMISSION (March 2018). <https://www.nrc.gov/docs/ML1818/ML18187A030.pdf>

<sup>72</sup> Permit No. MI0005827, STATE OF MICH. DEP'T OF ENV'T QUALITY, AUTHORIZATION TO DISCHARGE UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM, INDIANA MICHIGAN POWER COMPANY 1 (Aug. 26, 2014). There is little publicly available information about the facility on MiEnviro Portal, and it is difficult to determine whether this permit has been renewed.



## Citizens' Resistance at Fermi Two

Lake Michigan, has a “heat addition” limit of 17,300 MBTU/Hr for total power plant discharge.<sup>73</sup>

New York has likewise imposed thermal limits on nuclear plants along the Great Lakes. The R. E. Ginna Nuclear Power Plant in Ontario, New York, on the shores of Lake Ontario, has multiple thermal limits in its permit. It cannot exceed an instantaneous daily maximum liquid effluent discharge of 106° F.<sup>74</sup> When water intake temperature is greater than 45° F, the plant difference between intake and discharge temperatures cannot exceed 25° F.<sup>75</sup> When water intake temperature is less than or equal to 45° F, this difference cannot exceed 35° F.<sup>76</sup>

The two-unit Nine Mile Point Nuclear Station in Scriba, New York, on the shores of Lake Ontario, has similarly structured thermal limits in its permit.<sup>77</sup> The permit imposes an instantaneous daily maximum thermal liquid effluent temperature limit of 115° F for Unit 1, and 110° F for Unit 2.<sup>78</sup> The permit also limits, on a year-round basis, the average temperature difference between intake and discharge temperatures. Such difference cannot exceed 35° F for Unit 1, and 30° F for Unit 2.<sup>79</sup>

The James A. FitzPatrick Nuclear Power Plant, also in Scriba, has a permit limit on its instantaneous daily maximum thermal liquid effluent temperature of 106° F.<sup>80</sup> Year-round, the

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<sup>73</sup> The plant holds permit number 0000957, with its facility name listed as “NextEra Energy Point Beach LLC.” STATE OF WISC. DEP’T OF NAT. RES., WPDES PERMIT: NEXTERA POINT BEACH LLC 6 (July 1, 2016). This permit became effective on July 1, 2016, and expired on June 30, 2021. According to WIDNR, there is a new draft permit in progress. *Id.*

<sup>74</sup> The plant’s wastewater is currently regulated by permit NY0000493. N.Y. STATE DEP’T OF ENV’T CONSERVATION, STATE POLLUTION DISCHARGE ELIMINATION SYSTEM DISCHARGE PERMIT, R. E. GINNA NUCLEAR POWER PLANT 4 (Feb. 15, 2012), [https://www.dec.ny.gov/data/IF/SPDES/NY0000493/Permit.IndSPDES.NY0000493.2012-02-15.Modification\\_x.pdf](https://www.dec.ny.gov/data/IF/SPDES/NY0000493/Permit.IndSPDES.NY0000493.2012-02-15.Modification_x.pdf). This permit was issued in 2010, was renewed in 2010, and expired on December 31, 2019; it has been administrative continued until it receives a full technical review. N.Y. STATE DEP’T OF ENV’T CONSERVATION, STATE POLLUTION DISCHARGE ELIMINATION SYSTEM DISCHARGE PERMIT, R. E. GINNA NUCLEAR POWER PLANT (July 21, 2014), [https://www.dec.ny.gov/data/IF/SPDES/NY0000493/Permit.IndSPDES.NY0000493.2015-01-01.AdmRenewal\\_x.pdf](https://www.dec.ny.gov/data/IF/SPDES/NY0000493/Permit.IndSPDES.NY0000493.2015-01-01.AdmRenewal_x.pdf)

<sup>75</sup> N.Y. STATE DEP’T OF ENV’T CONSERVATION, STATE POLLUTION DISCHARGE ELIMINATION SYSTEM DISCHARGE PERMIT, R. E. GINNA NUCLEAR POWER PLANT 4 (Feb. 15, 2012), [https://www.dec.ny.gov/data/IF/SPDES/NY0000493/Permit.IndSPDES.NY0000493.2012-02-15.Modification\\_x.pdf](https://www.dec.ny.gov/data/IF/SPDES/NY0000493/Permit.IndSPDES.NY0000493.2012-02-15.Modification_x.pdf)

<sup>76</sup> *Id.*

<sup>77</sup> The plant’s wastewater is currently regulated by permit NY0001015. N.Y. STATE DEP’T OF ENV’T CONSERVATION, STATE POLLUTION DISCHARGE ELIMINATION SYSTEM DISCHARGE PERMIT, NINE MILE POINT NUCLEAR POWER PLANT (Sept. 29, 2009), [https://www.dec.ny.gov/data/IF/SPDES/NY0001015/Permit.IndSPDES.NY0001015.2009-12-01\\_x.pdf](https://www.dec.ny.gov/data/IF/SPDES/NY0001015/Permit.IndSPDES.NY0001015.2009-12-01_x.pdf). This permit was issued in 2009, renewed in 2014, and expired Nov. 20, 2019; it has been administrative continued until it receives a full technical review. N.Y. STATE DEP’T OF ENV’T CONSERVATION, STATE POLLUTION DISCHARGE ELIMINATION SYSTEM DISCHARGE PERMIT, NINE MILE POINT NUCLEAR POWER PLANT (June 23, 2014), [https://www.dec.ny.gov/data/IF/SPDES/NY0001015/Permit.IndSPDES.NY0001015.2014-12-01.AdmRenewal\\_x.pdf](https://www.dec.ny.gov/data/IF/SPDES/NY0001015/Permit.IndSPDES.NY0001015.2014-12-01.AdmRenewal_x.pdf)

<sup>78</sup> N.Y. STATE DEP’T OF ENV’T CONSERVATION (Sept. 29, 2009), *supra* note 77.

<sup>79</sup> *Id.*

<sup>80</sup> The plant’s wastewater is currently regulated by permit NY0020109. N.Y. STATE DEP’T OF ENV’T CONSERVATION, STATE POLLUTION DISCHARGE ELIMINATION SYSTEM DISCHARGE PERMIT, JAMES A. FITZPATRICK NUCLEAR POWER PLANT (May 24, 2013), [https://www.dec.ny.gov/data/IF/SPDES/NY0001015/Permit.IndSPDES.NY0001015.2009-12-01\\_x.pdf](https://www.dec.ny.gov/data/IF/SPDES/NY0001015/Permit.IndSPDES.NY0001015.2009-12-01_x.pdf). This permit became effective on in 2008 and expired on July 31, 2013; it has been administrative continued until it receives a full technical review. *State Pollutant Discharge Elimination System permit renewals*,

permit imposes an average temperature difference limit between intake and discharge temperatures of 32.4° F.<sup>81</sup> Importantly, this Great Lakes facility (and only this facility) comprises the same type of reactor and containment as the Fermi plant (a Boiling Water Reactor), demonstrating the practicability of imposing limits of this type on Fermi 2.

Canadian regulators have likewise imposed thermal limits on Great Lakes nuclear plants, including the two-unit Bruce Nuclear Generating Station in Tiverton, Ontario, Canada, on the shores of Lake Huron. The permit's limits Unit A to a 24-hour average temperature of 94.1°F from June 15 to September 30, and 89.96°F from October 1 to June 14.<sup>82</sup> Both Unit A and Unit B also have a daily temperature difference limit. Unit A has a daily temperature difference limit of 23.4°F from December 15 to April 14, and a limit of 19.98°F from April 15 to December 14.<sup>83</sup> Unit B has a daily temperature difference limit of 23.4°F from December 15 to April 14, and 19.8°F from April 15 to December 14.<sup>84</sup>

The Pickering Nuclear Generating Station on the Canadian side of Lake Ontario has a 24-hour temperature limit of 96.8°F from July 1 to October 31, and 89.6°F from November 1 to June 30.<sup>85</sup> It also has a year-round daily temperature difference limit of 19.8°F.<sup>86</sup>

The wastewater discharge permits for the Point Beach, R.E. Ginna, Nine Mile Point, FitzPatrick, Bruce, and Pickering facilities demonstrate that thermal effluent discharge limitations are commonplace across the Great Lakes. EGLE would be breaking no new regulatory ground in imposing such limits on the Fermi 2 reactor; it would simply be raising the antiquated plant to the permitting level of its peer facilities.

3. *It is anomalous and nonsensical for permits to omit thermal limits on effluent discharge to the most impaired Great Lake*

Problematically, all three nuclear facilities on Lake Erie—Fermi 2 in Michigan, and the Davis-Besse Nuclear Power station and Perry Nuclear Power Plant in Ohio—lack thermal limits. This omission points to a wider thermal pollution issue on the Great Lake with the worst algal blooms and a formal designation of water quality “impairment.”

The current permit for the Davis-Besse Nuclear Power Station in Oak Harbor, Ohio, on the shores of Lake Erie, contains no thermal limits.<sup>87</sup> The Perry Nuclear Power Plant in Perry,

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*reviews, and municipal application updates*, N.Y. STATE DEP'T OF ENV'T CONSERVATION (Oct. 7, 2021), [https://www.dec.ny.gov/docs/water\\_pdf/renewalsmodspres.pdf](https://www.dec.ny.gov/docs/water_pdf/renewalsmodspres.pdf) (info on administrative renewal process accessible on slides 7 and 11. The class number of each New York nuclear facility is located in the applicable NPDES permit.).

<sup>81</sup> N.Y. STATE DEP'T OF ENV'T CONSERVATION (May 24, 2013), *supra* note 80.

<sup>82</sup> BRUCE POWER, APPENDICES FOR BRUCE POWER 2022 ENVIRONMENTAL QUANTITATIVE RISK ASSESSMENT 795 (June 2022), <https://www.brucepower.com/wp-content/uploads/2022/10/BP-REP-03443.pdf>

<sup>83</sup> *Id.*

<sup>84</sup> *Id.*

<sup>85</sup> MINISTRY OF THE ENV'T, CONSERVATION AND PARKS, AMENDED ENVIRONMENTAL COMPLIANCE APPROVAL NO. 1859-C5AKBZ at 32 (June 28, 2022), <https://ero.ontario.ca/notice/019-5391>.

<sup>86</sup> *Id.*

<sup>87</sup> The plant's wastewater is currently regulated by permit OH0003786. OHIO ENV'T PROT. AGENCY, AUTHORIZATION TO DISCHARGE UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (DAVIS-

Ohio, also has none.<sup>88</sup> However, the permit's general effluent limitations do include a prohibition on any effluent conducive to the growth of algae that is in some way a nuisance.<sup>89</sup>

The lack of express limitation on thermal discharges at the Fermi 2, Davis-Besse, and Perry plants point to a pattern of under-regulation on Lake Erie. While warm discharge temperatures are *measured* at all facilities (pursuant to a variety of permit-specific protocols), there is no meaningful system in place to *control* thermal pollution from nuclear reactor wastewater discharges to Lake Erie.

HABs are of high and ever-increasing national concern, with correspondingly high investment in research. In the last decade alone, the U.S. has spent about \$200 million tracking blooms, identifying causes, and tracing sources.<sup>90</sup> Although quantification of the degree to which industrial discharge of millions of gallons per day of heated nuclear plant effluent promotes algal blooms must await further investigation, there is ample basis for restricting such known-harmful discharges now. Monitoring Lake Erie for toxins, mitigating blooms, and disposing of toxic waste products at Western Lake Erie treatment plants alone currently averages \$262 million *annually*.<sup>91</sup> For these reasons, EGLE should include numeric limits on absolute discharge temperature, and limits on the differential between intake and effluent water temperature in Fermi 2's NPDES permit.

#### D. Comprehensive thermal discharge monitoring and reporting is essential.

In addition to thermal discharge limits, EGLE should require significantly more robust thermal discharge monitoring and reporting CRAFT urges EGLE to look to the comprehensive monitoring and reporting scheme at the Bruce nuclear facility in Ontario, Canada, as a model.

The Bruce facility monitors lake water temperatures at 74 sites.<sup>92</sup> It also sets its temperature limits based on guidance from numerous sources, including federal, provincial, and scientific recommendations.<sup>93</sup> The Bruce Facility's Appendix to its June 2022 Environmental

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BESSE) (Mar. 28, 2018), <http://wwwapp.epa.ohio.gov/dsw/permits/doc/2IB00011.pdf>. This permit is valid until April 30, 2023. *Id.*

<sup>88</sup> The station's wastewater is regulated by its 2018 NPDES permit. The permit denotes no numerical thermal effluent temperature limits. OHIO ENV'T PROT. AGENCY, AUTHORIZATION TO DISCHARGE UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (PERRY) (Feb. 15, 2018).

<https://www.nrc.gov/docs/ML1807/ML18071A042.pdf>. The permit is valid until February 28, 2023.

<sup>89</sup> OHIO ENV'T PROT. AGENCY, AUTHORIZATION TO DISCHARGE UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (PERRY) at 22 (Feb. 15, 2018), <https://www.nrc.gov/docs/ML1807/ML18071A042.pdf>

<sup>90</sup> Kieth Schneier, *In a Year of Water Quality Reckoning, National Imperative is Impeded*, CIRCLE OF BLUE (Sep. 15, 2022), <https://www.circleofblue.org/2022/world/in-a-year-of-water-quality-reckoning-national-imperative-is-impeded/>.

<sup>91</sup> Laura Gersony, *Lake Erie's Failed Algae Strategy Hurts Poor Communities the Most: Algae Blooms are Hiking the Cost of Water for People Already Struggling to Pay their Bills*, CIRCLE OF BLUE (Sep. 20, 2022), <https://www.circleofblue.org/2022/world/lake-eries-failed-algae-strategy-hurts-poor-communities-the-most/>.

<sup>92</sup> BRUCE POWER, APPENDICES FOR BRUCE POWER 2022 ENVIRONMENTAL QUANTITATIVE RISK ASSESSMENT 801-02 (June 2022), <https://www.brucepower.com/wp-content/uploads/2022/10/BP-REP-03443.pdf>.

<sup>93</sup> BRUCE POWER, UNDERSTANDING BRUCE POWER'S ENVIRONMENTAL PROTECTION PROGRAM 16-18 (2019), [https://www.brucepower.com/wp-content/uploads/2020/01/190330A-Environment-Protection-Report\\_LR.pdf](https://www.brucepower.com/wp-content/uploads/2020/01/190330A-Environment-Protection-Report_LR.pdf).

Quantitative Risk Assessment provides nearly 200 pages of detailed information regarding its thermal effluent monitoring and mitigation regime.<sup>94</sup>

The Bruce facility provides information about environmental reporting directly on its website, including information about its thermal effluent discharges, the limits it self-imposes, and the many sources of those limits.<sup>95</sup> Bruce Power's Environmental Protection Program details its in-depth internal processes and systems for thermal monitoring.<sup>96</sup> It also includes clear, concise, and thoughtful information about the effects of thermal emissions, and provides a map of temperature measurements.<sup>97</sup>

Detailed monitoring and reporting should be required for Fermi 2, a plant in the shallow, already-degraded western basin of Lake Erie, where there is a compelling need for further data on and mitigation of HABs. Requiring more comprehensive monitoring and reporting of Fermi 2's effluent would enable EGLE to more accurately assess the facility's impact on the environment. Fuller reporting, in a form readily accessible to the public, would also promote public trust by allowing those affected by polluting facilities to easily locate the relevant data that reflects and explains their lived experience of lake degradation.

## **II. EGLE Should Regulate Radionuclide Discharges Indirectly.**

### **A. Radionuclide releases could contaminate local drinking water**

Exposure to radionuclides is widely understood to elevate cancer risk. CRAFT and other local citizen groups are thus gravely concerned about the potential for both catastrophic and routine releases of radioactive elements from the nuclear reactors on Lake Erie's shores. As to liquid effluent releases, CRAFT's foremost concern is Lake Erie's status as a source of drinking water.<sup>98</sup> EPA has found that "long-term exposure to radionuclides in drinking water may cause cancer."<sup>99</sup> Consumption of fish from Lake Erie provides another and additive route of potential human exposure to radionuclides.

CRAFT's objection to radiological contamination of Lake Erie, and its corresponding desire for proper regulation of radiological releases from Fermi 2, is well founded. On Christmas

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<sup>94</sup> BRUCE POWER, APPENDICES FOR BRUCE POWER 2022 ENVIRONMENTAL QUANTITATIVE RISK ASSESSMENT 793 - 971 (June 2022), <https://www.brucepower.com/wp-content/uploads/2022/10/BP-REP-03443.pdf>.

<sup>95</sup> *Environment and Sustainability*, BRUCE POWER, <https://www.brucepower.com/in-the-community/community-programs/environment-sustainability-department/> (last visited Nov. 21, 2022).

<sup>96</sup> BRUCE POWER, UNDERSTANDING BRUCE POWER'S ENVIRONMENTAL PROTECTION PROGRAM 36-38 (2019), [https://www.brucepower.com/wp-content/uploads/2020/01/190330A-Environment-Protection-Report\\_LR.pdf](https://www.brucepower.com/wp-content/uploads/2020/01/190330A-Environment-Protection-Report_LR.pdf)

<sup>97</sup> *Id.*

<sup>98</sup> See e.g., Michigan Radio Newsroom, "Groups say Fermi 2 nuclear plant license shouldn't be renewed," Nov. 20, 2014 (<https://www.michiganradio.org/environment-science/2014-11-20/groups-say-fermi-2-nuclear-plant-license-shouldnt-be-renewed>).

<sup>99</sup> EPA Guide, Radionuclides in Drinking Water: A Small Entity Compliance Guide, 2002 (<https://www.epa.gov/sites/default/files/2015-06/documents/compliance-radionuclidesindw.pdf>).

## Citizens' Resistance at Fermi Two

Day 1993, a fire erupted at Fermi 2 following the failure of a turbine.<sup>100</sup> As a result, approximately 500,000 gallons of water filled the basement of the turbine building, and another 500,000 gallons filled Fermi 2's Condensate Storage Tank. Officials from states bordering Lake Erie submitted letters to the NRC chairman expressing concern as to how the contaminated water would be released.<sup>101</sup> The NRC nonetheless approved a release of roughly 1.5 million gallons of contaminated water into Lake Erie from February 24 to March 16, 1994.<sup>102</sup> Notwithstanding the NRC's primacy in regulating radionuclide releases (pursuant to the Atomic Energy Act), the CWA provides EGLE with authority to minimize release of radionuclides in liquid effluent, as described below.

DTE typically releases radionuclides as air pollutants. However, radionuclide releases from Fermi 2 in their effluent has the potential to contaminate drinking water. The existing NPDES permit for Fermi 2 acknowledges this potential and yet still authorizes release of radioactive contamination to Lake Erie. This pollution is authorized pursuant to permit conditions allowing Fermi 2 to discharge effluent as "processed radwaste water" to Lake Erie through Outfall 001.<sup>103</sup>

Under NRC regulations, Fermi 2 must calculate potential radiation doses to members of the public from any effluent releases. Fermi 2's most recent Effluent Report explains that exposure pathways must account for the possibility that individuals will consume drinking water that contains radioactivity. This Report is understandably alarming to local residents. Human ingestion of any radioactive elements in drinking water would be wholly involuntary; would likely be unknowing; and, irrespective of the risk thresholds deemed acceptable by regulators, would be risk-enhancing. As explained by the federal Centers for Disease Control, "[T]here is no safe level of exposure to a carcinogen."<sup>104</sup>

To calculate potential human exposure to radionuclides from its wastewater, Fermi 2 samples drinking water at the Monroe Water Station (1.1 miles from the reactor), and at Great Lakes Water Authority (18.5 miles from the reactor) as a control.<sup>105</sup> Automatic samplers collect drinking water hourly, and samples are analyzed monthly for gross beta, strontium-89/90, and gamma-emitting radionuclides; samples are also analyzed quarterly for tritium.<sup>106</sup>

Fermi 2's site-specific Offsite Dose Calculation Manual (ODCM) limits doses to members of the public from the release of radioactive materials in liquid effluents.<sup>107</sup> Fermi 2's

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<sup>100</sup> Hopper and Associates Engineering, "Fermi 2 Turbine Failure Post Event Earthquake Instrumentation Data Evaluation," August, 1994. (<https://www.nrc.gov/docs/ML2007/ML20076J583.pdf>)

<sup>101</sup> David Lochbaum, "One Million-plus Gallon Drop in the Lake," April, 2022. (<https://static1.squarespace.com/static/602ad496d6914a529eefcf66/t/62702f82f3141b2304797fd7/1651519365102/Xmas1993+accident.pdf>)

<sup>102</sup> *Id.*

<sup>103</sup> Fermi's 2022 NPDES permit renewal application.

<sup>104</sup> NIOSH, *Occupational Cancer—NIOSH Chemical Carcinogen Policy* (June 5, 2014), (<https://www.cdc.gov/niosh/topics/cancer/policy.html>) (emphasis added).

<sup>105</sup> DTE Electric Company, "Annual Radioactive Effluent Release Report and Radiological Environmental Operating Report," Apr. 29, 2022 at 10-12 (<https://www.nrc.gov/docs/ML2211/ML22119A115.pdf>).

<sup>106</sup> *Id.* at 10 (<https://www.nrc.gov/docs/ML2211/ML22119A115.pdf>).

<sup>107</sup> DTE Electric Company, "Annual Radioactive Effluent Release Report and Radiological Environmental Operating Report," Apr. 29, 2022 (<https://www.nrc.gov/docs/ML2211/ML22119A115.pdf>).

ODCM “requires that quarterly and annual cumulative dose due to liquid effluents be determined at least once per 31 days.”<sup>108</sup> Calculating these doses involves accounting for “radioactive material releases to the lake, the subsequent transport and dilution in the exposure pathways, and the resultant individual uptake.”

Fermi 2's 2021 Effluent Report explains that:

At Fermi 2, pre-operational evaluation of radiation exposure pathways indicated that doses from consumption of fish from Lake Erie provided the most conservative estimate of doses from releases of radioactive liquids. However, with the proximity of the intakes for the City of Monroe and Frenchtown Township, it must be assumed that individuals will consume drinking water as well as fish that might contain radioactivity from discharges into Lake Erie.

As a result, drinking water exposure pathways are also considered in the equation used to calculate “acceptable” exposure doses.<sup>109</sup>

If Fermi 2's projected doses for members of the public for any 31-day period would exceed certain limits (0.06 millirems to the total body, or 0.2 millirems to any organ), the reactor must use a Liquid Radioactive Waste Processing System to ensure liquid waste meets the “as low as reasonably achievable” (ALARA) legal requirement before it is released.<sup>110</sup> Notably, the ALARA standard is a technological rather than health-based standard. The standard reflects what quantity of radioactivity is “reasonable” for regulators to ask the nuclear plant to eliminate prior to release to Lake Erie given technical complexity and cost, rather than what is maximally protective of drinking water

**B. EGLE has legal authority to indirectly regulate radionuclides that co-occur with nonradioactive pollutants in liquid effluent discharges from Fermi 2**

Although Fermi 2's 2021 Effluent Report does acknowledge historical releases of radioactivity to drinking water, the report concludes that “[s]ince 1982, the annual concentrations of beta emitting radionuclides in drinking water samples collected from indicator locations have been similar to those from control locations.” Figure 5 (from Fermi 2's 2021 Effluent report) states that Fermi 2 has since 1982 had “no measurable radiological impact on local drinking water.”<sup>111</sup> Notwithstanding Fermi 2's routine air emissions of radionuclides — its own reports indicate releases of tritium in ventilation exhaust, and some in air emissions from its Condensate Storage and Condensate Return Tanks<sup>112</sup> — the NPDES permit process provides limited but important tools for reducing the facility's radiological impacts to nearby residents. EGLE has authority under the CWA to ensure protection of Lake Erie and local residents from further liquid effluent discharges of radionuclides.

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<sup>108</sup> DTE Electric Company, “Annual Radioactive Effluent Release Report and Radiological Environmental Operating Report,” Apr. 29, 2022 (<https://www.nrc.gov/docs/ML2211/ML22119A115.pdf>).

<sup>109</sup> *Id.*

<sup>110</sup> *Id.*

<sup>111</sup> *Id.*

<sup>112</sup> *Id.*

EGLE should consider regulatory strategies for reducing the risk of radionuclide releases from Fermi 2 under three scenarios: (1) during normal plant operations; (2) to prevent high-volume catastrophic releases; and (3) to foresee and avert radwaste liquid effluent releases upon eventual plant closure.

As an initial matter, CRAFT recognizes the legal constraints on EGLE's ability to regulate radionuclide releases *directly*, notwithstanding that the CWA defines "pollutant" expansively, to include "radioactive materials."<sup>113</sup> In *Train v. Colo. Pub. Int. Rsch. Grp., Inc.*, 426 U.S. 1 (1976), the Supreme Court went beyond this plain statutory text to conclude that the Atomic Energy Act broadly tasked the Nuclear Regulatory Commission with regulation of radionuclide releases to environmental media, and by implication allowed it to occupy this field, such that the NRC displaces EPA's authority.<sup>114</sup> This holding is codified in EPA regulation, where it acts as a bar to direct regulation of radionuclides by both federal and state issuers of NPDES permits.<sup>115</sup>

CRAFT nonetheless urges EGLE to examine the full extent of its authority to regulate Fermi 2's radioactive releases in liquid effluent *indirectly*, given their co-occurrence with other CWA pollutants within its jurisdiction. This process would require careful examination of the full suite of radionuclides and pollutants in Fermi 2's radwaste water.

If, for example, research reveals that any non-radioactive pollutants are typically found in combination with radionuclides, EGLE's regulation of these pollutants could incidentally limit the release of radionuclides as co-pollutants in the wastewater. This pollutant co-occurrence is not purely hypothetical. Fermi 2's current permit allows the facility to emit not only radwaste, but "process wastewater" more generally.

EGLE's attention to radionuclide discharge in effluent will be particularly critical upon eventual closure of Fermi 2. Here, the ongoing political furor surrounding the imminent decommissioning of the Pilgrim Nuclear Power Station in Massachusetts is instructive. As part of plant closure, the Pilgrim nuclear plant dispose of water from its spent fuel pool and other systems. The company in charge of decommissioning, Holtec, initially proposed dumping roughly 1 million gallons of radioactive wastewater into Cape Cod Bay.<sup>116</sup> Intense public backlash ensued.<sup>117</sup>

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<sup>113</sup> 33 U.S.C. §1362(6).

<sup>114</sup> *Train v. Colo. Pub. Int. Rsch. Grp., Inc.*, 426 U.S. 1, 25 (1976).

<sup>115</sup> See 40 C.F.R. §122.2 ("Pollutant means . . . radioactive materials (except those regulated under the Atomic Energy Act of 1954, as amended (42 U.S.C. 2011 et seq.)).

<sup>116</sup> Mike Damiano, "EPA warns company dismantling Pilgrim plant against dumping potentially radioactive wastewater into Cape Cod Bay," BOS. GLOBE (July 7, 2022) (<https://www.bostonglobe.com/2022/07/06/metro/epa-warns-company-dismantling-pilgrim-plant-against-dumping-waste-water-into-cape-cod-bay/>).

<sup>117</sup> CBS Boston staff, "Company decommissioning Pilgrim Nuclear Power Station may dump water without permit," CBSBOSTON.COM (Nov. 29, 2022) (<https://www.cbsnews.com/boston/news/plymouth-nuclear-power-station-water-cape-cod-bay-permit-holtec>).

## Citizens' Resistance at Fermi Two

State legislators then introduced emergency legislation to prohibit release of radioactive water into any of the state's waterways.<sup>118</sup> EPA also weighed in, to express concern with Holtec's assumption that its NRC operating permit presumptively authorized the plant to release radionuclide-laded liquid effluent. In correspondence with Holtec, EPA emphasized that, to the contrary, the CWA is likely to preclude authorization of such a release of radionuclides.<sup>119</sup>

We want to make very clear that, contrary to the implication in [Holtec's] letter that discharges of spent fuel pool water are allowed by EPA, any such discharge is explicitly prohibited by the company's Clean Water Act (CWA) discharge permit, *unless there are no CWA-regulated pollutants present*. While radioactive materials regulated by the Nuclear Regulatory Commission are not considered CWA pollutants, EPA regulates a wide range of other contaminants and the presence of any of those would require further analysis and permitting before any discharge could be allowed by EPA.<sup>120</sup>

In June 2022, EPA reiterated in correspondence with Holtec that "discharges of pollutants in water stored in the spent fuel pool, dryer/separator pit, torus, or reactor cavity are *not* authorized by the current NPDES permit."<sup>121</sup>

Disturbingly, even as this jurisdictional friction persists, the essential facts are missing. At the tail end of Pilgrim's lifespan, EPA and state regulators *remain unclear as to exactly what pollutants beyond radionuclides Pilgrim's high-level wastewater contains*. EPA, in 2022 correspondence regarding the facility, stated that "Holtec has never provided EPA with a pollutant characterization of spent fuel pool water or other water associated with decommissioning the reactor." Now, at the eleventh hour, EPA has required Holtec to provide a full characterization of pollutants if the company wants to discharge the water, so that EPA can belatedly determine whether and which CWA requirements may apply.<sup>122</sup>

Here, EGLE has an opportunity to avert a similar scenario of public alarm, regulatory confusion, and reactive politics upon eventual decommissioning of the plant. CRAFT urges EGLE to ensure that Fermi 2's next NPDES permit requires full characterization and public disclosure of the constituents in the facility's wastewater. This disclosure will enable EGLE to proactively evaluate its CWA tools for addressing radionuclide discharges as co-pollutants (*i.e.*, indirectly) while exercising its CWA authority over non-radioactive pollutants in the plant's liquid effluent.

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<sup>118</sup> Christine Legere, "Attorney General Says Permits Forbid Release of Reactor Water," PROVINCETOWN INDEP. (Feb. 9, 2022) (<https://provincetownindependent.org/news/2022/02/09/attorney-general-says-permits-forbid-release-of-reactor-water/>).

<sup>119</sup> Kenneth Moraff (EPA Region 1, Director of Water Division), Letter to Kelly Trice (Feb. 17, 2022) (<https://www.mass.gov/doc/march-28-2022-ndcap-meeting-attachment-pilgrim-response-21722/download>).

<sup>120</sup> *Id.*

<sup>121</sup> Kenneth Moraff (EPA Region 1, Director of Water Division), Letter to Kelly Trice (June 17, 2022) (<https://s3.documentcloud.org/documents/22080598/june-17-epa-to-holtec.pdf>).

<sup>122</sup> Moraff *supra* note 119; *see also* Christine Legere, *State Will Test Pilgrim's Water for Contaminants*, THE PROVINCETOWN INDEPENDENT (NOV. 30 2022) (<https://provincetownindependent.org/featured/2022/11/30/state-will-test-pilgrim-water-for-contaminants/>).



### **III. EGLE Should Promptly Issue a New, Improved NPDES Permit for Fermi 2**

#### **A. DTE Electric did not submit a complete NPDES Permit Application**

As required by Mich. Admin. Code R 323.2151, DTE Electric submitted a permit application on April 4, 2022, 180 days before the existing permit expired on October 1, 2022. Under the CWA, 40 CFR § 122.21(e) and Mich. Admin. Code R 323.2151, a NPDES permit application must include all necessary information specified before a permit can be issued for public comment. As noted in DTE's July 7, 2022 follow-up application, DTE's original application was incomplete, did not include lab analyses for outfalls D001 and D009, and sought waivers for other discharge laboratory analysis. This analysis required more than one subsequent submittal for EGLE to process and propose a draft NPDES permit. The July 7, 2022 amended application addressed some of the deficiencies including one outfall laboratory analysis that they had previously sought waivers for. DTE should have anticipated the information needed to submit a complete application and not have waited until after the first application was submitted. Many facilities will seek pre-application meetings to make sure that they have all the information necessary in their applications so it can be promptly reviewed. DTE's last submittal of additional information was sent in on January 10, 2023, over nine months after the original application was submitted and well after the original permit expired. As a result, EGLE was unable to fully review the application until that later time, resulting in the delay of the draft permit being noticed. DTE's delay in submitting a complete application has allowed it to continue to operate under the older, less protective permit.

#### **B. NPDES Permits should not extend beyond five years without review**

Both the CWA and Michigan regulations provide that NPDES permits are to be issued for a maximum of five years before reissuance.<sup>123</sup> Allowing expired permits to remain active beyond this period contravenes Congress's intent, enables facilities to operate pursuant to permit conditions reflecting outdated science regarding pollution impacts, and outmoded pollution-control technology, and undermines public confidence in the permitting process.

#### **C. EGLE and EPA have acknowledged the need for timely review of expired permits**

Michigan and the federal government have acknowledged the need for quick review of expired NPDES permits through the state's backlog program, EPA's priority permit program, and EPA's proposed rule regarding administrative continuances of expired permits.

##### *1. Michigan's Backlog Program*

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<sup>123</sup> 33 U.S.C. § 1342; MICH. ADMIN. CODE R 323.2150.

In 2019, Michigan's Water Resources Division implemented a five-year plan to address its acknowledged permit backlog, with the goal of eliminating the backlog by 2024:

The Water Resources Division (WRD) has a five-year plan for reducing the backlog. Each year, we focus on the cycle year permits (e.g., permits expiring in fiscal year [FY] 2021 were priority for FY 2021), and any associated backlogs (e.g., permits expired in 2016, 2011, etc.). On October 1, WRD began our focus on FY 2022 permits and associated backlog. This will progressively work through permits in the backlog incrementally through FY 2024. As permits are reissued in MiWaters, the newly issued permit is connected to ICIS and flow is restored from that point forward. Through implementation of this backlog resolution process, we anticipate resolution of backlog by the end of FY 2024.<sup>124</sup>

Michigan has devoted \$5.9 million dollars to supporting additional Permitting and Compliance Staff to “ensure the timely review of permits,”<sup>125</sup> making plain that the State disfavors allowing facilities to continue operation pursuant to expired permits.

## 2. EPA's Priority Permit System

EPA currently has a priority permit system that partially addresses expired permits that have been administratively continued.<sup>126</sup> The priority permit system requires states to identify whether any permits that have been administratively continued for more than two years are “environmentally significant,” and if so, to act immediately on their reissuance. Criteria for identifying environmentally significant permits include:

- New or revised water quality standards;
- New or revised effluent limitations guidelines;
- *Potentially significant impacts to an impaired or threatened waterbody;*
- *Potentially significant impacts to a drinking water resource;*
- National program priorities (e.g., Combined Sewer Overflow, Concentrated Animal Feeding Operations);
- Protection of threatened or endangered species;
- Significant changes to a facility's operations, treatment, or effluent characteristics; or
- *Public concerns or environmental justice issues.*<sup>127</sup>

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<sup>124</sup> *State Review Framework: Michigan*, ENV'T PROT. AGENCY (June 30, 2022), <https://www.epa.gov/system/files/documents/2022-06/srf-rd4-rev-mi.pdf>.

<sup>125</sup> *Executive Budgets: Fiscal Years 2022 and 2023*, STATE OF MICHIGAN, <https://www.michigan.gov/-/media/Project/Websites/budget/Fiscal/Executive-Budget/Old-Exec-Recs/FY22-Executive-Budget.pdf?rev=1bb4e5e6c3cd45f694432909e89e488f>.

<sup>126</sup> *FY2017 Priority Permit Measure Results*, ENV'T PROT. AGENCY, [https://www.epa.gov/sites/default/files/2017-11/documents/final\\_fy17\\_priority\\_permits\\_issuance\\_report2.pdf](https://www.epa.gov/sites/default/files/2017-11/documents/final_fy17_priority_permits_issuance_report2.pdf).

<sup>127</sup> Southern Environmental Law Center, *Comment on National Pollutant Discharge Elimination System (NPDES): Applications and Program Updates; Proposed Rule* (August 2, 2016) (all emphasis added).

The status of Western Lake Erie as an “impaired” waterbody under the CWA,<sup>128</sup> its status as a source of drinking water, and public concerns about human health and ecosystem effects of Fermi 2’s operations all point to the environmental significance of Fermi 2’s permit and the need to reissue the permit with appropriate limits immediately.

### 3. *EPA’s Proposed Rule on Administrative Continuances*

In 2016, EPA proposed a revision to 40 C.F.R. Section 123.44, the regulation that addresses EPA review of and objections to State NPDES permits.<sup>129</sup> In the text preceding the proposed rule, EPA discussed the benefits and costs of administrative continuances.<sup>130</sup> The benefits were bureaucratic in nature, ensuring process fairness to permit applicants given the reality of over-stretched permitting agencies. EPA stated that administrative continuances protect permittees who have submitted timely applications for renewals from losing authorization due to delay on the part of the permitting authority and provide states with flexibility to prioritize their action without significant adverse impacts on the waters they oversee.<sup>131</sup>

The costs of administrative continuance of expired permits, in contrast, were acknowledged to be substantive, and to fall on the public. EPA observed that administrative continuances can lead to “inappropriate delays,” especially because state administrative continuance laws often allow expired permits to remain continued indefinitely.<sup>132</sup>

Under the proposed federal regulatory revision, administratively continued permits would automatically become “proposed” permits after two or five years. At this point, EPA would be able to request information from the relevant state regarding the environmental impacts of the administratively continued permit, and prod it to begin the reissuance process. If the state proved unresponsive, EPA would take over and begin the review of the proposed permits. Although EPA’s regulation has not been finalized, the agency’s initiation of a rulemaking on this topic indicates that it shares CRAFT’s and other community groups’ systemic concern with the widespread phenomenon of administrative continuance of expired permits.

#### D. Fermi 2’s permit is environmentally significant, warranting prompt review

EGLE’s and EPA’s respective efforts to stanch permit backlogs and curb the phenomenon of administratively continued permits point to the desirability of quick review of expired permits. This principle applies with still greater force to expired permits that are environmentally significant. Given the formal designation of Western Lake Erie as an “impaired” water body under the CWA, Lake Erie’s use as a source of drinking water, and the

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<sup>128</sup> Judith Nemes, “Ohio EPA Declares Western Lake Erie Impaired,” *Envir. Law & Policy Ctr. blog* (Mar. 4, 2018), <https://elpc.org/blog/ohio-epa-declares-western-lake-erie-impaired/>.

<sup>129</sup> 81 Fed. Reg. 31344 (Proposed Rule—National Pollutant Discharge Elimination System (NPDES): Applications and Program Updates, *Haz. Waste & Haz. Subst. Compl.*) (May 18, 2016).

<sup>130</sup> *Id.*

<sup>131</sup> *Id.*

<sup>132</sup> *Id.*

level of public concern about further pollution of the Lake, it is deeply troubling that Fermi's current permit lacks legally required thermal limits on liquid effluent discharges, and does not require DTE to supply data that might enable EGLE to regulate radionuclide discharges indirectly. EGLE should therefore expeditiously review and consider public comment on Fermi 2's draft permit, and promptly issue a final permit that adequately protects human health and the environment.

### **Conclusion**

Every permit decision provides EGLE an opportunity to fulfill its own mission to "protect Michigan's environment and public health by managing air, water, land, and energy resources",<sup>133</sup> while bringing the nation closer to realizing the CWA goals of universally fishable, swimmable waters. Meeting those goals will require an agency willingness to increase environmental protections for Lake Erie and strengthen permit conditions for aging nuclear facilities like Fermi 2 that represent the nation's energy past rather than its energy future.

DTE's own 2022 CleanVision plan highlights the utility's commitment to Michigan-made renewable energy, and outlines DTE's 20-year plan to increase investment in solar and wind energy, accelerate coal plant retirements, and develop new energy storage.<sup>134</sup> Even through DTE's eyes, Fermi 2 is not the energy future.

CRAFT accordingly urges EGLE to protect Michigan's people, our drinking water, fish and fishers, swimmers, and the Lake Erie ecosystem, through the issuance of an appropriately protective NPDES permit for Fermi 2.

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<sup>133</sup> EGLE Website, "Mission, Vision, and Values," (<https://www.michigan.gov/egle/about/mission>).

<sup>134</sup> DTE Electric, *DTE Electric Integrated Resource Plan*, 2022, ([https://dtecleanenergy.com/downloads/IRP\\_Executive\\_Summary.pdf](https://dtecleanenergy.com/downloads/IRP_Executive_Summary.pdf)).