

To: Hayes Township Advisory Focus Group and Planning Commission

Submitted via: Clerk@hayestownshipmi.gov

Re: The need for zoning at the former Big Rock Point nuclear power plant to absolutely minimize human exposure to the lingering hazardous radioactive contamination of the site, as well as to the highly radioactive wastes that will likely remain stored there for decades or longer

Date: February 6, 2023

Dear Hayes Township Advisory Focus Group and Planning Commission,

We urge that the former Big Rock Point nuclear power plant (BRP) be zoned so as to absolutely minimize human exposure to the lingering hazardous radioactive contamination of the site, as well as to the highly radioactive irradiated nuclear fuel and Greater-Than-Class-C so-called “low-level” radioactive wastes (GTCC) that will likely remain stored there for many decades, or longer.

As documented in the November 30, 2006 report entitled *Say Yes to Michigan, Say No to the ‘Plutonium State Park’: Backgrounder on Big Rock [Point] Nuclear Power Plant*, by Kevin Kamps, Nuclear Waste Specialist at Nuclear Information and Resource Service, significant amounts of hazardous radioactive contamination remained at the site, even after and despite the several hundred million dollars spent on decontamination efforts, and despite the U.S. Nuclear Regulatory Commission’s (NRC) approval for “unrestricted use” of the site. The report (posted online at <<http://archives.nirs.us/reactorwatch/decommissioning/bigrockbackgrounder272007.pdf>>) was based on BRP owner Consumers Energy (formerly Consumers Power), decommissioning contractor British Nuclear Fuels, Ltd. (BNFL), NRC, and other corporate and government documents, such as the July 1, 2004 License Termination Plan, Rev. 1 (LTP), and “Radioactive Materials Released from Nuclear Power Plants,” NUREG/CR-2907, by Brookhaven National Laboratory, Upton, NY, prepared for Office of Information Resources Management, NRC (FIN B2234).

A non-conservative figure (due to many significant years of data not being accounted for) for hazardous radioactive emissions from BRP into the environment, reported by Consumers Energy to the NRC (and its predecessor, the U.S. Atomic Energy Commission), was more than 3.3 million curies. This is a very shocking figure for such a relatively small-sized atomic reactor, of just 67 Megawatts-electric. But it is explained by the fact that BRP was experimental, and experienced a number of fuel failure events in its operating reactor core.

It is also explained by the company’s shocking “Radiological Event History” in its License Termination Plan, listing 63 radiation spills, leaks, overflows, and floods, as well as sloppy handling of radioactive wastes and radioactively contaminated materials across the site. (LTP, Page 2B-1). In just one of these incidents, on May 31, 1984, BRP leaked 20,000 gallons of hazardous tritium (radioactive hydrogen) into the soil and groundwater. Consumers Energy

requested – and obtained – permission from the NRC for “on-site disposal” – that is, not cleaning up the spill, but rather simply leaving it in the soil and groundwater. The company and NRC admit that this and other tritium spills violated the Safe Drinking Water Act from 1984 to 2000, in terms of the concentration of tritium in the site’s groundwater, calling into question the safety of portions of the BRP site’s groundwater, for human consumption, for many decades yet to come.

The hazardous radioactivity released by BRP into the air and surface water, onto the soil, and into the groundwater, did not disappear into nothingness. Although much may have migrated off-site — to harm people and other living things downstream and downwind, as well as down the generations, and to bio-accumulate up the food chain — some radioactive contaminants undoubtedly still remain on-site, and in sediments along the adjacent Lake Michigan shoreline -- likely including incorporated in area flora and fauna -- and will continue to do so indefinitely into the future.

As documented by Dale Condra (Table 4, “Concentrations of Plutonium Radionuclides in Water Samples, Big Rock,” in “Analytical Results for Water Samples Collected December 2, 2003 at Big Rock Point Nuclear Power Plant, Charlevoix, Michigan,” Inspection Report Number 050-00155/2003-07) [RFTA 04-001], Oak Ridge Institute for Science and Education (ORISE), Jan. 27, 2004), ultra-hazardous artificial plutonium has been confirmed in groundwater samples at BRP. Given that cleanup during decommissioning extended down less than six inches below the ground surface, plutonium contamination of groundwater and adjacent soils undoubtedly lingers. This is true despite groundwater flow, over time, into Lake Michigan, given plutonium’s relative insolubility.

NRC’s “Safety Evaluation” and “Environmental Assessment/Finding of No Significant Impact,” dated March 2005, as well as Consumers Energy’s LTP, admit the following alarming litany of “residual” artificial radioactive hazards in soil and groundwater at BRP, even post-decommissioning: Hydrogen-3 (tritium); Carbon-14; Manganese-54; Iron-55; Nickel-59; Cobalt-60; Nickel-63; Zinc-65; Strontium-90; Technetium-99; Silver-110m; Iodine-129; Cesium-134; Cesium-137; Europium-152; Europium-154; Europium-155; Plutonium-238; Plutonium-239; Plutonium-240; Plutonium-241; Americium-241; Curium-243; and Curium-244.

Cobalt-60 remains hazardous for 53 years after generation in an atomic reactor. Tritium for 123 years. Strontium-90 for 290 years. Cesium-137 for 300 years. Americium-241 for 4,300 years. Carbon-14 for 57,000 years. Plutonium-239 for 240,000 years. Technetium-99 for 2 million years. Iodine-129 for 160 million years. To name but a few. Clearly, the radioactive hazards at BRP will persist forevermore, at least in regards to any human understanding of time-scales.

In addition to the radioactive contamination described above, there is also the highly radioactive waste stored on-site. About a decade ago, the U.S. Department of Energy predicted that a permanent geologic repository could not be opened until 2048 at the earliest. Given that no progress has been made since, even this date is very likely overly optimistic.

While BRP's current owner, Holtec International, hopes to export BRP's irradiated nuclear fuel and GTCC to its own consolidated interim storage facility (CISF) in New Mexico, the scheme has met adamant opposition by multiple states, as well as a national environmental justice coalition. As of this writing, the New Mexico state legislature is considering a bill to ban the CISF.

Due to the risks to health, safety, security, and environment posed by the significant lingering radioactive contamination at BRP, as well as the indefinite storage of highly radioactive wastes there, the site should be zoned to absolutely minimize human exposure to these radioactive hazards.

If you have any questions, please feel free to contact us.

Sincerely,

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Beyond Nuclear aims to educate and activate the public about the connections between nuclear power and nuclear weapons and the need to abolish both to safeguard our future. Beyond Nuclear advocates for an energy future that is sustainable, benign and democratic.

and

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Don't Waste Michigan is a four-decade-old grassroots association with over 50 members throughout Michigan. DWM works to shut down aging, dangerous nuclear power plants in the Great Lakes Basin; to halt or block the construction of new nuclear power plants; to educate the public about the dangers of nuclear power and nuclear waste, its deadly byproduct; and to block the practice of landfilling nuclear waste.