From: Citizens for Alternatives to Chemical Contamination Member of the Michigan Environmental Council and Earth Share of Michigan 8735 Maple Grove Road, Lake, Michigan 48632-9511 Voice and Fax: 989-544-3318 Chapter Organizations: Huron Environmental Activist League

Re: Document ID: NRC-2022-0158-0001 December 27, 2022 Emailed to: Stacy.Schumann@nrc.gov SUNI Review Complete Template=ADM-013 E-RIDS=ADM-03

ADD: Marlayna Doell, Sarah Achten, Pam Buzdygon-Menefee, Mary Neely Comment (15) Publication Date: 8/26/2022 Citation: 87 FR 52598

To the Nuclear Regulatory Commission:

Citizens for Alternatives to Chemical Contamination (CACC) is a 501 C3 grassroots environmental education and advocacy organization, founded in 1978, and dedicated to the principles of social and environmental justice and protection of the Great Lakes Ecosystem. CACC has members that live within 50 miles of this reactor, some directly downstream and within the airshed of this reactor and members who swim, enjoy recreational boating and fishing in Lake Michigan.

These are comments on the Palisades Nuclear Plant Post-Shutdown Decommissioning Activities Report (PSDAR) (accession number ML20358A232) submitted December 23, 2020, by Holtec Decommissioning International (HDI). HDI is a wholly-owned subsidiary of Holtec International.

Due to time constraints and family holidays, these are but a few of the comments we would like to make, and we would note for later comment periods that it is a bad plan to end a comment period during the week between Christmas and New Years, a national holiday period when people have multiple family and community obligations and business owners have end of year duties as well. None-theless, we know each comment is critical to the safety and well-being of the citizens of Michigan and our environment, as well as to members of CACC.

It would be extremely helpful for the NRC to have all future documents such as the PSDAR to have pages of the whole document consecutively numbered, to make it *far and away less confusing* to find items in the document, rather than numbering each section separately.

In Section 1.1 of the PSDAR, a request is made by HDI for NRC Approval of an exemption to use the Palisades Nuclear Decommissioning Trust funds for Palisades spent fuel Management and site restoration activities. We believe this is fiscally naive to consider this request before a full estimate is done for decommissioning activities. Indeed, in the last paragraph of Section 1.1, it is acknowledged that the PSDAR is based on currently available information and may be modified as additional information becomes available or conditions change. It is worth noting that this request is made *before* site wide characterization activities are completed, before: "...radiological, regulated, and hazardous wastes are identified, categorized, and quantified to support decommissioning, waste management planning and site characterization." Only *after* this request is made, will: "Surveys ... be conducted to establish the contamination and radiation levels throughout the plant. This information will be used in developing procedures to ensure that hazardous, regulated, and radiologically contaminated areas are remediated, and to ensure that worker exposure is controlled." Section 2.12 of the PSDAR. We would note that Palisades has a long and documented history of contamination of workers, plant and areas onsite – what is euphemistically called "sloppy housekeeping" by the industry. Additionally, costs of do-ing business are rising astronomically in the current U.S. and global economy. We urge the NRC to

deny the request for any exemption to use Palisades Nuclear Decommissioning Trust funds for Palisades spent fuel management until decommissioning has been completed. HDE should not try to cut corners on cleaning up a nuclear reactor site.

Assuming that spent (irradiated) fuel will be able to be moved from the spent fuel pool in 3 years (Section 1.1) seems extremely optimistic as it's generally been a rule of waiting five years (or longer) before fuel can be safely thermally and radiologically stored in dry casks. If any of this fuel is high burnup fuel, it may well take longer. Additional heat and radiation without cooling water may cause damage to the spent fuel as well as to the inner casks. It could also mean greater radiation exposure to workers, especially if there are problems moving the fuel from the pool, as has happened in the past. Furthermore, many serious and unresolved problems have arisen from the start with dry casks. See: Nuclear Information and Resource Service factsheet on dry casks, some of which is direct history of the casks at Palisades: https://www.nirs.org/wp-content/uploads/radwaste/atreactor-storage/drycaskfactsheet07152004.pdf

In section 2.4, targeted decontamination mentions surface wipe-down, which essentially means workers scrubbing hot areas. When workers at the Bruce Nuclear Generating Station in Ontario were scrubbing down radioactive components to clear them of radioactivity, they were unable to get them clean after weeks of scrubbing. This seems like it would also increase the amounts of contaminated water that might be dumped into Lake Michigan. There should be radiological monitoring done in the discharge channel and any past discharge channels, as well as in waters between the current breakwall and downstream. There is a bottom ridge that crosses Lake Michigan, trapping toxins in the southern (Chicago) basin, which means that any toxins released into the southern basin have a longer period before they are moved out of the area – if indeed they are moved.

Radioactive substances that have been historically documented as released by Palisades (and Big Rock Point, incidentally) can accumulate in algae and other plants, wildlife and fish that feed or live in Lake Michigan. Many of these radionuclides also bioconcentrate in the food chain, (just like DDT) - some of them thousands or tens of thousands of times - with potentially devastating consequences to those at the top of the food chain, such as birds and human beings. This is often ignored because radioactivity is not easily sensed. A person can't usually see, taste, smell or feel radioactivity. Children, infants, and a growing fetus/embryo in the womb are at greater risk from intake of radioactive contaminated food, since their more rapidly dividing cells and DNA are more vulnerable to damage. Women, the elderly and those with immune system problems are also at greater risk. Bioconcentration in the food chain has been well documented in Department of Energy studies near Hanford, Washington and near other D.O.E. labs - and also in the "Report on Bioaccumulation of Elements to Accompany the Inventory of Radionuclides in the Great Lakes Basin" See: <u>https://ijc.org/en/report-bioaccumulation-elements-accompany-inventory-radionuclides-great-lakes-basin</u>

Section 5.1.1.1 Onsite Land Use, refers to moving contaminated steam generators (and eventually lethal, irradiated fuel) by barge on Lake Michigan. Steam generators are extremely radioactive, very large, heavy and dangerously awkward to move. If they were lost overboard in any depths, it would prove most difficult to reclaim them from the depths of Lake Michigan. As far as casks, if one or more were dropped into Lake Michigan - even without breaking, the enormous task of securing casks in the depths of Lake Michigan and hauling them up in underwater pressures pose never-before-seen dangers. Furthermore, if water seeps into an irradiated fuel cask that is loaded with so-called "spent" or irradiated fuel, criticality can ensue. Even minus criticality, plutonium and other radionuclides could contaminate the Lake far longer than the Great Lakes have existed (a mere 10,000 to 12,000 years.) Plutonium alone has a half-life of 24,000 years. According to nuclear health physicists, one must multiply a half life by 10 or by 20 to obtain the full hazardous life of a nuclear substance. Note that a millionth of a gram of plutonium inhaled will result in lung cancer. A fire at the spent fuel pool site or at the dry cask site (or anywhere on a transport route) could spew lethal fumes.

Ontario Power Generation attempted some years back to send radioactive steam generators through the Great Lakes (through the dangerous waters of Georgian Bay!) through Lake Huron, down the St. Clair River etc. and eventually to the Atlantic Ocean and across to Sweden to be "cleaned" and have contaminated metal mixed with clean metal and "recycled". They were stopped in their tracks by outraged citizens and officials on both sides of the Atlantic.

The western shore of Lake Michigan has seen direchos with recorded winds as high as 130 miles per hour. The May 31, 1998 thunderstorms produced a direcho with winds of 60-130 mph, killing and injuring people and damaging buildings. Just as intense, was the west-to-east moving wall of wind that came across lower Michigan at an average speed of 70 mph. See: https://www.weather.gov/grr/sum-mary19980531 - Recently, storms have increased in intensity and this appears likely to worsen. Seiches are also known to wreak havoc on shoreline areas in Lake Michigan. (Shoreline erosion has dumped whole houses off of the Lake Michigan shoreline. Shoreline erosion could easily affect the pads that the dry casks sit on, since these pads essentially sit on sand dunes. "Dramatic" erosion of the western shoreline of Lake Michigan was documented aerially in 2020: See: https://www.michi-gan-shorelin2e

"Singing sands" documented in Southwest Michigan can liquify under the right conditions and can pull the rug so to speak out from under construction that's built upon those sands – not a good place to put 120-ton casks holding lethal highly irradiated fuel.

CACC calls on the Nuclear Regulatory Commission to require an Environmental Impact Statement as so many of the decommissioning and post decommissioning have environmental dangers unique to the Palisades reactor site: among them (but not limited to): 120 ton casks sitting on a cement pad that lies on potentially shifting sand dunes. Radioactive steam generators nor casks with irradiated fuel have ever knowingly been barged on the Great Lakes before.

We call on the Nuclear Regulatory Commission to put the safety and welfare of the residents of Michigan and the states surrounding Lake Michigan first.

Sincerely,

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