

September 23, 2022

Honorable Jennifer Granholm
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Via email to The.Secretary@hq.doe.gov
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RE: Request for denial of certification of Holtec International's Palisades Nuclear
Power Plant for receipt of payments under DOE Civil Nuclear Credit Program

Dear Madame Secretary Granholm:

The undersigned individuals and organizations, comprising thousands of citizens, write to request that the Palisades Nuclear Power Plant (Palisades), owned by Holtec International, be denied certification by the U.S. Department of Energy (DOE) for the purpose of receiving payments under DOE's Civil Nuclear Credit Program. For DOE to consider certifying Palisades as eligible at all flies in the face of the letter and spirit of the Infrastructure Investment and Jobs Act (IIJA), which authorized the Program. Congress intended the IIJA to support only currently operating commercial nuclear reactors that face termination of operations for economic reasons. Palisades permanently ended power generation activities on May 20, 2022. Its entire inventory of nuclear fuel was unloaded on June 10, 2022 by Entergy. Permission to operate the

reactor has been formally terminated by the U.S Nuclear Regulatory Commission (NRC).

There can be no denying that Palisades is no longer operable. Attached hereto is June 13, 2022 correspondence entitled “Certifications of Permanent Cessation of Power Operations and Permanent Removal of Fuel from the Reactor Vessel” submitted to the NRC by Entergy, which owned Palisades immediately prior to Holtec International’s subsidiaries taking over the license, power plant site and spent nuclear fuel inventory.

The June 13 letter states, pertinently:

In this letter Entergy hereby certifies to the NRC in accordance with 10 CFR 50.82(a)(1)(i) that power operations ceased at PNP on May 20, 2022. In addition, in accordance with 10 CFR 50.82(a)(1)(ii), Entergy also certifies that the fuel was permanently removed from the PNP reactor vessel and placed in the PNP spent fuel pool on June 10, 2022. Entergy understands and acknowledges that upon docketing of these certifications, the PNP 10 CFR Part 50 license no longer authorizes operation of the reactor or emplacement or retention of fuel in the reactor vessel.¹

On December 13, 2021, the NRC’s Division of Operating Reactor Licensing, Office of Nuclear Reactor Regulation granted written approval to Holtec Decommissioning International (HDI) to commence withdrawals of funds from the Palisades Decommissioning Trust Fund. The Fund had a balance of \$552,049,000 at the beginning of 2022.² HDI, the present plant manager, may manage spent fuel and conduct site restoration without notifying the NRC prior to drawing funds from the Trust Fund, according to the NRC:

Therefore, the Commission hereby grants HDI an exemption from the requirements of 10 CFR 50.82(a)(8)(i)(A) and 10 CFR 50.75(h)(1)(iv) to allow the use of a portion of the funds from the PNP DTF for spent fuel management and site restoration activities at PNP in accordance with HDI’s PSDAR and SSCE, dated December 23, 2020. Additionally, the Commission hereby grants HDI an exemption from the requirement of 10 CFR 50.75(h)(1)(iv) to allow such withdrawals without prior NRC notification.³

¹ The June 13, 2022 Certifications letter is available online at <https://www.nrc.gov/docs/ML2216/ML22164A819.pdf>

² Palisades Site-Specific Decommissioning Cost Estimate, <https://holtecinternational.com/wp-content/uploads/2022/06/HDI-Palisades-PSDAR.pdf> at p. 46.

³ NRC Exemption granted to Palisades, ADAMS No. ML21286A506 at p. 10, <https://adamswebsearch2.nrc.gov/webSearch2/main.jsp?AccessionNumber=ML21286A506>

Holtec International has likely been spending resources from the Decommissioning Trust Fund since at least late June 2022.⁴

I. The Civil Nuclear Credit Program Statute Requires An Operating Reactor

The Infrastructure Investment and Jobs Act, H.R. 3684, was passed into law by Congress on December 2, 2021. The Civil Nuclear Credit Program, which appears at Section 40323 of the new law, is codified at 42 USC § 18753. The statute explicitly requires that in order for a nuclear power reactor to be certified, the applicant must be "a nuclear reactor that— (A) competes in a competitive electricity market. . . ." 42 USC § 18753(a)(1)(A). Palisades is competing nowhere since its fuel is completely unloaded and the operating permission that was part of its license has formally ended.

II. Civil Nuclear Credit Program Guidance

DOE's June 2022 Amended Guidance⁵ recognizes that Congress contemplated the subsidy of *operating* reactors facing closure for economic reasons. We discuss below several parts of the Amended Guidance that underscore this limitation.

(An eligible Applicant's Nuclear Reactor, as defined in Section V, must meet the following minimum criteria to be eligible for certification:)

1. The Applicant has demonstrated that, at the time of the submission of the Certification Application, the Nuclear Reactor is projected to cease operations due to economic factors;⁶

But Palisades is not "projected" to cease operations; it actually did so in May 2022.

2. The Applicant has demonstrated that Air Pollutants would increase if the Nuclear Reactor were to cease operations and be replaced with other types of power generation;

⁴ HDI predicted that it would be expending DTF funds by the time the license transfer from Entergy to HDI was completed, which transfer was completed on June 28, 2022: "[B]y the time of the planned transfer transaction's closing. . . decommissioning trust funds will have been expended for 'certain decommissioning planning and initial decommissioning activities,' and that 'at that juncture' decommissioning funding will be governed by section 50.82." *Entergy Nuclear Operations, Inc., Entergy Nuclear Palisades, LLC, Holtec International and Holtec Decommissioning International, LLC* (Palisades Nuclear Plant and Big Rock Point Site), 95 NRC ____, CLI-22-08 at 38 (July 15, 2022).

⁵ <https://www.energy.gov/ne/civil-nuclear-credit-program-guidance>.

⁶ This and all the other numbered headings all appear at p. 12 of the Amended Guidance.

Whether or not air pollution has increased in the wake of Palisades' May 2022 closing is rhetorical at this point.

3. The NRC has provided the Secretary with reasonable assurance that the Nuclear Reactor will continue to be operated in accordance with its current licensing basis (as defined in 10 C.F.R. § 54.3);

The NRC cannot provide this assurance since Palisades is closed and its current licensing basis does not contemplate generation of electricity. The Guidance requires that the plant will "continue" to be operated in accordance with its current licensing basis. Palisades has no permission to conduct power generation operations.

"Current licensing basis" is defined as follows by the Nuclear Regulatory Commission:

Current licensing basis (CLB) is the set of NRC requirements applicable to a specific plant and a licensee's written commitments for ensuring compliance with and operation within applicable NRC requirements and the plant-specific design basis (including all modifications and additions to such commitments over the life of the license) that are docketed and in effect. The CLB includes the NRC regulations contained in 10 CFR parts 2, 19, 20, 21, 26, 30, 40, 50, 51, 52, 54, 55, 70, 72, 73, 100 and appendices thereto; orders; license conditions; exemptions; and technical specifications. It also includes the plant-specific design-basis information defined in 10 CFR 50.2 as documented in the most recent final safety analysis report (FSAR) as required by 10 CFR 50.71 and the licensee's commitments remaining in effect that were made in docketed licensing correspondence such as licensee responses to NRC bulletins, generic letters, and enforcement actions, as well as licensee commitments documented in NRC safety evaluations or licensee event reports.

10 C.F.R. § 54.3.

Holtec cannot provide the required "written commitments for ensuring compliance with and operation within applicable NRC requirements."

4. The NRC has provided the Secretary with reasonable assurance that the Nuclear Reactor poses no significant safety hazards;

The NRC cannot provide the DOE Secretary with reasonable assurances that there are no significant safety hazards. To the contrary, Palisades poses significant safety hazards whether or not Palisades were restored to fission operations.

If Palisades were restored to operation, for example, there would have to be resolution of its 50-year plague of control rod drive mechanism (CRDM) seal leakage problems. The NRC allowed 10 gallons of radioactive water per minute to leak through all seals on the reactor vessel. Seal failures recurred throughout the 1970's at Palisades, then inexplicably disappeared and have repeatedly occurred since the early 2000s. The root cause(s) of the problem have never been established. (Nuclear engineer) David Lochbaum documented for the Union of Concerned Scientists in 2010 "that the Palisades reactor has had a much higher seal failure rate than other reactors, particularly the other reactors with similar control rod seals."⁷ Noting that the CRDM seals are a key safety feature to protect the radioactive fuel core from damage, Lochbaum found that the "fundamental cause of the recurring control rod seal leak problems at Palisades has apparently eluded detection."⁸ Indeed, Palisades was permanently closed on May 20, 2022, 11 days early, because of the latest control rod drive mechanism seal failure.⁹

If Palisades were restored to operations there would have to be a determination about what to do about the reactor vessel's severe embrittlement. In 2006, Consumers' Energy, the then-owner of Palisades, cited the Palisades reactor vessel's increasingly risky metallurgical embrittlement as a reason for its decision to sell the plant. Palisades has perennially been ranked by the NRC as having one of the most embrittled reactor vessels in the industry, which could fail critically in the event of too-rapid heating or cooling.¹⁰ As a result of final fuel unloading in June 2022, Holtec now has access to one or more metal "coupons" which were placed inside the reactor in the 1960s to provide metallurgical evidence of the vessel's condition. There has been no meaningful scientific assessment of the Palisades reactor vessel for more than 20 years. Absent accurate scientific analysis of embrittlement at Palisades, there will be nothing done to cure this major safety concern.

Restoration of Palisades to operation would also implicate the decades-long need to replace the reactor pressure vessel head. The project was deferred indefinitely in 2006¹¹ and has never been performed. In the same 2006 document, Consumers Energy also cited the need for replacing the steam generators for the second time in

⁷ Lochbaum, "Headaches at Palisades: Broken Seals & Failed Heals," <https://beyondnuclear.org/headaches-at-palisades-broken-seals-and-failed-heals/> p. 4.

⁸ Lochbaum, *id.*

⁹ Press Release, "Entergy's Palisades Team Finishes Strong As Facility Shuts Down," <https://www.energynewsroom.com/news/entergy-s-palisades-team-finishes-strong-as-facility-shuts-down/> (May 20, 2022).

¹⁰ <https://www.nrc.gov/docs/ML1310/ML13108A336.pdf>, p. 5/15 of PDF, Item #4, "Which are the other most embrittled plants in the U.S.? How many PWRs will reach their screening criteria in the next 10 years?"

¹¹ <http://www.nrc.gov/docs/ML0630/ML063060176.pdf>

Palisades' history. Entergy did not do so between 2007 and 2022 and there is no indication Holtec will do so going forward.

Even in its inoperable state, there are significant safety concerns at Palisades regarding the onsite storage of spent nuclear fuel (SNF). In 1994, an NRC safety inspector turned federal whistleblower, Dr. Ross Landsman, identified violations of the reactor's Safe Shutdown Earthquake Evaluation in the form of subsurface stability beneath the concrete pads for the loaded nuclear waste casks that are perched on the Lake Michigan shoreline. Dr. Landsman filed a Differing Professional Opinion with the agency in an effort to prevent the loading of nuclear waste into the casks for indefinite storage on a geology literally of "shifting sand."¹² The NRC allowed the spent nuclear fuel waste to be loaded into the casks anyway. Both cask pads at Palisades violate NRC earthquake safety regulations. The older one, located nearer Lake Michigan, violates liquefaction standards, while the newer one, somewhat inland, violates amplification standards, according to Landsman.

Cask No. 4, the fourth dry storage cask (DSC) to be loaded with spent nuclear fuel at Palisades, poses dangers to public health and the environment. Weld defects were detected in the 130-ton VSC-24 cask after it was loaded in 1994. Engineers for then-owner Consumers Energy predicted that returning the thermally hot inner canister which contains the thermally hot SNF, into the 100 degree F. indoor wet storage pool water while the SNF was at 400 degrees C. (750 degrees F.) could cause a steam flash and thermal shock to container and fuel. The steam flash could expose workers to radiation doses, while the thermal shock could degrade the canister and fuel, making physical conditions even worse than they already are. They also determined that the SNF could not be adequately cooled during the short window of time to cut into the storage cask and move SNF into a new transfer cask. Disruption of the convection air flow needed, by design, to cool the cask's contents would cause overheating and violate the cask's technical specifications. Director's Decision DD-97-1, *Consumers Power Company* (Palisades Nuclear Plant), 45 NRC 33, 37-38 (1997). Cask No. 4 has been left on the storage pad at Palisades in defective condition for the ensuing 28 years. Whenever it takes place, remediation will be dangerous and expensive.

III. Conclusion: Certification Must Be Denied

Palisades does not qualify for the Civil Nuclear Credit Program because (1) it isn't an operating nuclear power generating reactor; (2) the plant poses longstanding safety hazards if allowed to commence operations again; and (3) it cannot meet the "current licensing basis" expectation that the plant will be prospectively operable.

¹² <http://www.nirs.org/reactorwatch/licensing/landsmandec.pdf>

It is unequivocally clear that the IIJA and the Amended Guidance envision subsidizing only operating reactors under the Civil Nuclear Credit Program. The Program simply does not contemplate funding a closed reactor that has terminated operations.

Therefore, the undersigned individuals and organizations request in the strongest possible terms that DOE certification of Palisades to receive subsidies under the Program be denied.

Thank you.

Sincerely,

/s/ Terry J. Lodge

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