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# Nuclear waste storage clouds future of Michigan's Palisades Power Plant

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**Carol Thompson, The Detroit News**

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*Covert* — A botched promise from the federal government is contributing to the murky future of Palisades Power Plant, a nuclear plant on the shore of Lake Michigan that is slated in the spring.

For decades, [the federal government has said it would](#) create a permanent storage site for nuclear waste. It has not developed such a site, so the country's nuclear waste remains in interim facilities, often held on-site at shuttered plants.

Courts have found the government liable for storage costs. The federal government has paid out roughly \$3.7 billion in storage costs as a result, according to [a 2014 U.S. Government Accountability Office report](#) about spent nuclear fuel.



Holtec International is seeking a license to decommission Palisades Power Plant in southwestern Michigan. The Florida-based company plans to build an interim storage facility in New Mexico that would end up storing nuclear waste from Palisades. CHRIS DUMOND, SPECIAL TO THE DETROIT NEWS

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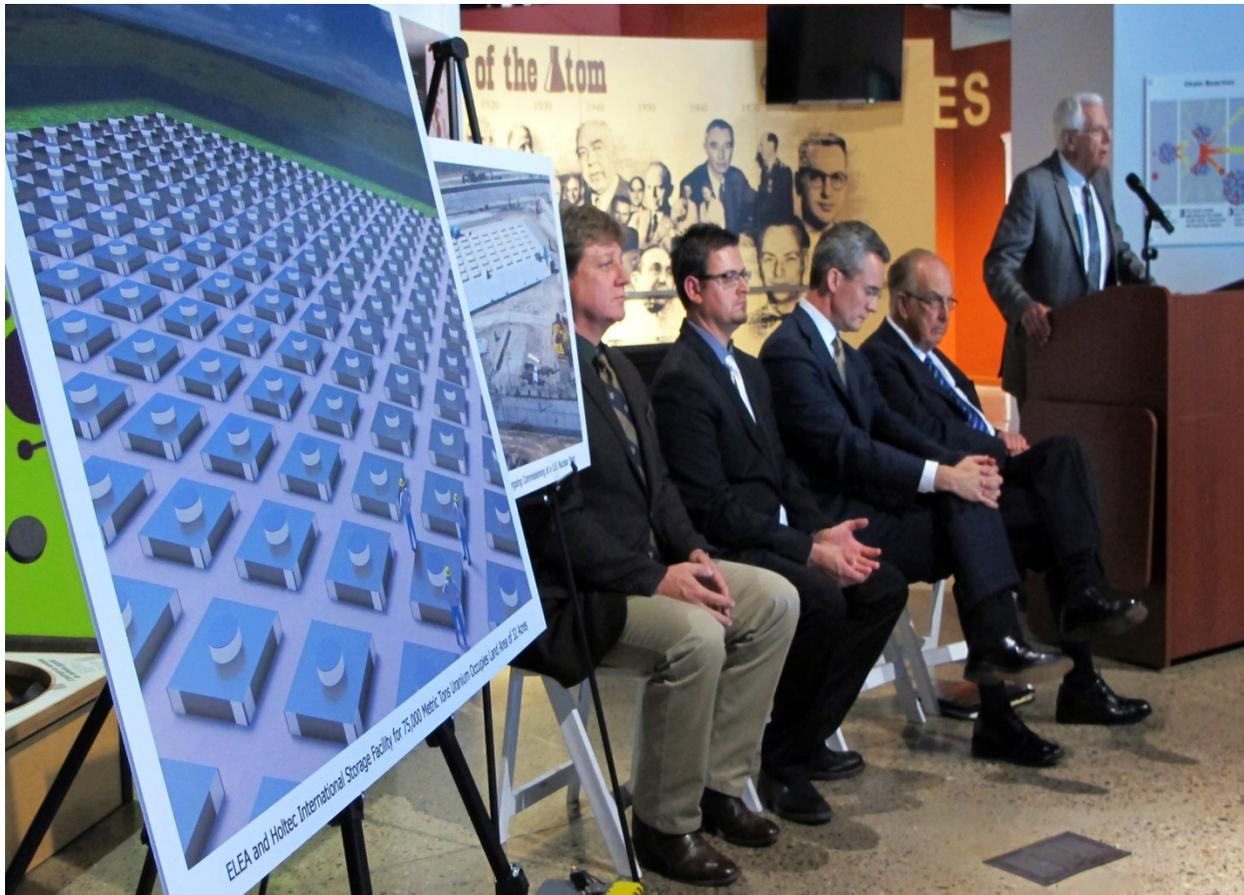
At the time of the report, the government had planned to start accepting waste for permanent storage in 2021. That hasn't happened — there is no permanent repository.

The result is companies have to find temporary solutions. And those temporary solutions are often unpopular with nearby residents, effectively pitting communities against each other.

Holtec International, the company pursuing the acquisition of Palisades from current owner Entergy Nuclear, is venturing into the world of nuclear plant decommissioning, recently getting approval to decommission three plants in the eastern United States.

The company also is getting into temporary nuclear waste storage. It plans to build an interim storage facility in New Mexico, where it could store nuclear waste from sites around the country until the federal government drums up a permanent solution.

The proposal is unpopular with some Southwest residents and politicians who are challenging Holtec's plan.



In this April 29, 2015, file photo, an illustration depicts a planned interim storage facility for spent nuclear fuel in southeastern New Mexico as officials announce plans to pursue a project by Holtec International. SUSAN MONTOYA BRYAN, AP

New Mexico Attorney General Hector Balderas [sued the Nuclear Regulatory Commission](#) and federal government in March, arguing the commission acted outside its authority. He said the interim storage facility could jeopardize the region's water and agricultural industry and give state and local governments "the enormously expensive job" of preparing for a nuclear mishap.

"It is fundamentally unfair for our residents to bear the risks of open-ended uncertainty," Balderas said.

But if New Mexico is successful in blocking the facility, Michigan is more likely to end up keeping the nuclear waste.

If Holtec acquires Palisades and builds the New Mexico storage facility, Palisades' waste would likely end up shipped to the Southwest, Holtec spokesman Joseph Delmar said. In the company's December report to the Nuclear Regulatory Commission, it described potentially "barging large plant components from Palisades on Lake Michigan and beyond," which may require the company to dredge or build a slip for the barge.

The idea is unpopular with some environmental groups, including Beyond Nuclear, an anti-nuclear organization. Beyond Nuclear radioactive waste specialist Kevin Kamps warned there could be drastic consequences if something went awry with the fuel in transit over Lake Michigan.

But without an interim storage facility, Holtec would leave Palisades' waste on-site in Michigan "until there's another solution available," company spokesman Joseph Delmar said.



A caution sign marks an area surrounding a pool that protects spent nuclear fuel at the Indian Point Energy Center, in Buchanan, N.Y., in this 2017 file photo. The plant was shuttered in April. JULIE JACOBSON, AP

There is no solution on the table. The U.S. Department of Energy had identified Yucca Mountain in Nevada as a likely site for the repository, but that proposal has effectively been killed, Peter Bradford, a former nuclear regulatory commissioner.

Spent fuel sites generally are safer than nuclear plants, he said, but most communities still don't want the nation's nuclear waste in their backyard.

"The problems associated with disposing of it, given how rapidly the waste decays in the first few years, are not as great as the reactor safety issues," he said.

The concerns about the future of the country's nuclear waste is likely to become more acute as more nuclear plants close in the coming years, Environmental Law and Policy Center senior attorney Margrethe Kearney said.

The economy of electricity production was upended by cheap natural gas, which made coal and nuclear energy production more expensive in comparison, the U.S. Energy Information Administration said in its 2021 energy outlook. Basically, all of the new energy plants coming online are powered by renewable sources or natural gas.

Nuclear plants will continue to retire through the next decade, the energy administration said in the outlook, and nuclear will become an increasingly less common source for energy in the United States through 2050.

That's why groups, such as the Environmental Law and Policy Center, which routinely intervenes in nuclear power regulatory issues throughout the country, are watching what happens with Palisades, its waste and the shoreline property's recovery, Kearney said.

"There are a lot of plants in the Midwest that are not economical to operate anymore, so we're going to see a lot of early shutdowns in the Midwest," she said. "I think there's a real question as to how we're going to handle them."

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# State fears nuclear nightmare on Lake Michigan's shores

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**Carol Thompson, The Detroit News**

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*Covert Township* — A blockade of I-beams sunk deep into the beach serve as a stark barrier between industry and recreation along Lake Michigan's southern shore.

On one side is Van Buren State Park, where visitors swim, boat and sunbathe on the stretch of Great Lakes sand. On the other is Palisades Power Plant, a nuclear energy facility that has produced electricity for decades and has become a new source of controversy.

Palisades is slated for closure in the spring. Its owner, New Orleans-based Entergy Nuclear, seeks to transfer Palisades to a New Jersey company that is gobbling up shuttered nuclear plants, promising to decommission them swiftly and on a strict budget.

But environmental groups and Michigan's top law enforcement official doubt the company can fulfill those promises. Holtec International's plans raise "significant health, safety, environmental, and financial concerns for residents of the state," Michigan Attorney General Dana Nessel wrote to the U.S. Nuclear Regulatory Commission in a February petition.

As part of decommissioning Palisades, Holtec intends to let nuclear waste sit in storage on the site abutting Lake Michigan. And if the company gets approval to build an interim storage facility in the southwest United States, it could ship that waste on barges over the storied Great Lake.

**More:** [Nuclear waste storage clouds future of Michigan's Palisades Power Plant](#)

Imagine high-level nuclear waste transported across the world's largest source of fresh water, said Michael Keegan, co-chair of the anti-nuclear group Beyond Nuclear.

"There's a potential for contaminating the entire lake," Keegan said.

Radioactive materials released into the environment can cause air, water, surfaces, soil, plants, buildings, people, or animals to become contaminated, the U.S. Centers for Disease Control and Prevention says. A high dose of radiation could be fatal, but exposure even to low-level radiation increases cancer risks, according to the U.S. Environmental Protection Agency.

Holtec International, founded in 1986, only recently turned to decommissioning work when it purchased sites in 2019. Most of its work involves developing and manufacturing products for the nuclear industry. Although it has secured the licenses to shutter three other U.S. nuclear plants, it has not completed a decommissioning project.

Company officials say Holtec's experience in nuclear energy makes it right for the job. Online, they boast about the company's decommissioning arm, Holtec Decommissioning International, using [a "fleet management approach" to decommissioning multiple sites](#) that saves money by minimizing managerial costs.

Critics, however, say Holtec's promise of quick-and-easy decommissioning is too good to be true. They contend the company isn't equipped with the cash or experience for the job, putting the state at risk of a scenario in which Holtec exploits Michigan energy users, declares bankruptcy and leaves behind a radioactive mess.

Michael Keegan, co-chair of the anti-nuclear group Beyond Nuclear

"What Michigan is facing is a situation where Holtec comes in, does a derelict cleanup and Michigan is left holding the bag," Keegan said. "All the risk will be incurred by the public."

Holtec and Entergy have asked the Nuclear Regulatory Commission to approve the transfer of Palisades' operating license from Entergy to Holtec. If approved, the transaction would kick off an official sale and transfer of the property from Entergy to Holtec.

Entergy does not stand to make much money from the deal. Entergy purchased Palisades from Consumers Energy for \$380 million in 2007 but plans to sell the plant to Holtec for less than \$1,000, according to a membership interest purchase and sale agreement attached to Entergy's license transfer request to the NRC.

The Michigan Public Service Commission allowed Consumers to sell Palisades to Entergy Corporation in 2007, effectively removing the nuclear power plant from state oversight because Entergy is not a regulated utility. Consumers and Entergy entered into a purchase agreement that allowed Consumers to buy energy from the plant through 2022.



An aerial view of the Palisades Power Plant in southwestern Michigan, which is slated to close next year. JEANETTE MCDONALD / AP FILE

Entergy spokeswoman Val Gent said the company wants out of wholesale nuclear power generation so it can focus on selling energy straight to consumers. It's a business decision that coincides with the end of Consumers' agreement to purchase power from Palisades, she said.

"Entergy is an expert in operating the plant, and Holtec is an expert in decommissioning," Gent said, noting the Nuclear Regulatory Commission has recently approved license transfers to Holtec at three other American nuclear plants. Company officials are "confident Holtec can decommission Palisades safely and has the financial qualifications" necessary for the work.

But Michigan Attorney General Dana Nessel, Beyond Nuclear and other environmental groups do not believe the claim. They have intervened in the license transfer request before the federal nuclear commission and asked it to grant them a hearing that will allow the groups to scrutinize Holtec's plans.



New Orleans-based Entergy owns Palisades Power Plant in Covert, Mich., but it is seeking to transfer the facility to Florida-based Holtec International, which would decommission the plant when it closes in 2022. CHRIS DUMOND, CHRIS DUMOND, SPECIAL TO THE DETROIT NEWS

## Holtec's trust fund strategy

A half-billion-dollar trust fund is central to the argument over Palisades' future.

The trust fund was built by Consumers Energy, the Jackson-based utility that developed and operated Palisades for decades. It was funded by Consumers Energy customers from 1971 through 2007, who paid into the trust through [surcharges on their energy bills](#) until the plant was sold. Entergy added a "nominal amount" when it purchased the plant, Gent said, though she would not disclose how much.

Consumers created the trust fund to satisfy the federal requirement that nuclear plant owners [set aside money](#) for future decommissioning costs.

Holtec contends the fund is large enough to fully cover the cost of decommissioning Palisades. Critics disagree, warning that a failure of finances could devastate the environment if the company is inclined to prioritize the budget over safety.



A warning sign marks the property line to Palisades Power Plant. CHRIS DUMOND, CHRIS DUMOND, SPECIAL TO THE DETROIT NEWS

Holtec plans to rely exclusively on the trust fund to pay for decommissioning Palisades, the company wrote in a December report to the Nuclear Regulatory Commission. Holtec also wants to use the trust fund to pay for site restoration and spent fuel management costs, which would require special approval.

As it stands, the fund isn't large enough to cover Holtec's expected costs. There was \$564 million in the trust as of June 30, but the company expects it will cost \$644 million to decommission Palisades and rehabilitate the site. "We recognize that there is not sufficient funding in the trust fund to complete decommissioning on a shorter time frame," Holtec spokesman Joseph Delmar said.

The company plans to make up the difference by delaying decommissioning for a decade, allowing the trust fund to grow through interest while waste sits in temporary storage.

Companies can decommission nuclear plants using two strategies: decontamination, which is faster and involves removing contaminated fuel and equipment from the site, or safe storage, which allows them to leave waste in place to decay for up to 50 years before the site is decontaminated.

Holtec's plan for Palisades is somewhere in the middle, with fuel resting for a time while the trust fund grows.



A peek through the fences of the Palisades Power Plant in Covert. CHRIS DUMOND, CHRIS DUMOND, SPECIAL TO THE DETROIT NEWS

"We want to be fiscally responsible and conservative with the work that we're doing and make sure that there is enough funding there," Delmar said. "We'll resume decommissioning activities in 2035 and look to complete in 2041."

The plant is slated for closure in May. From 2022 to 2025, Holtec will remove fuel from the spent fuel pools and put it into dry cask storage on the Palisades site, Delmar said. It will sit there until 2035 while the trust fund is expected to grow.

If that wait-and-collect-interest period is not enough, the company will use "an alternate funding mechanism" to cover the difference, Holtec wrote in the December activities report. Delmar declined to elaborate on what the alternate funding mechanism would be. He said the company would only have to put that mechanism in place after decommissioning work begins.



Michigan Attorney General Dana Nessel MAX ORTIZ, THE DETROIT NEWS

Nessel's office argued the company is relying on "a series of unreasonable assumptions" about the trust fund's ability to cover its decommissioning costs. Holtec has drastically

underestimated what it will cost to clean up the site and overestimated how much the trust will grow, the Attorney General's office said.

Delmar declined to respond directly to the concerns raised by Nessel's office and opposing environmental groups. The Nuclear Regulatory Commission will thoroughly review the company's finances before approving the transfer, he said.

"We would anticipate that they would find that we possess the proper financial and technical expertise to safely and efficiently complete decommissioning (at Palisades) similar to the other projects that Holtec is currently decommissioning," Delmar said.

## Cleanup cost estimates vary

The Nuclear Regulatory Commission [estimates](#) decommissioning a nuclear plant costs between \$280-\$612 million, although it was criticized for providing unreliable estimates in a 2012 [Government Accountability Office report](#).

There are 87 nuclear sites undergoing decommissioning, [according to a list](#) maintained by the Nuclear Regulatory Commission. Nineteen are power reactors.

Recent decommissioning projects have cost more than those estimates and more than the \$644 million Holtec plans to spend on decommissioning Palisades.

Haddam Neck in Connecticut cost \$893 million to decommission in 20 years, [according to the U.S. Energy Information Administration](#). Kewaunee Nuclear Power Plant in Wisconsin, which shut down in 2013, is projected to cost more than \$1 billion and won't be completed until 2073.

Other plants also have more money saved in their decommissioning trust funds.

Holtec is decommissioning three other plants and is not using the approach it plans for Palisades, which is to pause work while the trust grows. Those plants — Indian Point Energy Center, a large plant in New York; Pilgrim Nuclear Power Station in Massachusetts; and Oyster Creek Nuclear Generating Station in New Jersey — had trust funds of \$2.4 billion, \$1.08 billion and \$967 million, respectively, when Holtec acquired the licenses.



*Dry casks containing spent fuel assemblies are stored at Holtec's Indian Point Energy Center in Buchanan., N.Y., in this April file photo. SETH WENIG, AP*

Palisades' trust fund could have been larger. When Consumers sold the plant to Entergy in 2007, the companies returned \$189 million of the trust to Consumers ratepayers, according to a press release at the time. The refund was approved by the Michigan Public Service Commission. The commission's then-Chairman J. Peter Lark said the sale and resulting power purchase agreement provided "significant benefits to ratepayers."

A year later, the public service commission [allowed](#) Consumers to return another \$127 million from the fund to ratepayers as a concession in allowing Consumers to raise prices.

## **Critics: More cash required**

Beyond Nuclear's Keegan believes regulators should require Holtec to put up collateral to ensure it completes decommissioning. The company should put \$500 million in escrow and get it back when the cleanup is complete, he said.

Requiring the company to put a financial stake in the decommissioning is prudent, he said, "considering the damage that Holtec could do to Lake Michigan, considering the damage that could occur if a spent fuel pool or a dry cask starts to fail."

Delmar said he would not comment on "conjecture by outside groups" and said Holtec would follow the plan it submitted to the regulatory commission. He maintained Holtec is equipped to do the work safely.



*Radioactive waste specialist Kevin Kamps with Beyond Nuclear stands in front of Palisades Power Plant. Kamps argues that Holtec International doesn't have enough money to complete the decommissioning of Palisades, which is set to shut down next year.*

CHRIS DUMOND, CHRIS DUMOND, SPECIAL TO THE DETROIT NEWS

Financial concerns are directly tied to safety concerns, said Kevin Kamps, also with the anti-nuclear group Beyond Nuclear, who grew up near Palisades in Kalamazoo. Holtec's plans to rely solely on the decommissioning trust fund, a limited pool of money, means they have an incentive to cut corners to make a profit, he said.

Kamps has little faith in the federal regulators, arguing their lax oversight has allowed companies to offload contaminated properties to the public. He pointed to Big Rock Point Nuclear Plant in Charlevoix, which shut down in 1997 and [was considered remediated in 2006](#), although low levels of radioactive contamination remain on the site.

Holtec also would acquire Big Rock Point site through the Palisades license transfer.

"This proceeding will directly affect a significant number of the people of this state who live and work around both the Palisades Nuclear Plant and the retired Big Rock Nuclear Plant," Nessel wrote in her motion to regulators. "These residents who reside in Michigan suffer an injury in

fact in the form of increased radiological risk as a result of the proposed licensee's failure to establish appropriate financial qualifications."

Michigan Attorney General Dana Nessel, from a filing to regulators

**This proceeding will directly affect a significant number of the people of this state who live and work around both the Palisades Nuclear Plant and the retired Big Rock Nuclear Plant. These residents who reside in Michigan suffer an injury in fact in the form of increased radiological risk as a result of the proposed licensee's failure to establish appropriate financial qualifications.**

Requests to intervene filed by the attorney general, Environmental Law and Policy Center, Beyond Nuclear, Michigan Safe Energy Future and Don't Waste Michigan "are currently pending before the commission," commission public affairs officer Prema Chandrathil said, although she declined to say whether the commission would respond.

Commissioners will evaluate the Palisades license transfer application "in order to assure that the licensed entity has the capability to meet the financial qualifications and funding aspects to safely decommission the plant meeting agency regulations," she said.

Decommissioning is not without risk — the company in charge of decommissioning the La Crosse Boiling Water Reactor in Wisconsin spilled 400 gallons of radioactive water into the Mississippi River, [the LaCrosse Tribune reported in 2018](#), although the Nuclear Regulatory Commission said the water did not pose a risk to public health. Radioactive material — detected by elevated levels of tritium — also leached into groundwater during decommissioning of the Wisconsin plant. The Nuclear Regulatory Commission reported it also had not impacted public health and safety.

It's unclear whether Michigan's attorney general and aligned environmental groups will get their chance for a hearing to scrutinize Holtec's plans for Palisades, which they say could help ensure the company is up to the task of keeping the plant safe, said Peter Bradford, a former nuclear regulatory commissioner.

"Like all federal agencies, the commission is in transition as a new president appoints new commissioners," he said. "It's hard to know right now what to expect."

The five-member commission has two appointees by Republican former President Donald Trump and one appointee by Democratic former President Barack Obama. President Joe Biden, a Democrat, designated Trump appointee Christopher Hansen as the commission's chairman on Jan. 20, and two seats are vacant.

Nessel's office has not received a response from the Nuclear Regulatory Commission about getting a hearing, Assistant Michigan Attorney General Michael Moody said. State attorneys could take their complaint to federal court — [like New York Attorney General Letitia James](#)

[did](#) when the NRC denied her request for a public hearing regarding the license transfer request between Entergy and Holtec for the Indian Point nuclear plant — he said, but "would want to review the NRC order before committing to an appeal."

Michigan is not the first state to fight a Holtec decommissioning bid. Attorneys general in New York and Massachusetts raised similar concerns about the company's finances and made some progress in their attempts to intervene.



Holtec International, founded in 1986, only recently turned to decommissioning work when it purchased sites in 2019. MATT ROURKE, AP

New York, for example, [negotiated an agreement](#) with Holtec that allowed the state to establish an oversight board to monitor Indian Point decommissioning and cleanup work. Holtec was required to ensure money remained in the trust fund, put some of the revenue it earns from the federal government for storing fuel on-site into the trust fund, put money into local emergency response efforts and report publicly on the decommissioning work and financing.

It makes sense for Michigan officials to question Holtec's financial plans, said Bradford, an appointee of Democratic former President Jimmy Carter who served as a commissioner in the 1970s and 1980s. Money is a recurrent problem in the nuclear power industry, he said.

While no company has had to ask for help with decommissioning a plant, Bradford said it's common for nuclear construction projects to hugely exceed initial cost estimates, which means companies bill customers for extra construction costs. That is happening in Georgia, where

construction of two reactors [could cost billions of dollars more than originally planned](#), a cost the company said might fall to ratepayers.

"One of the things that clearly has the potential to go wrong is that decommissioning, like everything else in nuclear construction history, could incur substantial cost overruns," Bradford said.

"Since you have only a fixed pot of money to deal with it, you could reach a point at which the entity with the decommissioning responsibility would be turning its pockets inside out and shrugging its shoulders, saying 'I guess we need help from the state, or help from the customers, or help from the federal government.'"

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