An Open Letter to The Advisory Committee on Reactor Safeguards
Concerning the Safety of the Palisades Nuclear Plant
September 10, 2025

In January 1986, two NASA contract engineers identified that the Challenger Space Shuttle was endangered if it were to be launched in cold weather. Those engineers used all the professional channels available to prevent the launch. But the bureaucratic inertia within NASA to maintain the launch schedule caused those NASA engineers to be overruled. We all know the outcome of that safety lapse. I write to you today in the spirit of those two NASA engineers as I continue to express my safety concerns to the members of the ACRS. You provide the last possible public safety oversight before resurrecting the Palisades nuclear plant.

First, I wanted to thank you for allowing me to share my concerns about the condition of the diminished integrity of the Reactor Coolant System at Palisades for five minutes during the Palisades subcommittee hearing on August 21, 2025. And I also want to thank you for your thoughtful Steam Generator questions to the NRC staff during the full committee meeting of September 3, 2025. I appreciate that the ACRS appears to be taking its oversight of the Palisades "resurrection" precedent seriously.

That said, new information just placed on the Palisades docket has amplified my previously expressed concerns. I know the NRC staff has not been forthcoming with information for me to analyze as an expert. I fear that the NRC staff has not been forthcoming to the ACRS either. Never in my 54 year professional career have I been more concerned about the integrity of the reactor coolant pressure boundary than I am about the condition of Palisades. Please let me explain.

All operating nuclear reactors are required to provide detailed Steam Generator (SG) Tube Inspection Reports to the NRC identifying flaws discovered during eddy current inspections. Six months after the inspections are completed, these detailed tube inspection reports become available to experts like me in the Public Document Room (PDR). Based on my prior industry experience, I knew that prolonged corrosive chemical exposure from extended shutdowns is deleterious to the metal components in both the Reactor Coolant and Secondary systems. I suspected that degradation was occurring at Palisades after it was permanently closed by Entergy in May 2022 and acquired by Holtec in June of 2022. But I had no hard data from the PDR to support my concerns. The last detailed Palisades SG tube Inspection Report in the PDR is from the 2020 SG inspections performed by Entergy. Five years of tube inspection data on both the primary and secondary systems is lacking from the PDR.

Since Holtec acquired Palisades, it appears to have used regulatory loopholes to avoid filing years of detailed Steam Generator Tube Inspection Reports indicating the extent of the damage. The NRC Staff has even acknowledged that Holtec has failed to provide some Steam Generator inspection details, which is why the NRC staff delayed issuance of the SG sleeving LAR. Here is the NRC's statement about the cause of that schedule delay:

> NRC staff has estimated that this licensing request will take approximately 940 hours to complete. The NRC staff expects to complete this review by September 30, 2025. Due **to**

the eddy current qualification data not being provided by the licensee, the review date is beyond their originally requested date of August 15, 2025. (March 20, 2025, https://adamswebsearch2.nrc.gov/webSearch2/main.jsp?AccessionNumber=ML25076A177)

There are only two publicly available documents that discuss the condition of Palisades SG tubes. The first is the September 18, 2024 Preliminary Notification of Occurrence (PNO) (ML24262A092) issued by the NRC staff based on their concerns after the shocking August 2024 Holtec SG inspection results. The second is a letter containing meeting notes from October 1, 2024 (ML24262A092) between Holtec and the NRC that summarize the August inspection and make vague promises about follow-up analyses. That's it. If additional information is in the possession of the NRC staff, it should also be in in the PDR, and there is no such information. That leads me to the conclusion that the NRC staff is not in possession of some critical Steam Generator tube inspection data from 2024 and 2025.

In your September 3, 2025 meeting, the NRC staff told the ACRS that approximately 3,000 sleeves were inserted into about 700 tubes since May of 2025. Each sleeve is 18 inches long, which means that 4,500 feet of sleeves (0.85 miles!) were installed. That is an astounding length of sleeving and is not supported by the publicly available flaw data from the September 18 and October 1, 2024 PDR documents. For an expert like me, it would be a simple matter to compare the existing 2020 Entergy Inspection with both the 2024 and 2025 Holtec Inspections to search for trends and their root cause of the increased cracking indications, but none of the 2024 and 2025 inspection data is available. However, it appears likely that the tube damage that was identified and sleeved in 2025 exceeded the tube damage that was identified in 2024.

The general rule for plugging is that tubes are sleeved or plugged when an indication has reached or exceeded 40% through wall. So a 20% indication will not be plugged but will be reexamined during the next refueling outage based on Electric Power Research Institute (EPRI) water chemistry guidelines. But the chemical hideout at Palisades is anything but normal. When Holtec did examine the tubes in 2024, it found some previously unaffected tubes had Stress Corrosion Crack indications exceeding 80% through wall cracks after remaining in cold unpressurized water for two years. Slow, anticipated crack growth that EPRI assumes is not realistic for Palisades. Hence 3,000 sleeves, already a huge number, may be inadequate to prevent additional tube failures because of hideout before the next Palisades Steam Generator inspections.

Traditionally, eddy current testing begins several inches above the tube sheet. The tube sheet is part of the reactor coolant pressure boundary which is where chemical hideout would be expected to be most prevalent. Because of this hideout, it is not clear that either the SG tubes or the SG tube sheet will survive for even half a year after Palisades "resurrection" is complete.

Now, new information of degradation has become available. In addition to all the steam generator tube and tube sheet indications indicating both SCC and PWSCC in the steam generator, on August 20, 2025 Holtec filed a series of relief requests (ML25232A195) indicating that it has discovered Primary Water Stress Corrosion Cracking (PWSCC) in at least eight dissimilar metal welds within Palisades Primary Coolant System. The affected welds include indications in two hot leg welds, four cold leg welds and two pressurizer welds.

The record indicates that Holtec did not take samples of either primary or secondary water chemistry at Palisades for two years and also that it is aware that Palisades was not in compliance with EPRI water quality guidelines. Clearly the absence of adequate water chemistry control at Palisades and its effect on the primary coolant system boundary are issues that deserve the thorough attention of the ACRS before allowing Palisades to set a new licensing precedent. This is a generic issue, as there are other decommissioned reactors now in the queue to be resurrected that have also not maintained adequate water chemistry during closure.

The existing evidence suggests that the reactor coolant pressure boundary degradation detected was caused by inadequate water chemistry control at Palisades, which places the facility in violation of two General Design Criteria:

> *Criterion 14—Reactor coolant pressure boundary*. The reactor coolant pressure boundary shall be designed, fabricated, erected, and tested so as to have an extremely low probability of abnormal leakage, of rapidly propagating failure, and of gross rupture.
>
> *Criterion 15—Reactor coolant system design*. The reactor coolant system and associated auxiliary, control, and protection systems shall be designed with sufficient margin to assure that the design conditions of the reactor coolant pressure boundary are not exceeded during any condition of normal operation, including anticipated operational occurrences.

The last time a steam generator tube completely ruptured was at Indian Point more than two decades ago. The condition of both the Primary Coolant System and the Steam Generators is even worse at Palisades with extensive SCC and PWSCC already identified. Luckily Indian Point's design allowed it to dump the radioactive steam into the condenser where it was contained. Palisades does not have this feature and would use Atmospheric Dumps to discharge radioactivity directly into the atmosphere.

Previously, I have seen the ACRS advise the NRC staff and vendor (General Electric) of its concerns that regulatory expediency was placed before public safety. About two decades ago, I was one of a few experts who petitioned the ACRS to evaluate Net Positive Suction Head concerns relating to the request for regulatory relief on Containment Overpressure during Boiling Water Reactor Power Uprates. The ACRS did the right thing then by refusing to allow for the containment overpressure relief which was championed by the NRC staff and GE. I have previously applauded the ACRS personally for making that decision.

My concern initially started with SCC and PWSCC discovered in Palisades' SGs but new Holtec relief requests have identified significant PWSCC corrosion at eight other locations within the reactor coolant system. The loss of the reactor coolant pressure boundary can lead to previously unimaginable impacts to the general public. The ACRS must be keenly aware of what could happen in the event of primary coolant system failure or a Steam Generator tube failure due to years of neglect from improper wet layup by Holtec at Palisades.

I pray that you will thoroughly question the integrity of the reactor coolant pressure boundary and steam generator tubes caused by Holtec's failure to meet EPRI primary and secondary water chemistry standards before allowing Palisades to set a new licensing precedent.

Thank you,

Arnie Gundersen
Expert Witness for Beyond Nuclear, Don't Waste Michigan, *et al.*