

NRC finds radiation safety lapses during Palisades restart work

By [Garret Ellison | gellison@mlive.com](mailto:gellison@mlive.com)

COVERT, MI — Workers at the Palisades nuclear plant were not evacuated or warned after airborne radioactivity exceeded internal action levels during reactor repairs, federal inspectors found.

The U.S. Nuclear Regulatory Commission issued two low-level violations this week after finding Palisades failed to properly control radioactive contamination and evaluate potential internal radiation doses to workers.

The violations occurred during work between December 2025 and March 2026 but were detailed in an [NRC inspection report](#) dated Aug. 31.

The report comes the same week Holtec International [began loading nuclear fuel](#) into the core at Palisades, a 1970s-era reactor near South Haven which Holtec is attempting to bring back into operation.

Holtec Palisades spokesperson Nick Culp acknowledged the inspection report deficiencies and said the plant took subsequent evaluative steps and corrective action.

“The performance did not meet our standards, and we take this issue very seriously,” Culp said.

“Some workers received greater-than-expected dose associated with these work activities,” Culp said. “At no time did any worker approach federal occupational radiation dose limits.”

Neither violation involved a documented worker exposure exceeding federal limits, according to the NRC. Both were classified as “green,” the agency’s lowest safety significance level, and treated as non-cited violations without a fine.

However, inspectors concluded the failures were preventable and “more than minor” because some personal air samples indicated workers could have received unintended radiation doses greater than 100 millirem.

The problems were discovered during work on fuel handling equipment inside the reactor building and a shutdown cooling heat exchanger inspection.

According to the report, maintenance workers entered an area called the “tilt pit” to work on fuel handling equipment in February. The workers wore respirators and personal air samplers. Airborne radioactivity inside the pit reached 173 times the NRC’s derived air concentration on Feb. 11 and 469 times that concentration on Feb. 13.

A derived air concentration, or DAC, is a regulatory measurement used to evaluate the concentration of radioactive material in workplace air. The readings do not mean workers received 173 or 469 times an allowable radiation dose because actual exposure depends on factors such as protective equipment and time spent in the area.

Most of the airborne radioactivity consisted of alpha-emitting dust. Alpha particles cannot penetrate skin and can be stopped by paper or clothing but deliver intense radiation to tissue if inhaled or swallowed.

A floor survey of the pit area found alpha contamination at levels exceeding the plant’s stop work criteria.

Inspectors also found that monitoring equipment did not provide workers with a real-time warning of the alpha contamination. A continuous air monitor was not positioned near the work and did not detect alpha radiation. Other samples were analyzed only after workers had completed their shifts and left the area.

Workers performing support functions on the floor above and around the pit did not wear respirators, although they carried personal air samplers. Radioactivity in that area reached 2.21 DAC on Feb. 11 and 3.82 DAC on Feb. 13.

Palisades procedures required action when an unposted area reached 0.3 DAC. Those procedures called for stopping work, evacuating the area, collecting additional samples, notifying workers, posting the location as an airborne radioactivity area and documenting the incident in the plant's corrective action program.

Inspectors found those steps were not followed.

A follow-up sample was not collected until about eight hours after the elevated Feb. 11 reading and about 16 hours after the Feb. 13 reading. Workers were not evacuated or informed, the area was not posted or controlled and no condition reports were generated.

The area was frequently occupied because an equipment hatch used to enter and exit the reactor containment building was near the tilt pit, inspectors said.

Similar problems occurred during work on a shutdown cooling heat exchanger.

Airborne radioactivity inside the controlled work enclosure reached 890 DAC during one January work period, exceeding a 40-DAC stop-work threshold. Inspectors found no condition report or documentation showing how Palisades responded.

Elevated readings were also recorded in an adjacent support area where workers were not required to wear respirators or personal air samplers. However, inspectors said the exposure records they reviewed did not show any worker exceeded or approached federal occupational radiation limits.

However, the report says Palisades failed to evaluate personal air samples used to estimate whether workers inhaled radioactive material.

Plant procedures require a dose calculation when a sample indicates an internal dose of at least 10 millirem. Results of 100 millirem or more require additional biological testing and a condition report.

NRC inspectors identified 29 personal air samples that exceeded the 10-millirem investigation threshold but had not received the required dose evaluations. Several samples produced preliminary dose estimates above 100 millirem, including readings of 150, 223, 257, 311 and 690 millirem.

Palisades personnel wrote that some samples had been cross contaminated rather than showing material inhaled by workers. But inspectors found the plant did not complete documented evaluations supporting those conclusions and the method used to identify cross contamination was not included in plant procedures.

The readings do not establish that workers actually received the estimated doses because Palisades failed to complete the required evaluations to determine if the samples reflected inhaled radioactive material or external contamination, according to the report.

Inspectors also found Palisades did not evaluate potential doses to other workers who may have occupied unposted airborne radioactivity areas without respirators or personal samplers. The NRC attributed one violation to shortcomings in identifying and correcting problems. The other was attributed to human performance and failure to follow established procedures.

In response, Palisades began reviewing personal air samples dating to November 2025 and completing dose evaluations. The plant also

began a root-cause review and established additional oversight for work involving elevated radiological risks.

Ventilation around the tilt pit was upgraded during the work. Palisades initially added larger air filtering units before eventually building a containment tent over the pit, which inspectors said provided more effective control.

Culp said corrective actions taken to prevent a recurrence include “strengthened radiological controls, procedures, oversight, and staffing.”

“We have not experienced a recurrence of these issues following implementation of the corrective actions,” Culp said. “Palisades remains focused on protecting our workforce and maintaining the high standards expected of an operating nuclear power plant.”

The report comes as Holtec moves the 805-megawatt plant closer to an unprecedented return to commercial operation.

Workers began loading 204 fuel assemblies into the Palisades reactor vessel Monday, Aug. 31. The plant is not yet generating electricity and Holtec has not announced a firm date for reconnecting it to the grid. The company faces a contractual restart deadline in March 2027.

[Palisades shut down in May 2022](#) under former owner Entergy and entered the federal decommissioning process. Holtec originally purchased the plant to dismantle it but subsequently began pursuing a restart backed by a federal loan of up to [\\$1.52 billion](#) and \$300 million from Michigan taxpayers.

If successful, Palisades would become the first U.S. commercial nuclear plant returned to service after entering decommissioning.