

# Aging Industrial Infrastructure Raises Safety Concerns as Welding Inspections Spike 41% Across U.S. Facilities

*Welding inspections have surged 41% nationwide as aging industrial infrastructure raises safety risks across U.S. facilities.*

BAKERSFIELD, CA, UNITED STATES, January 1, 2026 /EINPresswire.com/ -- Industrial welding inspections across the United States have increased by 41% over the past several years, according to a convergence of federal safety data, engineering boards, and industrial maintenance reports, signaling growing concern over the condition of the nation's aging industrial infrastructure.

From refineries and food processing plants to power generation facilities and cement operations, much of America's industrial backbone was constructed between the 1950s and 1980s. Today, those systems are operating far beyond their original design life. As a result, regulatory agencies, insurers, and plant operators are accelerating inspections of [welded joints](#), pressure vessels, [piping systems](#), and structural steel to prevent catastrophic failures.

According to the American Society of Mechanical Engineers (ASME), more than 60% of pressure vessels and piping systems currently in service exceed their intended operational lifespan, increasing the likelihood of metal fatigue, corrosion, and weld degradation. The National Board of Boiler and Pressure Vessel Inspectors (NBBI) has similarly reported a steady rise in repair and alteration filings tied to aging infrastructure, particularly in high-pressure environments such as refineries, power plants, and chemical facilities.



Ruben Espinosa, Owner of Raw Welding Inc., overseeing industrial welding operations in Bakersfield, California.

## A National Infrastructure Risk Comes Into Focus

The issue has gained urgency amid heightened enforcement by federal regulators. The U.S. Occupational Safety and Health Administration (OSHA) reports that citations related to equipment failure, structural integrity, and inadequate maintenance have increased in industrial sectors over the past five years. Welding defects and deteriorating joints are frequently cited as contributing factors in shutdowns, near-miss incidents, and workplace injuries.



Raw Welding Inc. – Welding and fabrication experts in Bakersfield, CA

At the same time, the U.S. Department of Energy has warned that aging energy infrastructure, including pipelines, boilers, and pressure systems, poses both operational and public safety risks

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Inspections are rising as aging materials, tighter safety standards, and costly failures push facilities to treat proactive inspection and certified repair as essential, not optional.”

*Ruben Espinosa*

if not proactively maintained. In response, many facilities are shifting from reactive repairs to inspection-driven maintenance strategies, driving the sharp rise in certified welding inspections nationwide.

Engineering researchers at several U.S. universities, including studies published through Texas A&M Engineering Experiment Station (TEES) and Penn State’s Materials Research Institute, have found that weld failure risk increases exponentially once industrial systems pass the 30- to 40-year mark, particularly in environments

exposed to heat cycling, vibration, and corrosive materials.

## Inspections Surge as Downtime Becomes Costlier

Beyond safety, economics are accelerating the trend. According to the Bureau of Labor Statistics (BLS), unplanned industrial downtime now costs U.S. manufacturers an estimated \$50 billion annually, with equipment failure ranking among the top causes. Even brief shutdowns at refineries, food processing plants, or renewable energy facilities can result in six-figure losses per hour.

As a result, operators are increasingly commissioning full-scope welding inspections during scheduled outages, turnarounds, and shutdowns. These inspections often uncover issues that

were previously undetectable without advanced testing, including micro-cracking, weld porosity, misalignment, and material incompatibility in older systems.

The American Petroleum Institute (API) has also updated inspection and welding standards in recent years, reflecting the industry's recognition that legacy infrastructure requires higher scrutiny than newly constructed systems.

### Bakersfield Reflects a National Pattern

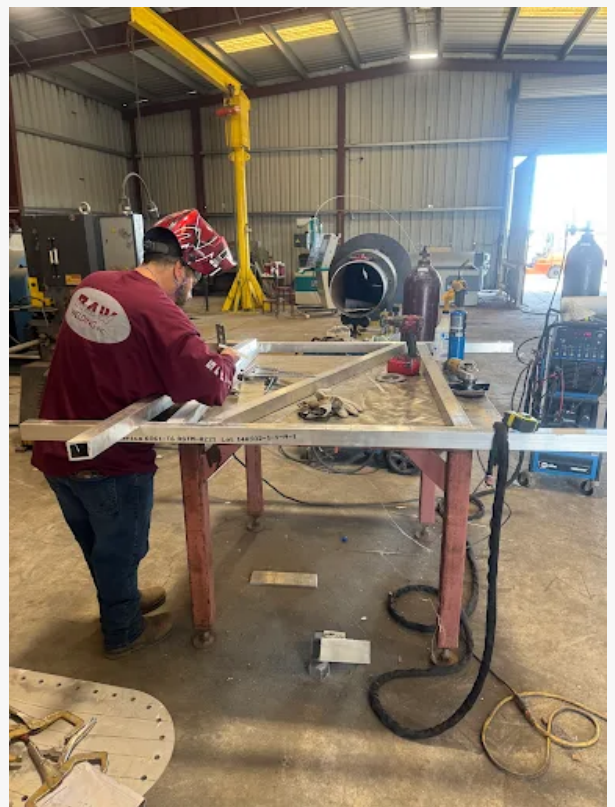
The national trend is especially visible in industrial hubs like Bakersfield, California, where oil production, food processing, renewable energy, and manufacturing intersect. Kern County alone contains thousands of miles of industrial piping, pressure vessels, and structural steel systems that have been operating continuously for decades.

Local inspection demand mirrors national data, with facilities increasingly seeking certified welders capable of addressing compliance, safety, and performance simultaneously. The emphasis has shifted from speed alone to precision, documentation, and adherence to evolving inspection codes.

### Industry Expertise Interprets the Shift

According to Ruben Espinosa, Owner of [RAW Welding Inc.](#), the increase in inspections reflects a long-overdue reckoning with infrastructure age rather than a sudden regulatory crackdown.

"Many industrial systems in operation today were never designed for the loads, production schedules, or regulatory expectations they now face," Espinosa said. "The rise in inspections is a response to reality, aging materials, stricter safety standards, and the high cost of failure. Facilities are recognizing that proactive inspection and certified repair are no longer optional."



Raw Welding Inc. truck on-site, ready to begin a fabrication project.



Raw Welding Inc. providing expert welding and fabrication services with precision and care.

Founded in 2005 and headquartered in Bakersfield, RAW Welding Inc. operates nationwide as an industrial contractor specializing in certified welding, pressure vessel repair, outages, emergency response, water jet cutting, sandblasting, and industrial maintenance. The company holds an R-Stamp certification, authorizing repairs and alterations on boilers and pressure vessels under the National Board Inspection Code.

Espinosa notes that advanced technologies are also reshaping inspection and repair expectations.

“Modern facilities require more than basic welding,” he said. “Precision cutting, certified procedures, material traceability, and documentation now determine whether a facility can restart operations safely and on schedule.”

#### From Compliance to Continuity

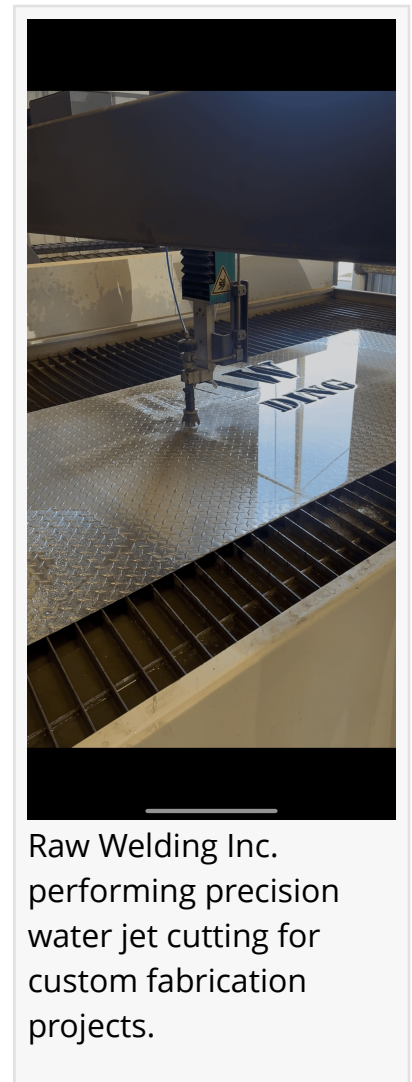
Industry analysts suggest the inspection surge represents a broader cultural shift within industrial operations, from compliance-driven maintenance to continuity-driven investment. Welding inspections are no longer viewed solely as regulatory obligations but as strategic tools to extend asset life, reduce downtime, and protect workers.

The National Institute for Occupational Safety and Health (NIOSH) has emphasized that infrastructure integrity directly correlates with injury reduction, particularly in high-risk environments involving pressure, heat, and mechanical stress.

As federal infrastructure funding, insurance requirements, and safety standards continue to evolve, inspection demand is expected to remain elevated—especially for facilities that delay modernization.

For industrial regions like Bakersfield and across California, the data suggests a clear message: aging infrastructure is no longer invisible, and welding inspections have become a frontline defense against operational and safety failures.

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