



U. S. Chemical Safety and Hazard Investigation Board

RECOMMENDATION STATUS CHANGE SUMMARY

Report:	Loy Lange Box Company Pressure Vessel Explosion
Recommendation Number:	2017-04-I-MO-R5
Date Issued:	July 29, 2022
Recipient:	Board of Aldermen, City of St. Louis, MO
New Status:	Closed – Acceptable Action
Date of Status Change:	January 20, 2026

Recommendation Text:

Revise the City of St. Louis Mechanical Code to require pressure vessel inspections be performed by a National Board of Boiler and Pressure Vessel Inspectors (NBBI) inservice (IS) commissioned inspector.

Board Status Change Decision:

A. Rationale for Recommendation

On April 3, 2017, an explosion occurred at the Loy-Lange Box Company (Loy-Lange) in St. Louis, Missouri when the bottom head of a pressure vessel (called a Semi-Closed Receiver (SCR)) catastrophically failed. The pressure vessel failure caused a boiling liquid expanding vapor explosion (BLEVE) which fatally injured a Loy-Lange employee working nearby. The pressure vessel then launched from the Loy-Lange building into the air and crashed through the roof of a nearby business, fatally injuring three members of the public.

The U.S. Chemical Safety and Hazard Investigation Board (CSB) investigated the incident and found that the failed pressure vessel resulted from oxygen pitting corrosion and generalized corrosion which thinned the pressure vessel bottom head until it could no longer contain the pressure inside the vessel. The CSB determined that the cause of the incident was deficiencies in Loy-Lange's operations, policies, and process safety practices that failed to prevent or mitigate chronic corrosion in the pressure vessel as well as Kickham Boiler and Engineering, Inc.'s performance of an inadequate repair to the SCR in 2012 that left damaged material in place. The CSB identified additional issues in their overall regulatory compliance as well as with their records and data management. As a result of these findings, the CSB issued two recommendations to Board of Aldermen, City of St. Louis, MO. This status change summary addresses CSB Recommendation No. 2017-04-I-MO-R5.

B. Response to the Recommendation

During the fall of 2025 the City of St. Louis passed a bill titled *Rules of Conduct Pertaining to Inspections and Inspector Qualifications Regarding Heating Boilers, Pressure Vessels and*

*Steam Generators*¹. This bill amended the City's existing boiler and pressure vessel ordinance (Ordinance Number 70800) to require rules of conduct pertaining to inspections and inspector qualifications regarding heating boilers, pressure vessels and steam generators in accordance with the National Board Inspection Code. The bill was introduced on September 19, 2025, passed with a vote of 14 to 0 on October 10, 2025, and was approved by the Mayor on October 15, 2025. The new ordinance (Ordinance Number 72037) became effective November 15, 2025. As a result, the annual inspections of all boilers, steam generators, and pressure vessels, such as the one involved in the Loy Lange Box Company Pressure Vessel Explosion, in the jurisdiction of the City of St. Louis will be conducted by inspectors holding current IS Commissions issued by the National Board of Boiler and Pressure Vessel Inspectors.

C. Board Analysis and Decision

The Board appreciates the work of the St. Louis Board of Aldermen and the City of St. Louis in updating their boiler and pressure vessel ordinance in response to this tragic incident. By requiring boiler and pressure vessel inspections to be conducted in accordance with nationally recognized procedures by qualified individuals, the city has taken an important step to minimize risk and assure the safety of the community. Based upon the information above, the Board voted to change the status of CSB Recommendation No. 2017- 04-I-MO-R5 to: "Closed – Acceptable Action."

¹ [2025-2026 Board Bill 69 -- Rules of Conduct Pertaining to Inspections and Inspector Qualifications Regarding Heating Boilers, Pressure Vessels and Steam Generators](#)