

ATTACHMENT A TO AMENDED SECTION 573 REPORT

Chronology of Defect/Noncompliance Determination:

Luxfer investigated a December 16, 2017 incident where the valve stem ejected under pressure, on an eight-cylinder gas transport system operated by a Canadian utility company. Luxfer learned that, before the incident, the valve body had become physically and visibly damaged and dented by external blunt force. That damage and denting of the valve body altered the alignment of the stem and related components, leading to severe over-torqueing to overcome the effect of the dented valve body. No injury or property damage resulted from the incident.

Between April and June 2018, a vehicle customer (“Customer”) that incorporated the OTV into its own proprietary CNG fuel system for garbage trucks, reported three incidents to Luxfer where the stem ejected under pressure on a valve in that CNG fuel system. Incident dates were April 11, May 24, and June 28. Luxfer’s investigation of the incidents, including extensive discussions with Customer engineers, showed that all three of the valves had been subjected to severe over-torqueing and had their snap rings removed. The June 28 incident cut a CNG inspector’s hand, requiring stitches. No property damage resulted from any of the incidents.

On July 9, 2018, as part of its investigation of the June 28 incident, Luxfer met with Customer and the garbage truck owner in Columbus, Ohio, and discussed the reported incidents. Luxfer and a certified CNG inspector worked together to inspect eight other Customer garbage trucks on-site equipped with Luxfer OTV’s, and found no evidence of damage or over-torqueing in any of the thirty-two valves. Customer and Luxfer outfitted all thirty-two of the valves in Columbus with “no tools” decals and a newly-developed knob that made tool use more difficult, which Luxfer intended to deter over-torqueing.

Customer then reported incidents occurring on August 10 and August 17 with two of its garbage trucks in Florida, where the stem on a valve in its CNG fuel system ejected under pressure. Luxfer was unable to inspect the valve from the August 17 incident, but Luxfer’s examination of the valve from the August 10 incident showed extreme over-torqueing and that the snap ring had been removed. During the August 10 incident, the stem cut a serviceman’s finger, requiring stitches. Neither incident included a report of property damage.

On September 15, 2018, Luxfer issued a Technical Bulletin warning its customers against over-torqueing the valves and offering a complimentary Upgrade Kit to mitigate over-torqueing. The Upgrade Kit provides more tolerance to over-torqueing, by keeping the snap ring constrained in place and thereby preventing the knob from rotating more than one-turn.

On November 15, 2018, Luxfer received word that an incident involving a Customer CNG fuel system on a garbage truck had occurred that same day in Mankato, Minnesota. On November 16, 2018, Luxfer received a report that the accident involved a stem on a Luxfer valve that had been ejected under pressure. One mechanic was bruised by the stem, and a second burned. Property damage resulted too.

None of Luxfer’s other ten customers have reported any incidents with their own CNG vehicle fuel systems. Aside from a single incident involving a physically damaged valve body, only one of Luxfer’s eleven CNG systems customers using this valve has reported any incidents with their own CNG vehicle fuel systems. Luxfer believes that to the extent that the issue occurs, it can occur only through extreme misuse of the subject valve.

While Luxfer believes the valve was properly designed and manufactured, and is safe for its intended use, installation of the Upgrade Kit will enhance resistance to potential over-torqueing. Accordingly Luxfer voluntarily initiated this recall on November 27, 2018, to promote adoption of the Upgrade Kit. NHTSA procedures require use of this Section 573 Report to initiate a recall under these circumstances