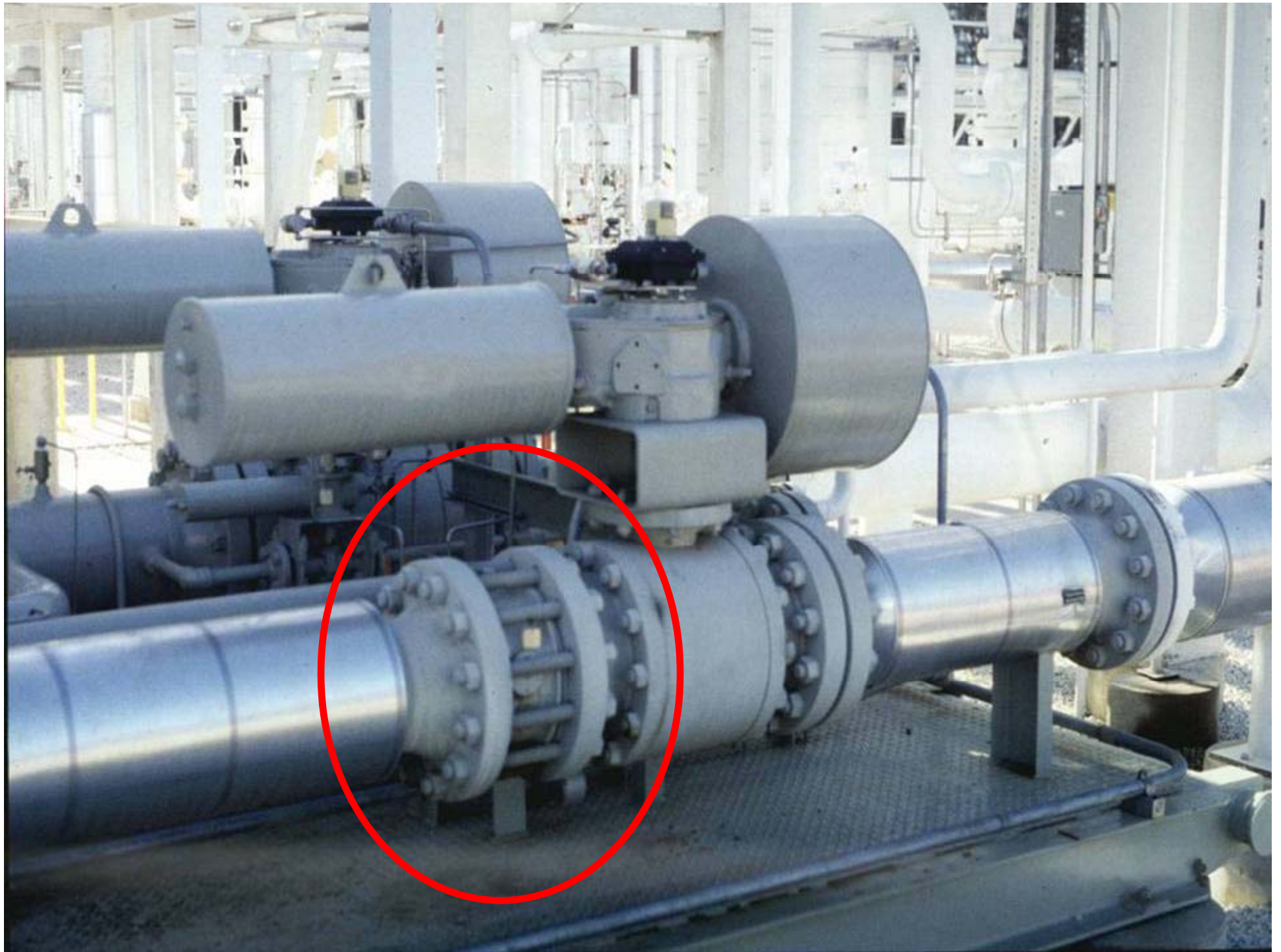


**The Problems with
Long Bolt Flanges in
process pipe
connections
when exposed to a
fire!!**



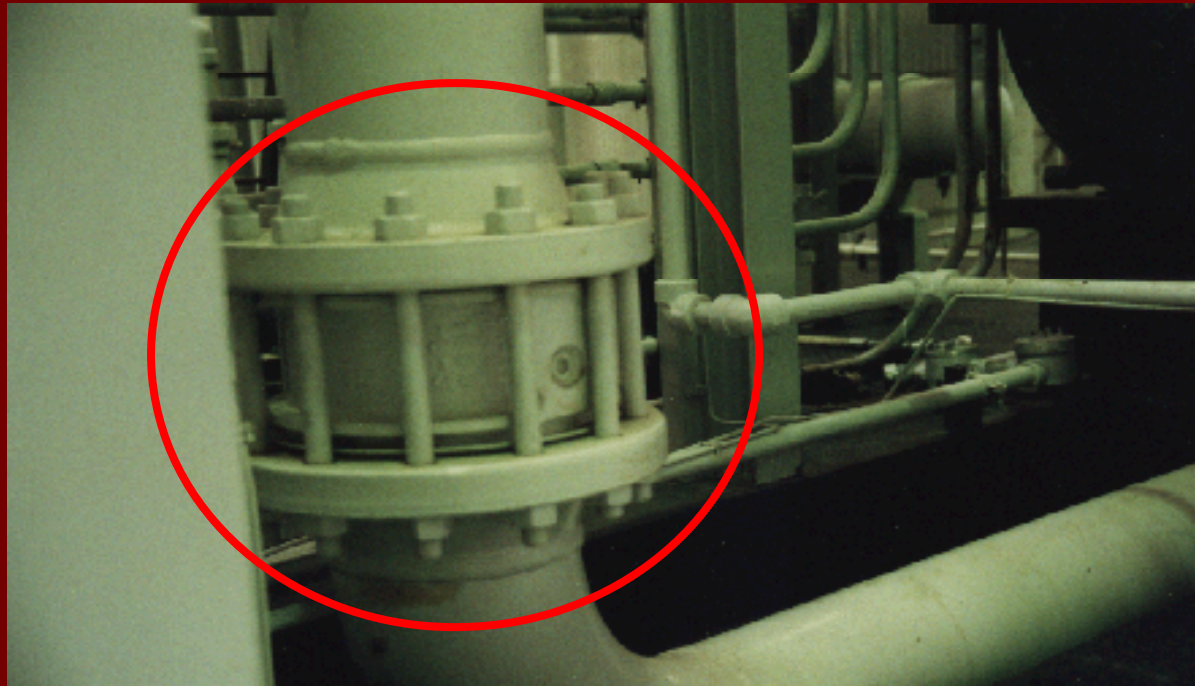




■ Long Bolt Flangeless Valves

Also called long bolt valves, sandwich, or wafer valves. Devices such as control valves, butterfly valves, check valves, etc. with no integral flanges for bolting to the pipe or vessel flanges, and thus having exposed bolts of >3-inches.

The long bolts will likely receive direct flame contact (**Impingement**) if there is a fire in the area. The direct flame contact causes the bolts to expand rapidly and lengthen, allowing both gaskets to leak product in <<20minutes. The leaking material then adds fuel to the fire and if under pressure it causes a **large spraying fire that results in much more damage.**

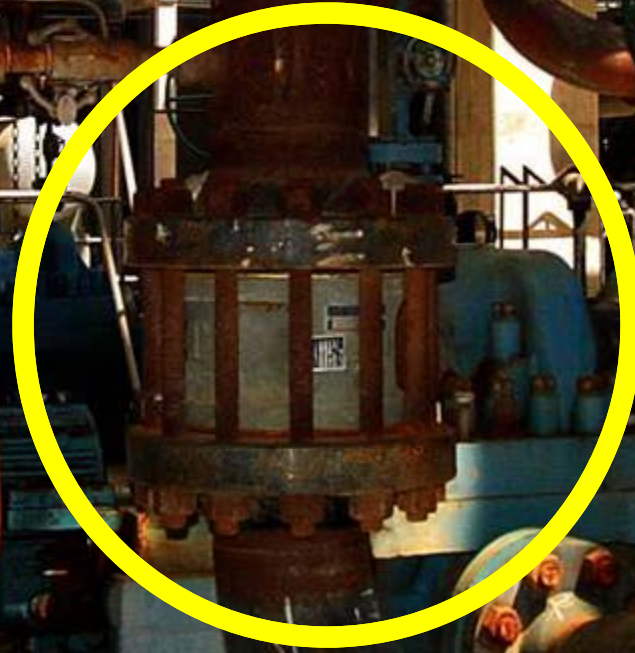






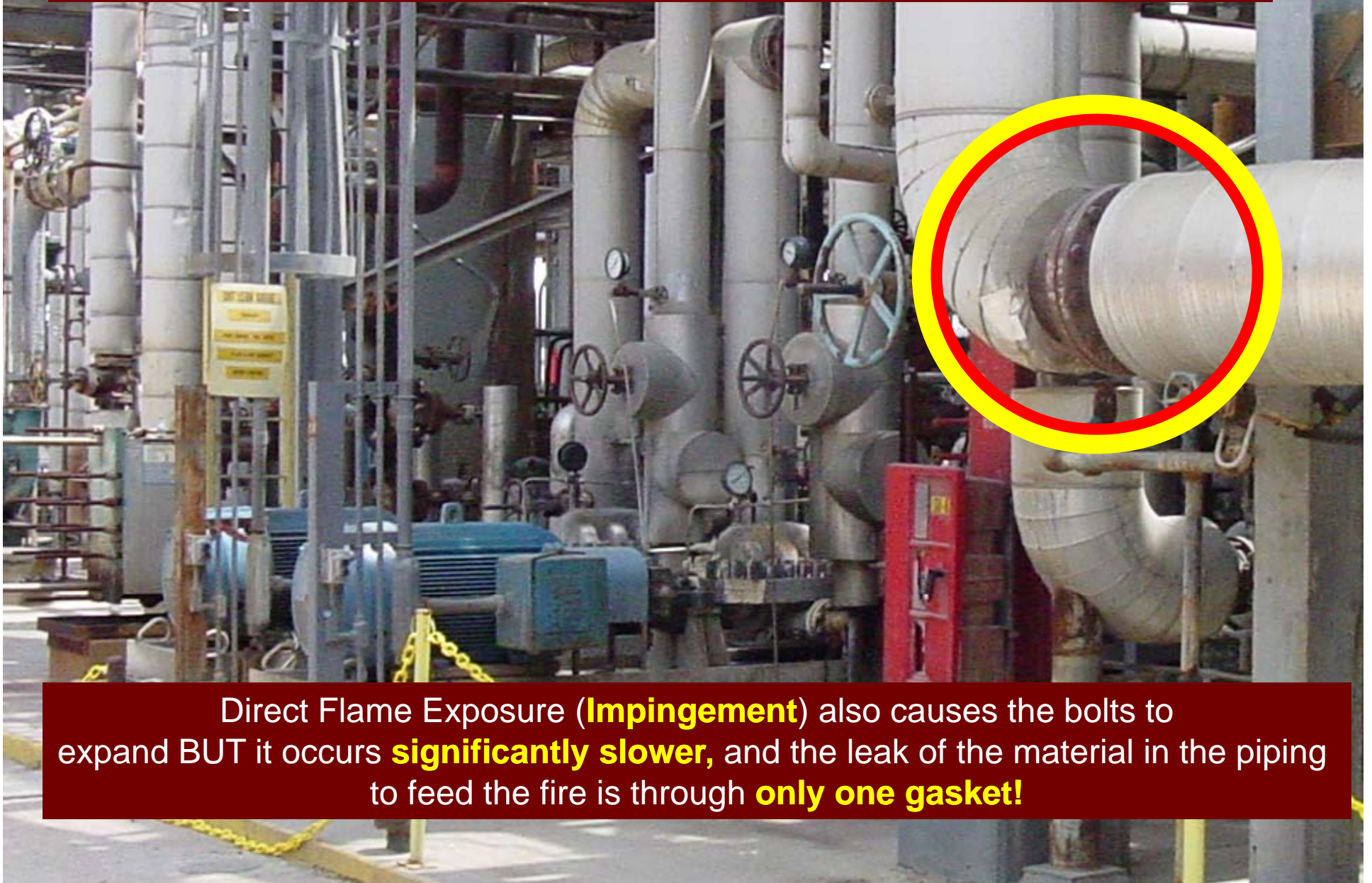


A Long Bolt Flangeless Valve =



A Special Fire Impingement Hazard

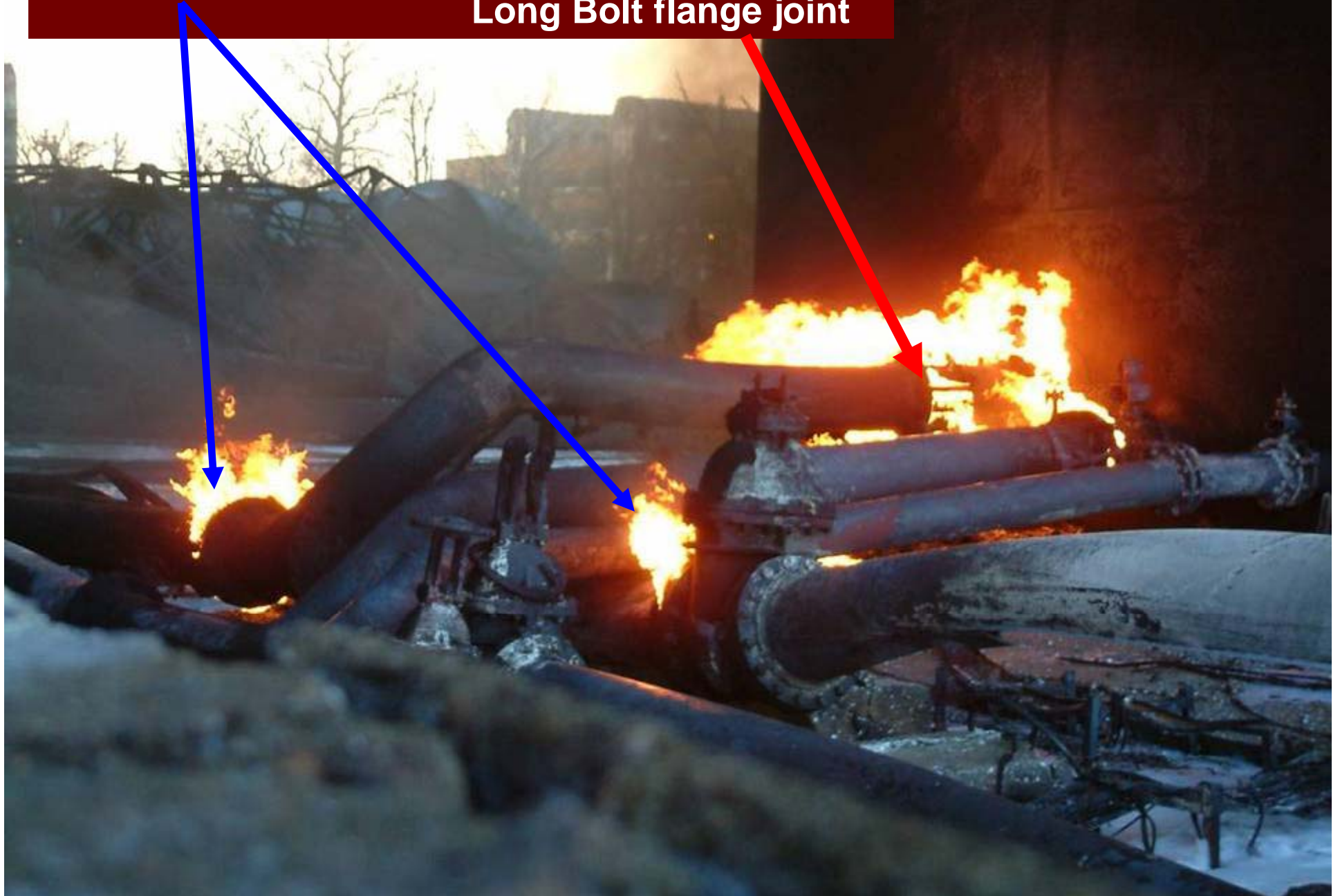
■ Standard Bolted Flanges



Direct Flame Exposure (**Impingement**) also causes the bolts to expand BUT it occurs **significantly slower**, and the leak of the material in the piping to feed the fire is through **only one gasket!**

Bolted Flange Fires

**Note the larger fire at the
Long Bolt flange joint**

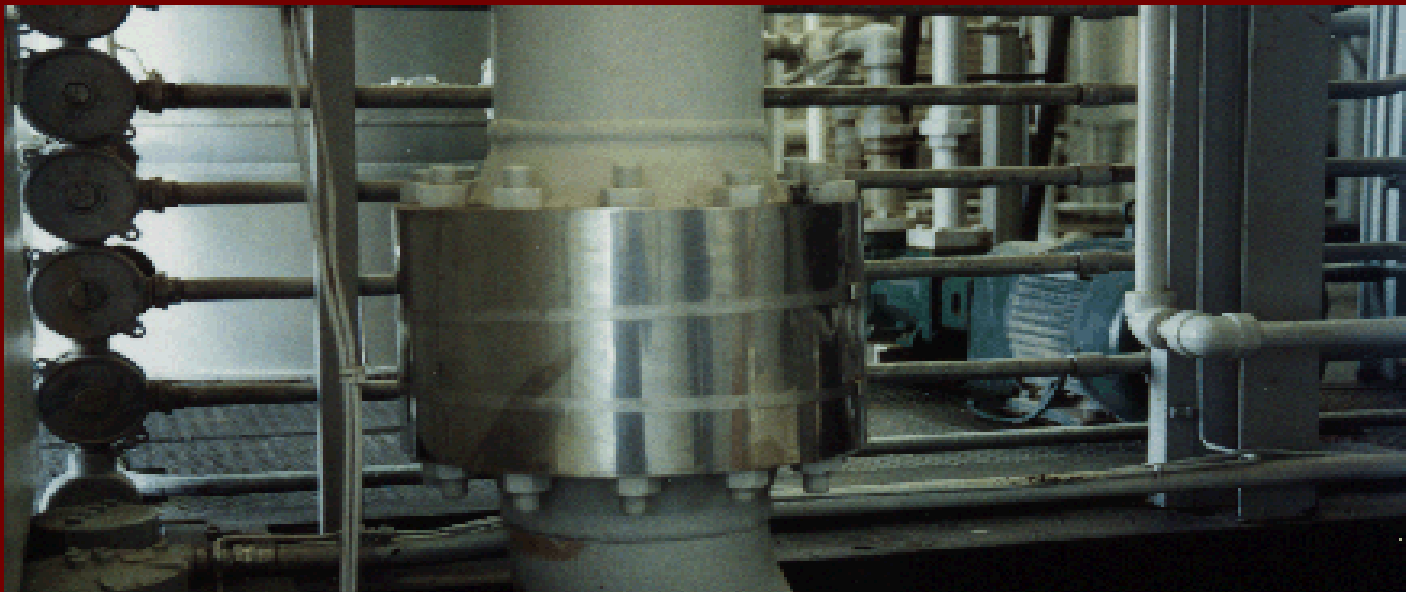


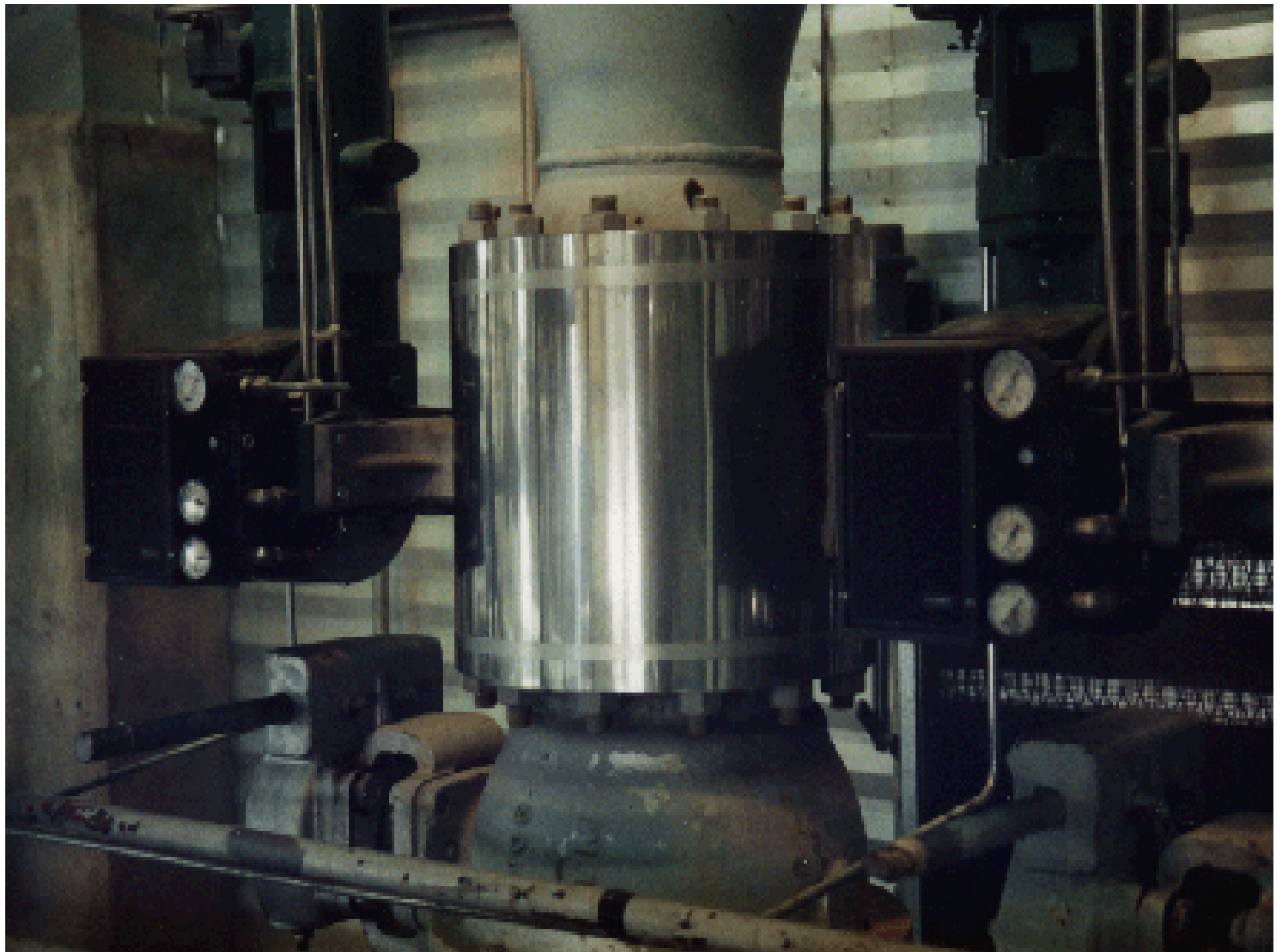
Action = Identify Long Bolt Flanges

Assess Fire hazard from the contained material and location hazards. Where possible they should be replaced with normal flange valves;

BUT

The risk from fast failing Long Bolt Flangeless Valves can be reduced by wrapping the long bolts with a fire resistant material and/or enclosing the entire assembly with a 31gauge (0.010") stainless steel covering.





Summary

Welded Pipe Joints obviously are **the best** in a fire condition, but **Standard Bolted Flange Joints** provide the best resistance to Fire Exposure **when a removable joint is needed**.

Long Bolt Flange Joints on piping in Combustible, Flammable or LPG service should not be installed in new installations and existing joints should be kept **properly covered** at ALL times **and removed/replaced** when possible.