



# Office of Recommendations

- Highlighted Recommendations
  - **Arkema Inc. Chemical Plant Fire**  
R1 to Arkema Crosby facility
  - **Pressure Vessel Explosion at Loy-Lange Box Company**  
R7 to Arise, Inc.



## Arkema Inc. Chemical Plant Fire



- Aug. 29, 2017
- Hurricane Harvey - Cat 4
- Rainfall exceeded design elevations
- Loss of power/decomp/fire
- 200 residents evac/week

CSB Rec No. 2017-08-I-TX-R1 (R1) to Arkema Crosby:

*Reduce flood risk to as low as reasonably practicable (ALARP).  
Ensure that any safeguards for flooding meet independent layer  
of protection requirements.*



## Arkema Inc. Chemical Plant Fire

Arkema Crosby implementation of R1:

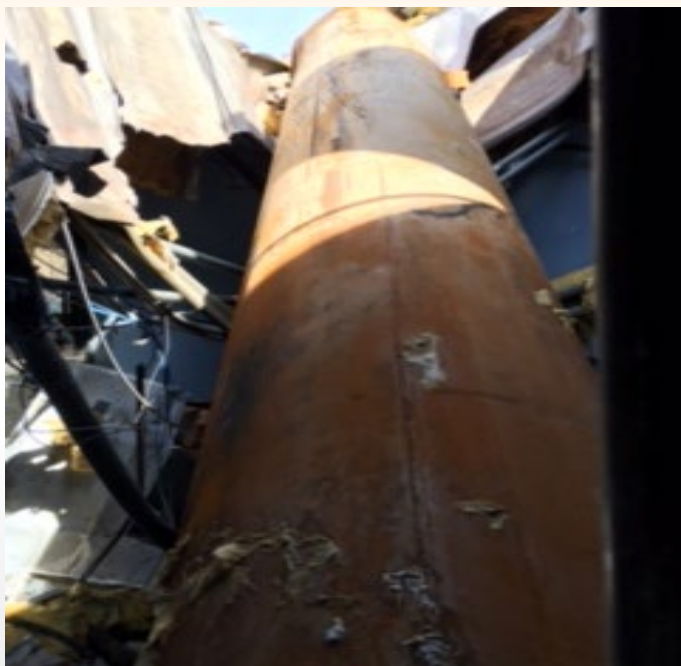


- Completed a site elevation survey and hydrology study.
- Undergone a PHA using a layers-of-protection approach.
- Received multiple updated Harris County building permits including flood elevation standard (55.5 ft above mean sea level)

**Closed – Acceptable Action**



## Pressure Vessel Explosion at Loy-Lange Box Company



- April 3, 2017
- Pressure vessel ruptured/ propelled
- Inadequate repair
- 4 fatalities (1 worker/ 3 members of the public)

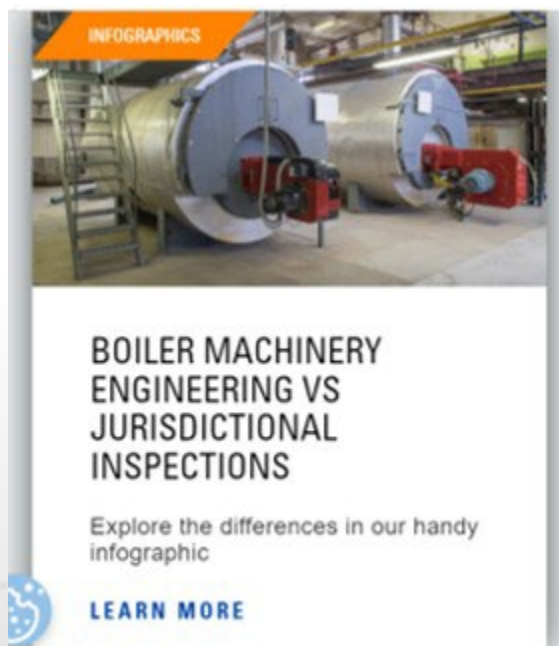
CSB Rec No. 2017-04-I-MO-R7 (R7) to Arise, Inc.:

*Include prescriptive elements in the boiler and pressure vessel repair and alteration inspection and acceptance process that would prevent the acceptance of a non-conforming repair or alteration.*



## Pressure Vessel Explosion at Loy-Lange Box Company

Arise, Inc. implementation of R7:



- Updated Quality Processes
- Included additional inspection points to verify repair compliance
- Annual audit by supervisor to verify utilization of new inspection points in addition to other criteria.

**Closed – Acceptable Action**