Collapsed Column

EPSC Learning Sheet October 2025

EPSC

What Happened:

For maintenance work, a distillation column at a refinery was stopped, cleaned and opened. Air started to react with FeS and carbon deposits inside the column. Due to the heat of the internal fire the column collapsed.

Aspects:

- Iron equipment in oil & gas environment can form FeS on the inside. Packed towers are prone to this. When opening, the FeS will react even at room temperature with oxygen. When temperature increases also (hydro-)carbon residues can burn and the heat can weaken the metal equipment quickly.
- Before opening a refinery tower, one must consider the hazards from pyrophoric or self-heating deposits.
- Chemical cleaning methods may help to reduce the risk of packing fires by removing combustible materials but cannot be assumed to be sufficient for eliminating the hazard.
- Frequent wetting and temperature monitoring can be applied to control the heat of oxidation after opening.

Be aware of Pyrophoric Hazards