

Furnace Explosion

EPSC Learning Sheet , Nov 2019



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What Happened:

During the restart of a furnace, that was tripped, an explosion occurred when igniting the burners. Furnace start-up incidents have happened all around the world with too many fatalities



Dubai 2010

Aspects:

- Purging a furnace with sufficient air, before igniting the burners is essential to remove explosive atmospheres
- Depending on furnace volume and heat capacity, automated ignition is preferred above manual ignition
- Before start, perform a leak test of valves in gas pipes to pilot and main burners and confirm gas conc. is below 10% LEL
- Close burner valve after 5 sec of opening if ignition is not successful & wait at least 1 min between two attempts
- Most operators have little training and actual experience in furnace start-ups, not knowing how to deal with problems
- Furnace start is a time critical part of the total start-up, resulting in pressure on the people performing the task
- Limit the number of restarts!
- Remove personnel from the area during a furnace start-up

Start-up of a furnace is a hazardous operation