

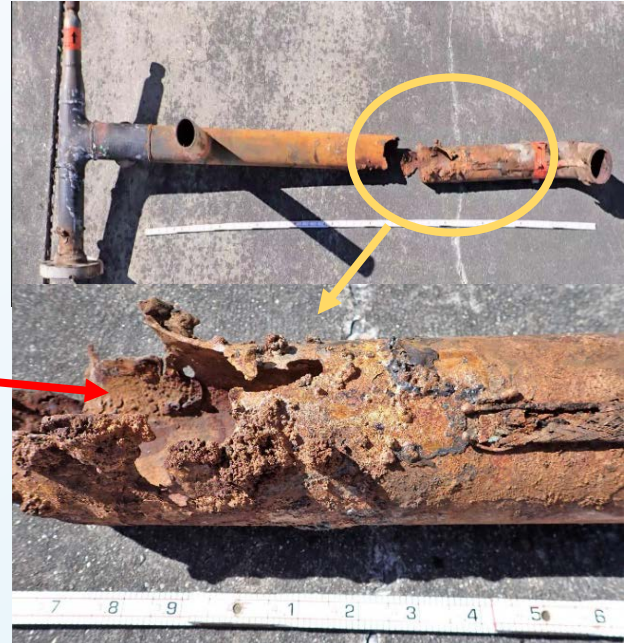
Chlorine Steel Fire

EPSC Learning Sheet December 2023



What Happened:

A Chlorine Carbon-steel fire started when a hot spot was generated by a failure of electrical heat tracing. The medium pressure 4" pipe burned completely and released toxic Chlorine.



Aspects:

- Chlorine (Cl_2) Carbon-steel fires will occur as of 250°C . The temperature is typically kept well below 150°C for Cl_2 systems. Impurities & surface area (like rust) of the steel, can lower the steel oxidation by Cl_2 to about 100°C .
- The temperature of carbon steel equipment containing Chlorine can be monitored and alarmed.
- The electrical heat tracing was damaged, created a short circuit and a hot spot. A Ground Fault Interrupter (GFI) should be present to detect the failure and stop it.
- Heat tracing lines must be well rated for the voltage supplied
- Inspect critical heat tracing systems and replace them when damaged.
- Select reliable heat tracing for Cl_2 systems, like hot water.

Heat tracing of Chlorine steel lines is safety critical

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