



Fire! Fire! Fire! (or maybe not).

Steve Wright

NLNOG – 6th September 2019

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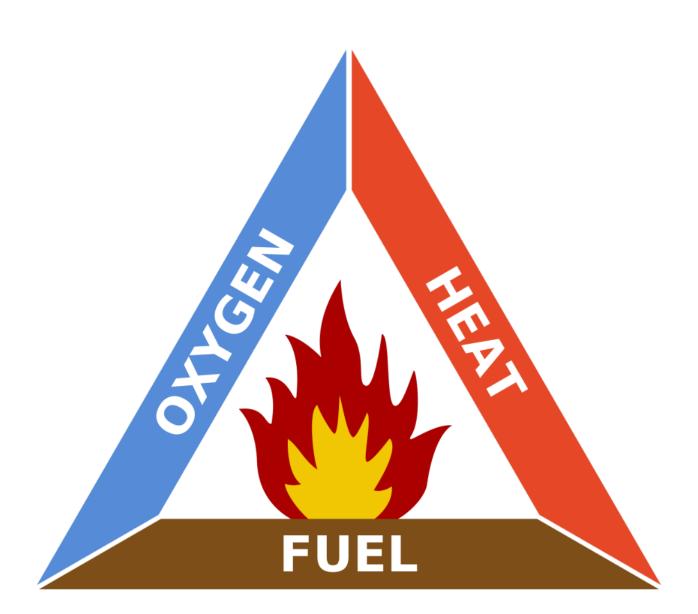




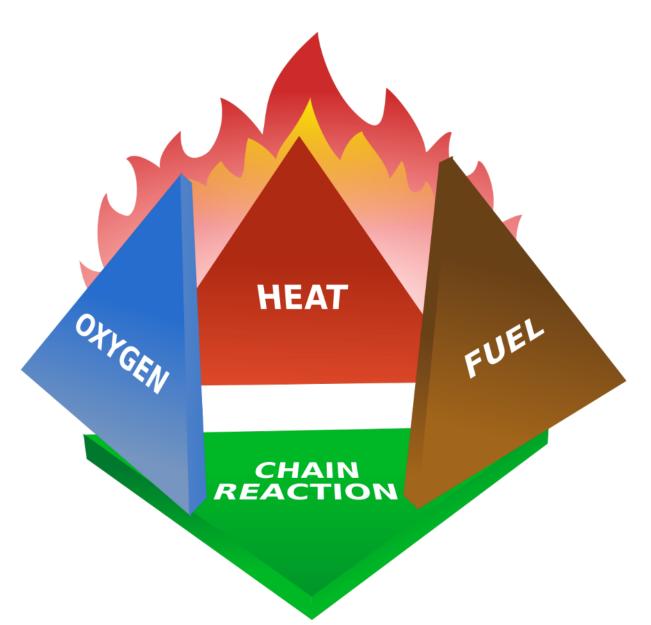
Overview

- Science 101: Fire basics
- Detecting fires
- Suppression
- After effects of a discharge
- Is it worth it?
- Questions

Fire Basics

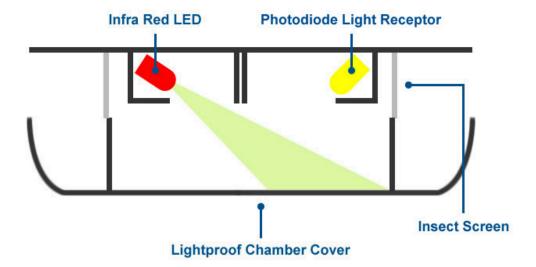


Fire Basics



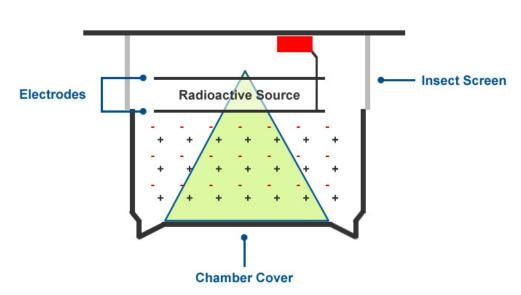
- Aspirating VESDA Very Early
 Smoke Detection Apparatus
- Smoke
 - Optical
 - Ionisation
- Heat (too late)

Optical

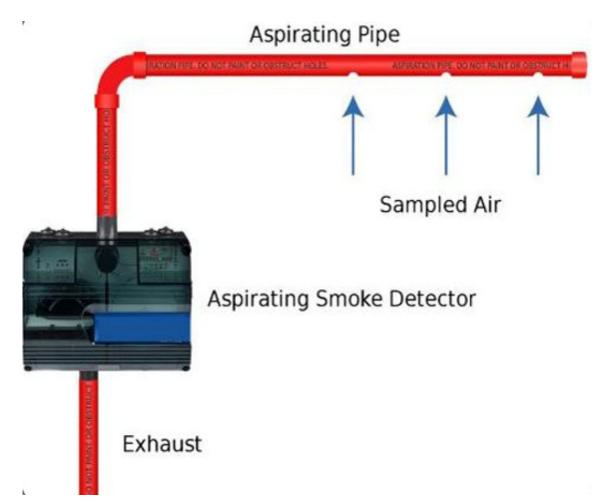


Ionisation

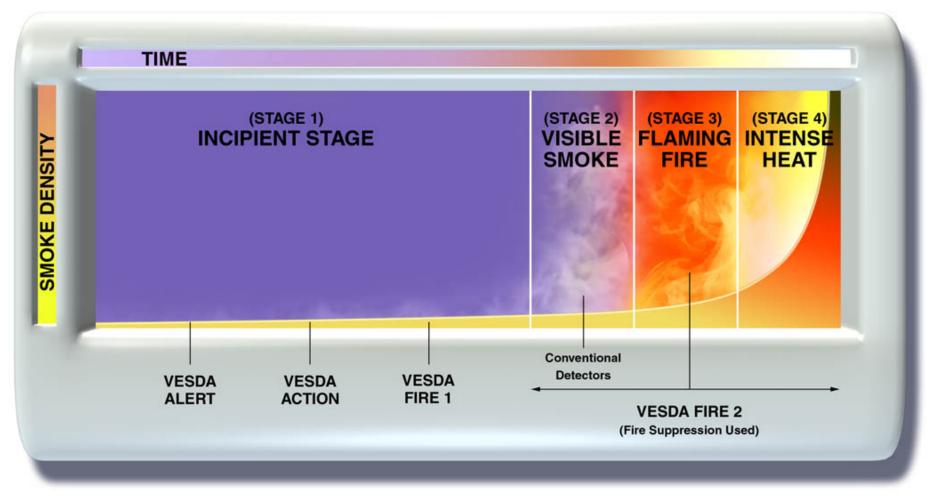




Aspirating



Fire development



Water

Oxygen Reduction

Chemical



- Water
- HiFog







- Oxygen Reduction
 - IG55 Argonite
 - Argon 50%, Nitrogen 50%
 - IG541 Inergen
 - Argon 40%, Nitrogen 52%, CO2 8%

- Chemical
 - FM200 (HFC-227ea)
 - Novec 1230 (FK-5-1-12)

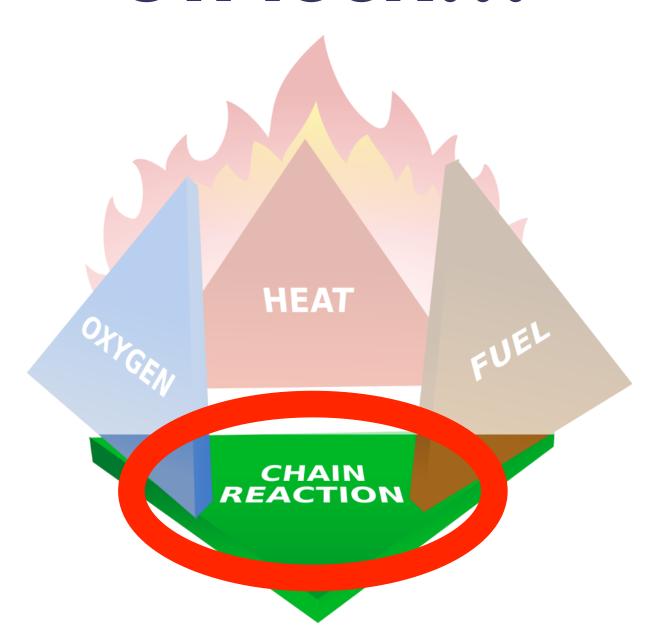
NO Halon



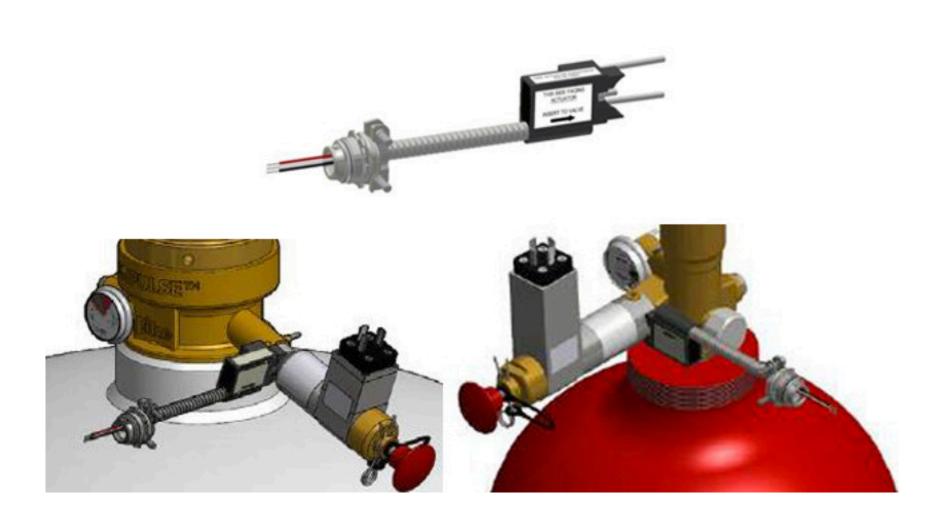
All together

- VESDA Pre-Alarm
 - Immediate reaction & investigation needed
- VESDA Fire
 - Area Alarms, Evacuation, more investigation
- First Knock
 - Oh fsck... full evacuation
- Second Knock
 - Bigger oh fsck in 30 60 seconds
- System discharge
 - ££,£££ 🕾

Oh fsck...



Oh fsck...

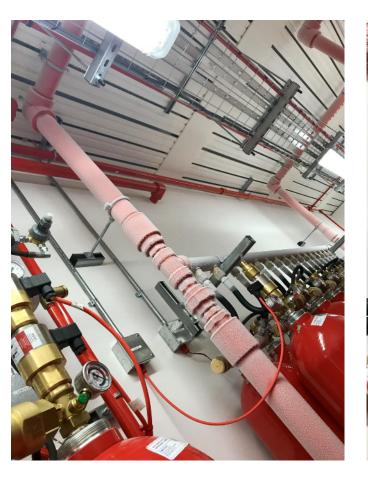


Oh fsck...



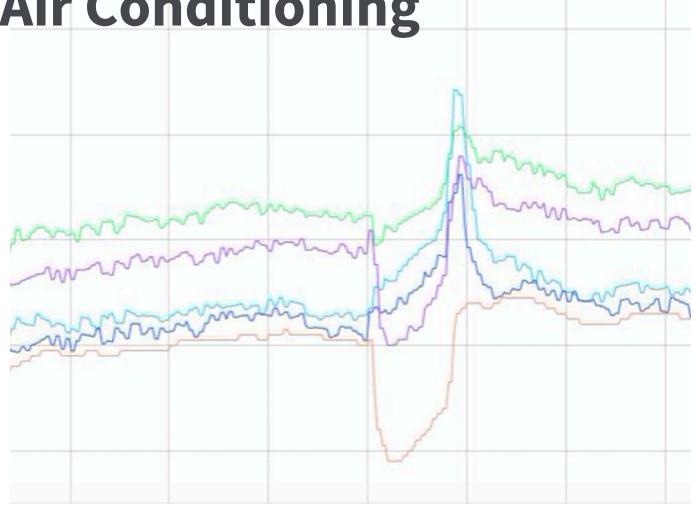


IG55 - Freezing





Air Conditioning



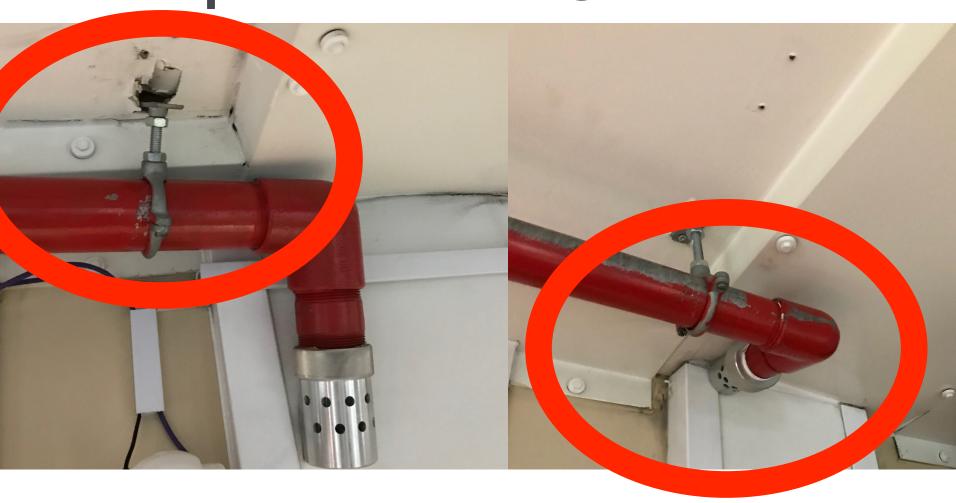
- Too much noise!
- 110dB upper limit for HDDs



FM200 - A very deep voice!

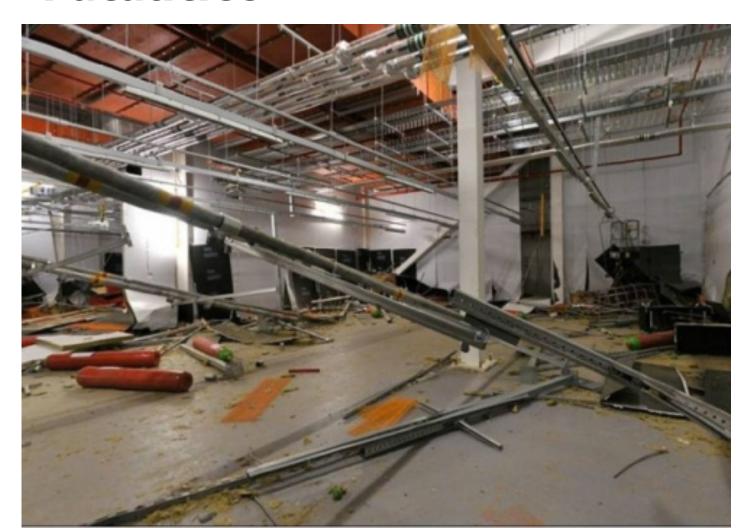


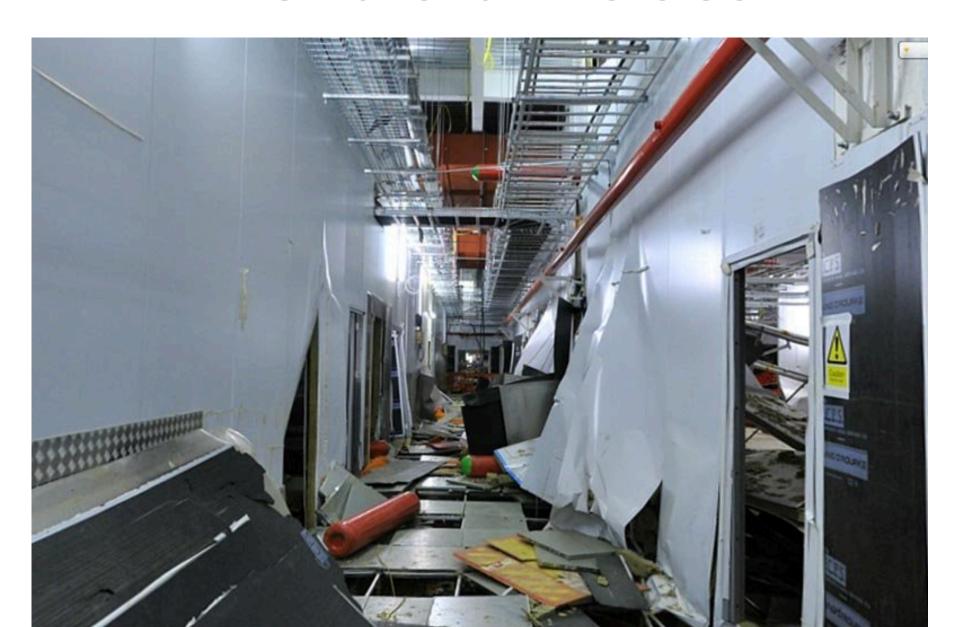
• Pipework moves 🕾





Fatalities





Improvements

People

Process

Training

Is it worth it?



Questions

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