Fire Detection and Suppression

Critical Facility Management

Today's critical facilities such as data centers and network rooms are under enormous pressure to maintain operations. Many companies risk losing millions of dollars with a single data center outage.

Fire Detection and Suppression

It's not hard to believe that in the event of a catastrophic data center fire, a company may not only lose millions, but may also go out of business.

While fire prevention is essential, detecting fire quickly and extinguishing it before it takes hold is a critically important feature of all critical facilities. This session provides an overview of current fire detection and suppression approaches.

Presented By
Paul Zalewski
OneNeck IT Services

OneNeck®

Agenda

Key Components of a Critical Facility Solution

- ✓ Prevention Practices
- ✓ Early Detection - VESDA
- ✓ Clean Agent Suppression
- ✓ Water Suppression
- ✓ Summary

OneNeck®

Prevention

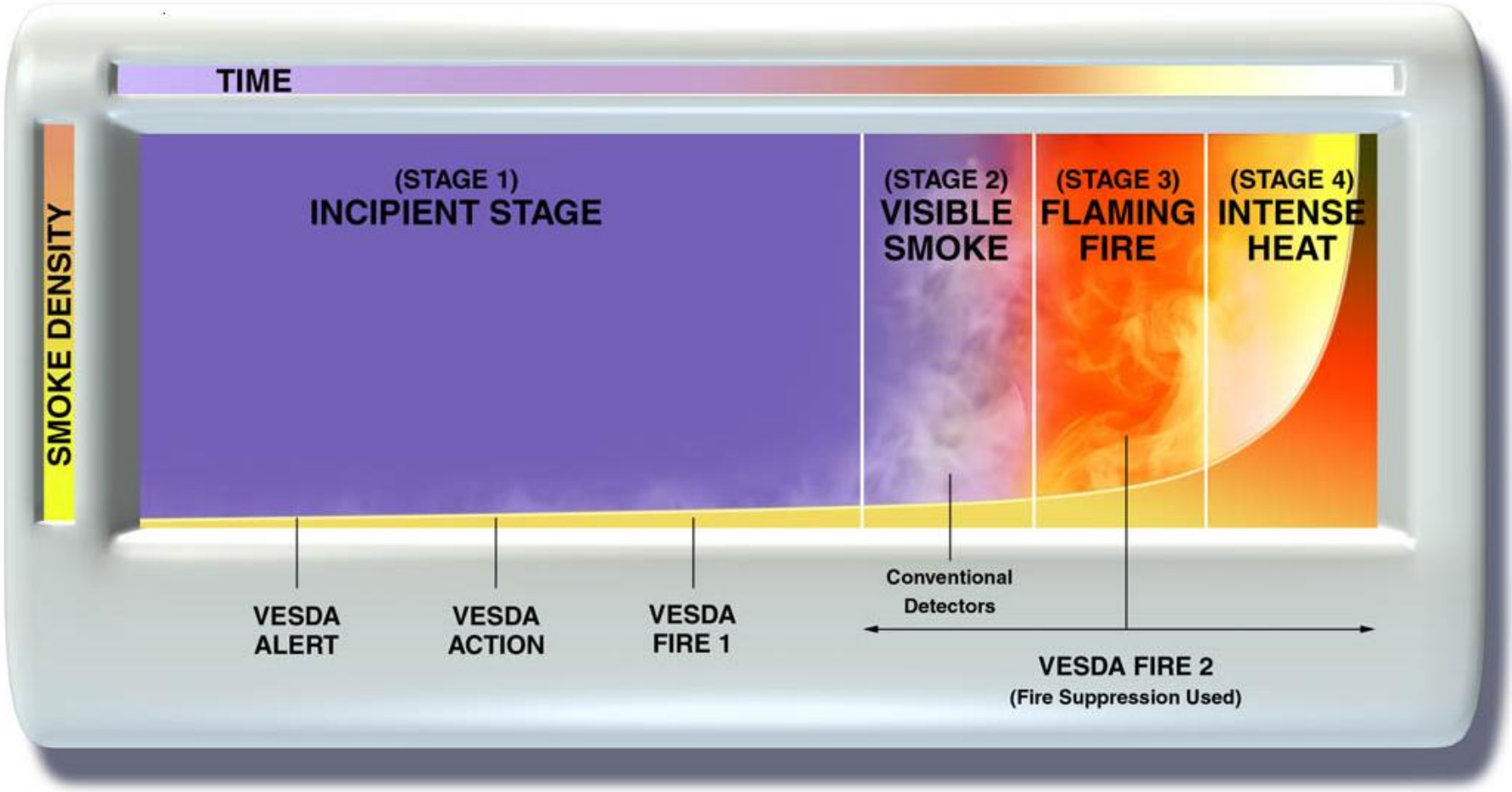
- Avoid Conditions conducive to fire or that create a fire hazard in the Data Center. Examples include:
  - ✓ Proper power distribution management
    - Keep power distribution components free of obstructions
    - Perform regular maintenance
    - Appropriate in-rack PDU components and managed loads
    - Floor opening trim to prevent cable chafing
  - ✓ Combustible Material Management
    - Appropriate/regular cleaning to minimize dust accumulation
    - Minimize/eliminate trash receptacles, frequent emptying
    - Eliminate paper/cardboard products from all rack environments
    - Data Center furniture constructed of metal
    - Frequent Audits

Early Detection - VESDA

- VESDA - Very Early Smoke Detection Apparatus
  - ✓ VESDA Air-sampling Smoke Detectors work by:
    - Continually drawing air into a pipe network attached to a detector unit
    - Passing the air through a dual stage filter to remove dirt
    - Sending the clean air to a laser detection chamber for smoke detection
    - Measuring the light scatter caused by any smoke
    - Processing the detector signal and presenting the smoke level graphically
    - Communicating the information to a fire alarm control panel, a software management system or a building management system
  - ✓ Early detection allows area personnel to investigate potential threats prior to progression into significant events

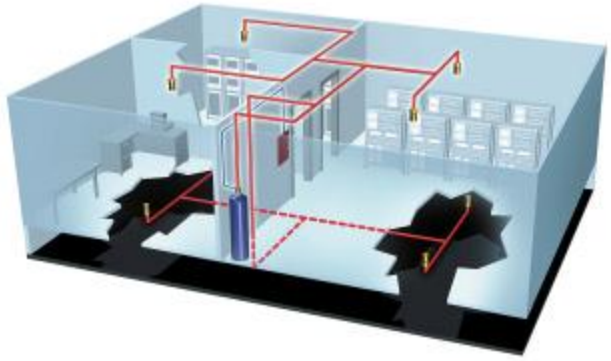
Early Detection - VESDA

- VESDA and fire incident progression



Clean Agent Suppression

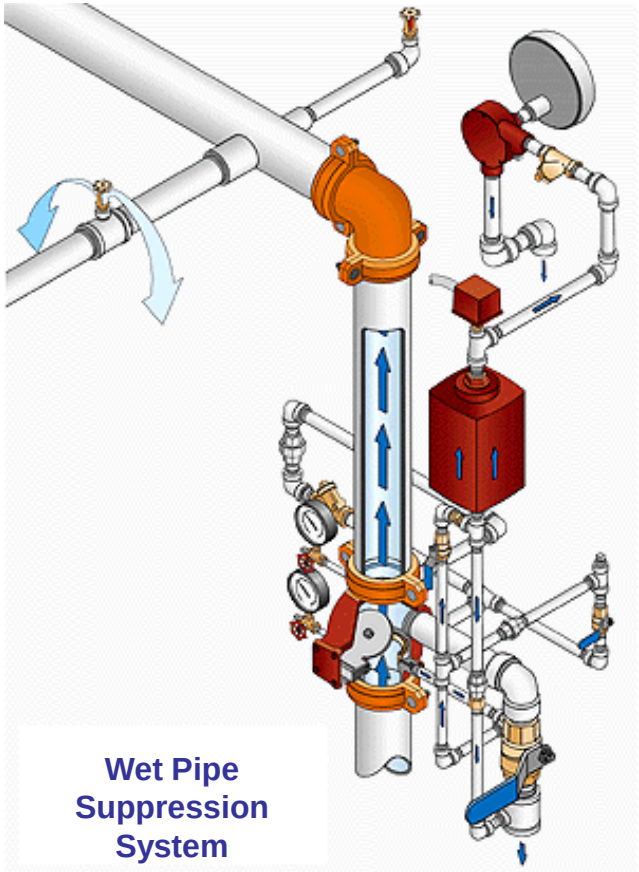
- Superior to basic water-based fire protection systems in many ways
  - ✓ Extinguishes a fire Faster than Water
  - ✓ Is Safe for People
  - ✓ Requires No Clean-up
  - ✓ Prevents Smoke and Soot Damage
  - ✓ Causes No Damage to your business assets



- Why Implement clean agent suppression?
  - ✓ Provide increased protection/availability of computing environments
  - ✓ Enhance facility standards, meet audit/regulatory objectives
- Clean Agent Products
  - ✓ Halon 1301 production was banned in January 1994
  - ✓ FE-227™ or FM-200®
    - FE-227™ initially leading Halon alternative in North America.
  - ✓ FE-25™ or ECARO-25
    - FE-25™ initially more prevalant in Europe, has gained in popularity in North America due to flow rate, volume per unit, cost, and environmental impact.

Water Suppression

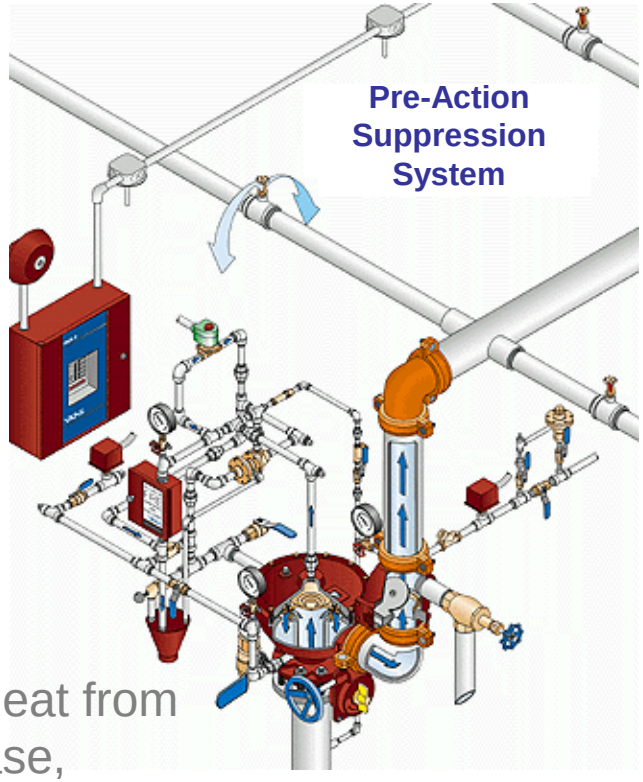
- Wet Pipe Suppression System
  - ✓ Closed-type sprinklers heads are connected to a water-filled piping system
  - ✓ The sprinklers contain either a heat-responsive glass bulb or fusible element that prohibits water from discharging from the sprinkler's orifice
  - ✓ The water is contained until such time as the heat from the fire activates the element, causing its release, allowing the water to discharge to the heat source
  - ✓ The only sprinklers that will discharge water are those sprinklers whose elements have been directly actuated by the fire.



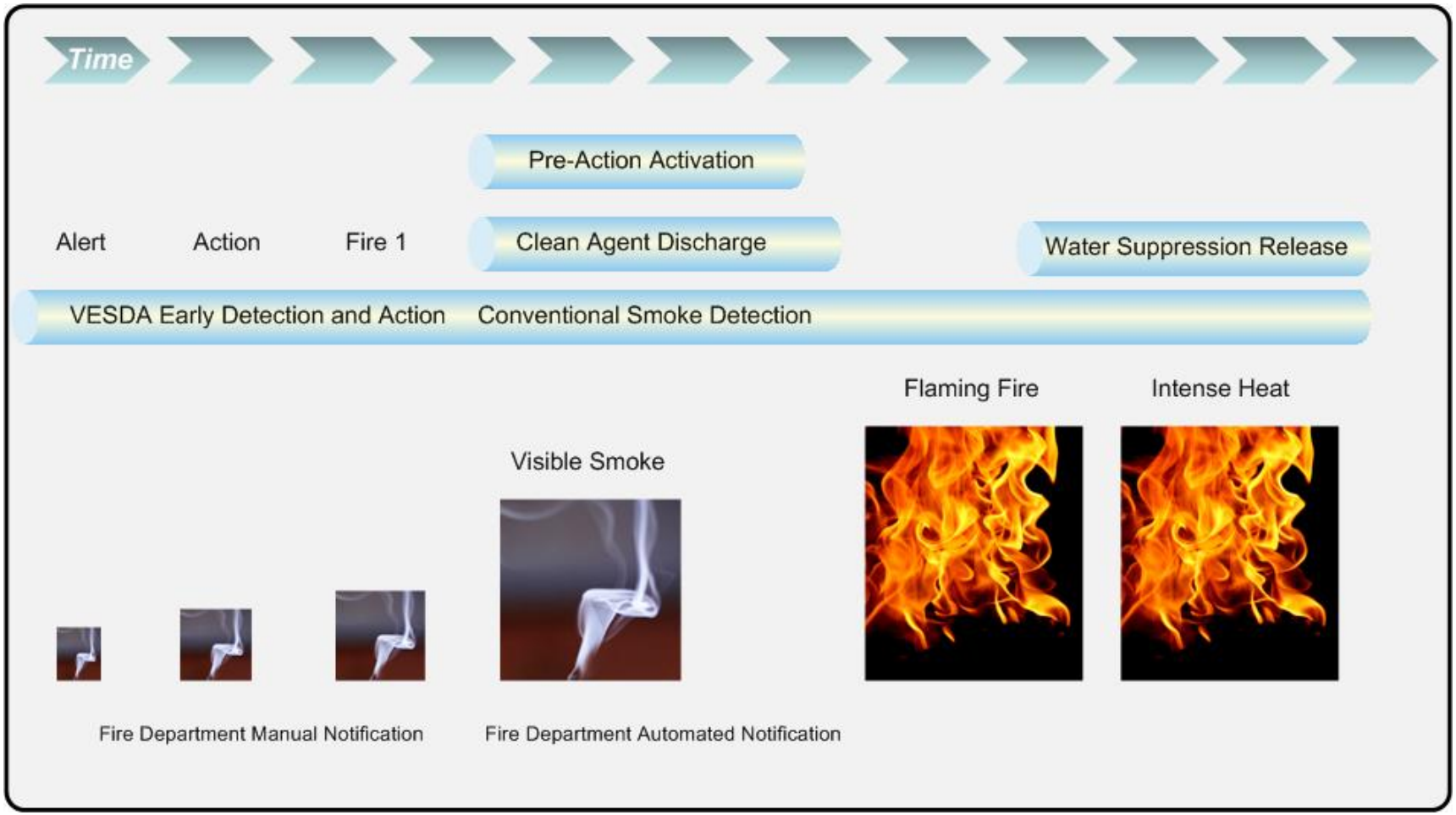
Wet Pipe Suppression System

Water Suppression

- Pre-Action Suppression System
  - ✓ Closed-type sprinklers heads are connected to an air-filled piping system
  - ✓ System is integrated with a detection solution
  - ✓ Water is kept from entering the piping by a valve, the pre-action valve
  - ✓ This valve is held closed electrically, only being released/activated by a signal from the detection system, at which time the piping system is water-filled
  - ✓ The water is contained until such time as the heat from the fire activates the element, causing its release, allowing the water to discharge to the heat source
  - ✓ The only sprinklers that will discharge water are those sprinklers whose elements have been directly actuated by the fire.



Detection and Suppression
Event Progression



- Questions

For more information about OneNeck IT Services:
Phone: (480) 315-3000
Email: info@oneneck.com
Website: www.OneNeck.com