Chemical
SAFETY AND SECURITY TRAINING

# Security Awareness, Entry Control

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Sandia National Laboratories

Chemical Accidents are a Guide to Chemical Security Efforts

24 % Others

38 % Hydrocarbons

6 % Acids and Bases

6 % Ammonia

8 % Chlorine

15% Explosive Compounds
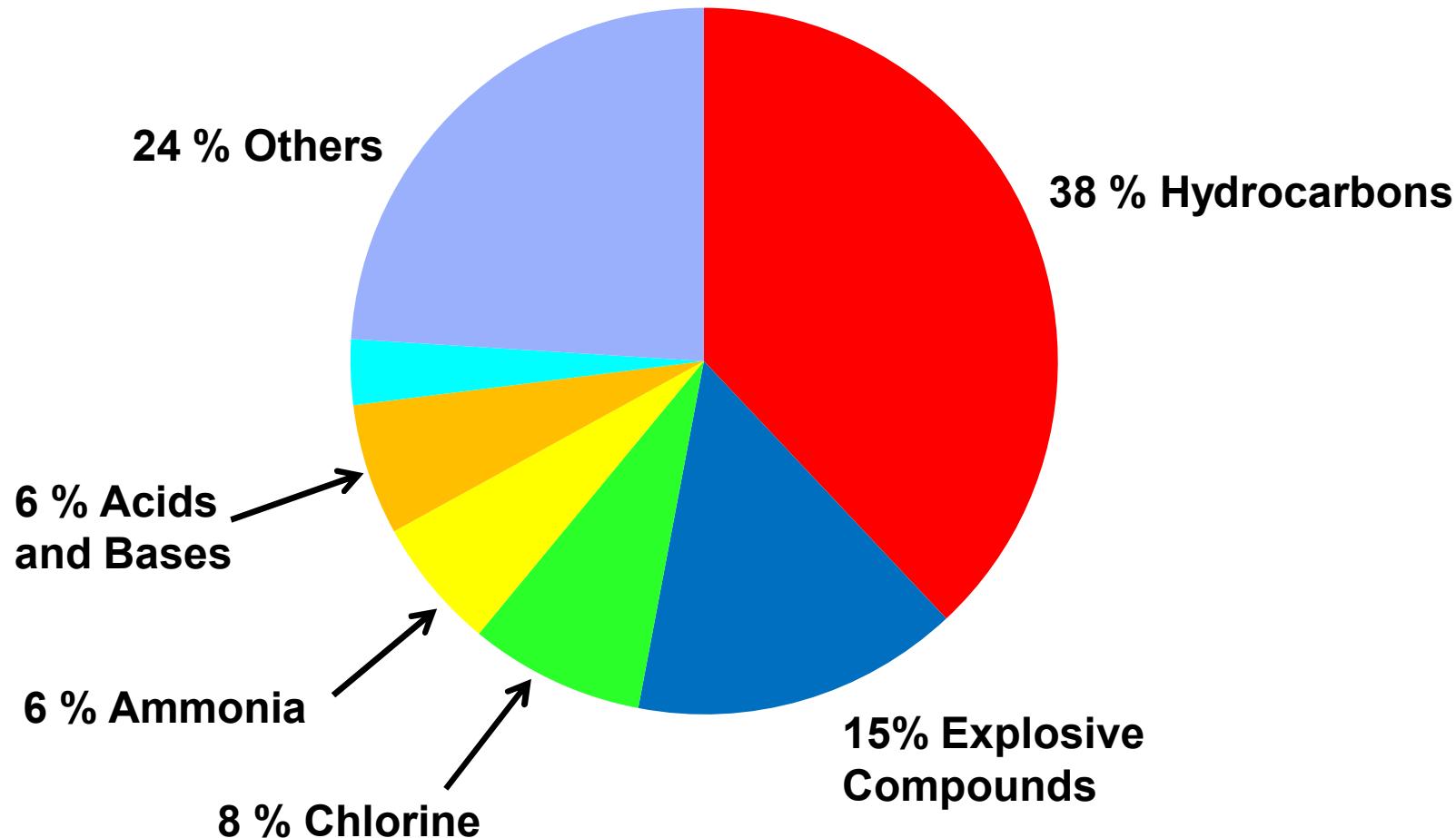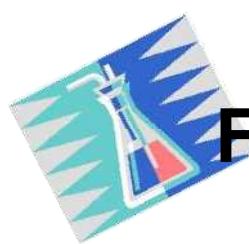
First Steps in Chemical Security: Low Cost Principles

Chemical Security Awareness

Property-Vehicles-Information-Personnel

Work Area - Changes

Behavior - Suspicious

Procedures - Followed

Access Controls

Have (credential), Know (PIN), Are (biometric*)

Manual (guards), Automated (machines)

* Can be expensive

Low Cost Security Measures are a Good Start

*PIDAS
Perimeter Intrusion
Detection and
Assessment System

**Technology
and/or Cost**

PIDAS*

Professional
Response force

On- site Guards
Sensors-Cameras
Fences-Access Control

Staff Security Awareness

Threat Understanding
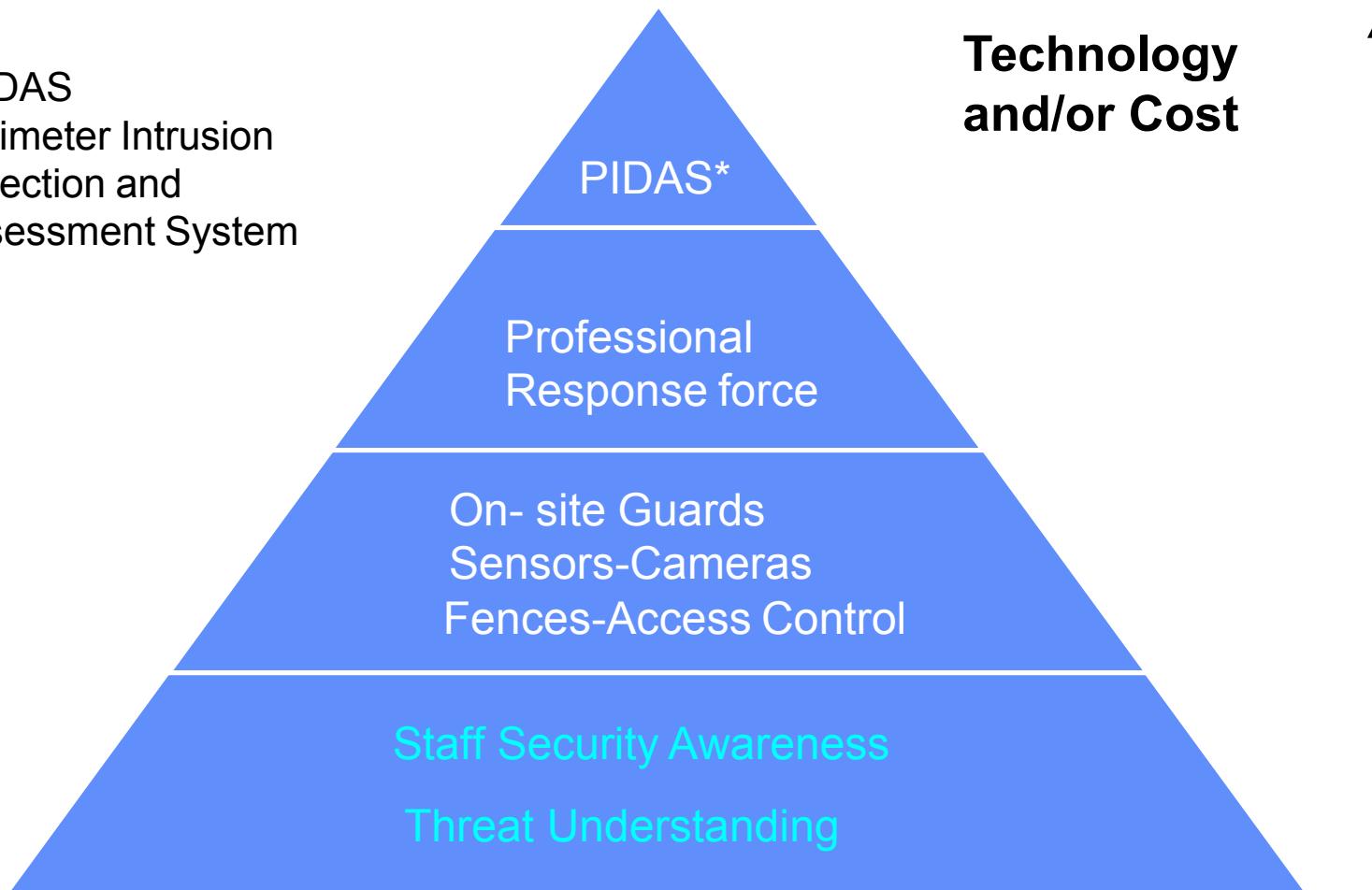
There are Four Categories with the Greatest Impact on Security

- **Property** – Laptop, jump drive , personal digital assistant

- **Vehicles** – Facility vehicle, access to areas, passes removed

- **Information** – Computer access

- **Personnel** – Identification, access codes

Source: DHS Chemical Security Awareness Training

Basic Security Awareness

- **Work area changes**
  - **Housekeeping – Clean plant helps spot discrepancy**
  - **Hole in fence**
  - **Suspicious packages**
  - **Inventory discrepancy**
  - **Door unlocked**
- **Symptoms of others behavior who are attempting to compromise security**
  - **Elicitation**
  - **Surveillance**
  - **Ordering supplies**

Source: DHS Chemical Security Awareness Training

Suspicious Behaviors

- **Testing security – walking into, wait for discovery**
- **Mapping, loitering, staging vehicles**
- **Taking pictures of security system**
- **Looking in dumpster**
- **Trying to enter on your credential**
- **Asking for user name over the phone or by email**
- **Asking about plant layout – workers names-schedules**

Source: DHS Chemical Security Awareness Training

Security Involves Systematic Diligence-Follow Procedures

- **Missing badge**
- **Leaving workstation unsecured-fire alarm**
- **Leaving sensitive document**
- **Bypassing security**

Know what to do - who to call
Communicate anything unusual to supervisor

Remember - YOU are the first responder

Source: DHS Chemical Security Awareness Training

Access Control Integrated with Areas and People

Plant locations
Administration
Control rooms
Server rooms
Switchgear
Process Units
Rail / truck yards
Stores

Plant employees
Administration /Engineering
Operations
    Computer specialists
    Control room operator
    Process interface
    Shipping and receiving
Maintenance
Security / Safety
Contractors / visitors

Owner Controlled Area

Restricted Area

Vital Area
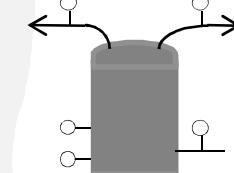
HAZARD

Definitions

Access control is a system which enables an authority to control access to areas and resources in a given physical facility or computer-based information system.

Features of a Good Entry Control System

- **Integration with boundary**

  Cannot be bypassed

  Block individuals until access authorization verified

  Interfaces with the alarm system

- **Integration with the guards/response force**

  Protects guard

  Area is under surveillance

- **Personnel integrate with system**

  Easy to use for entry and exit

  Accommodates peak throughput (loads)

  Accommodates special cases

Types of Personnel Entry Control

Personnel Authorization Verification

**Manual
(Protective Force Guards)**

**Automated
(Machines)**

Have - Credential (Photo)

Exchange Credential

Have - Credential (Coded)

Know - Memorized Number (PIN)

Are - Personal Characteristics (Biometric)
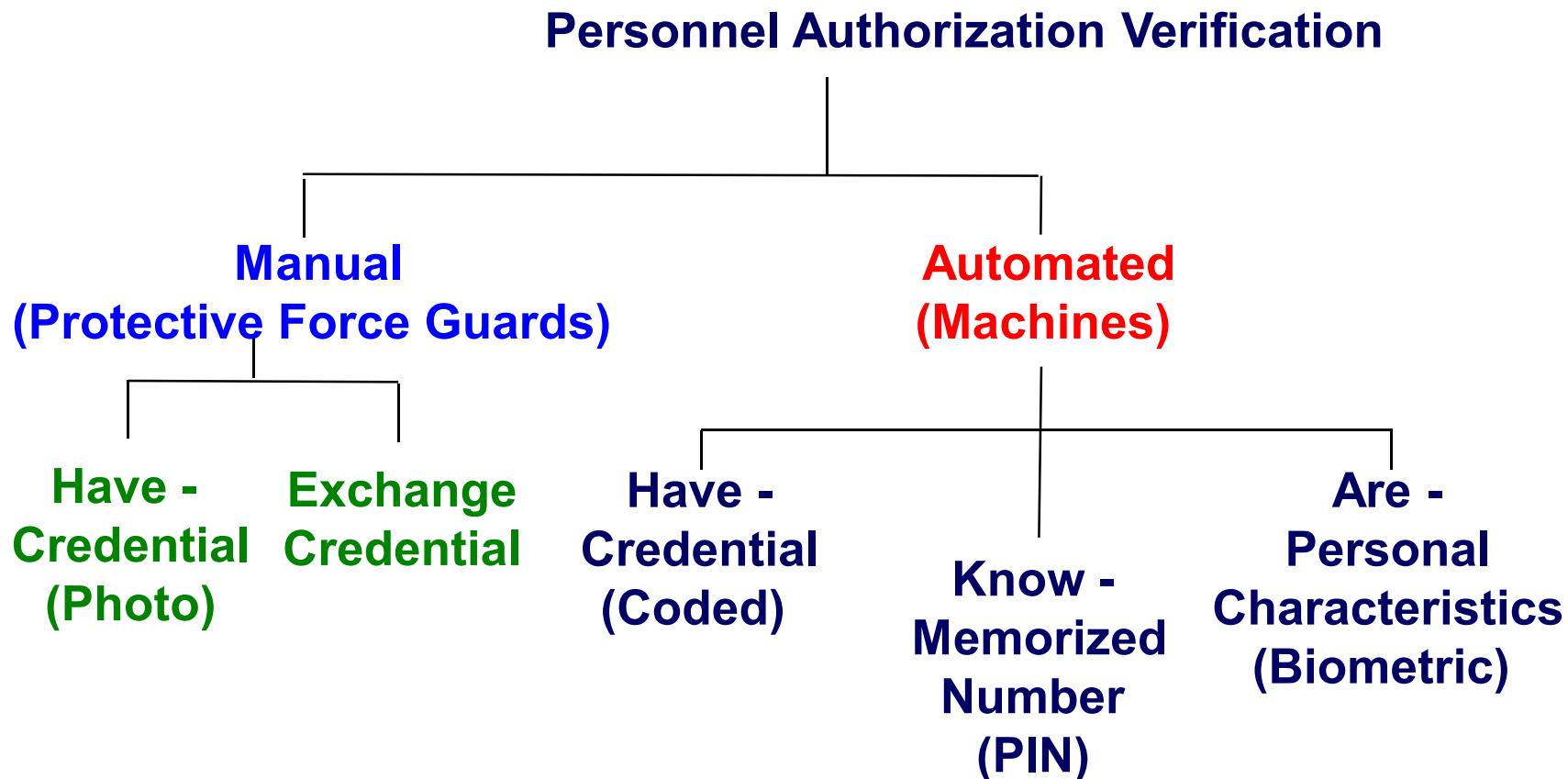
Application of Good Design Criteria

Turnstiles with card readers and PIN pads

Secondary Inspection Area

Hardened Guard Booth

CCTV Camera

Metal Detectors
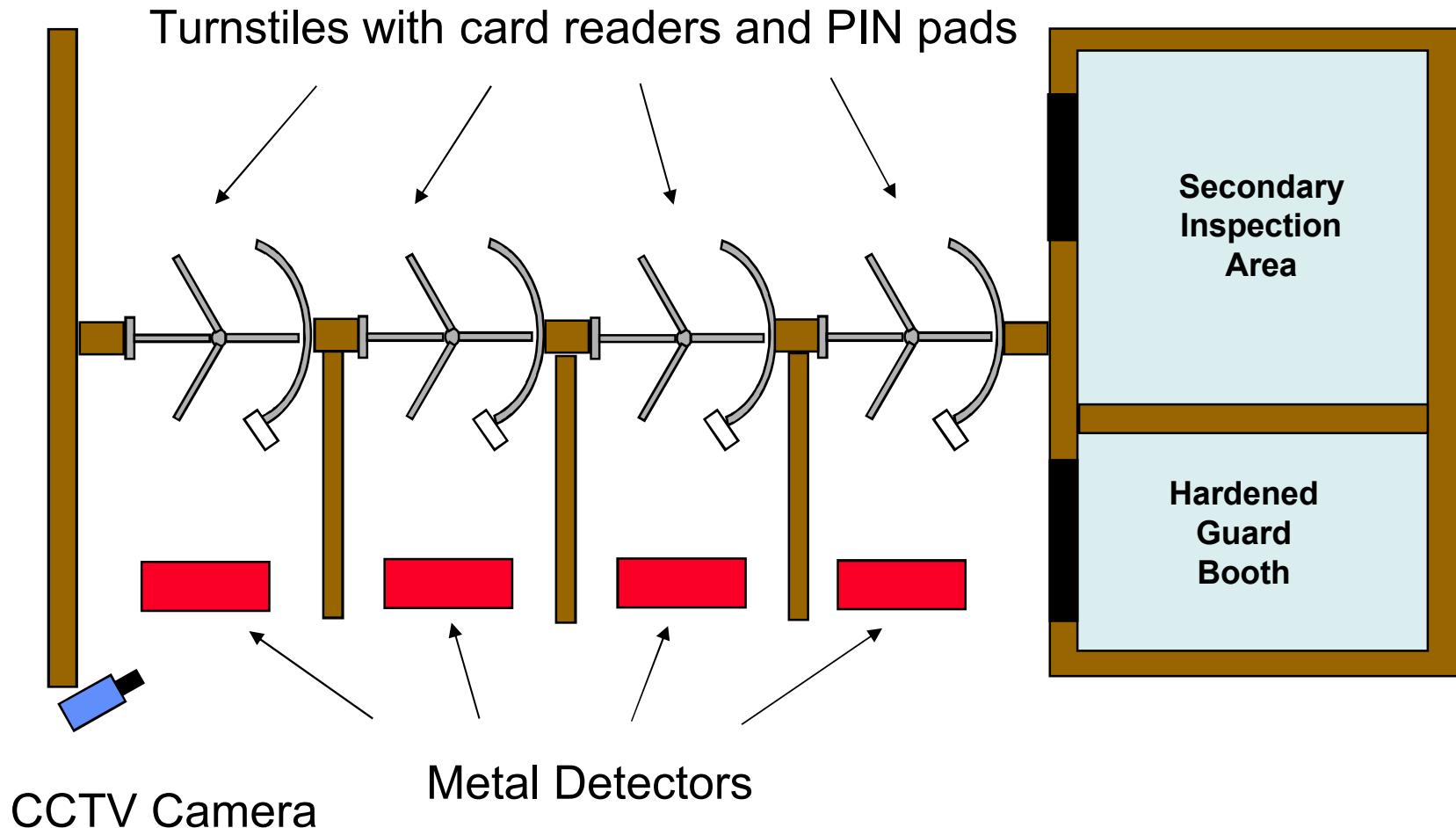
Summary: Entry Control

- **The purpose of entry control is to allow authorized persons to move in and out through a protected area boundary.**

- **Access Control verification techniques depend on verifying what you: Have, Know, and Are.**

- **Biometric systems verify who you are by verifying a unique physical characteristic such as fingerprint or hand geometry.**

- **A good entry control system addresses interface with the protected area boundary, with the guard force and with personnel.**

Resources

Guidelines for Analyzing and Managing the Security Vulnerabilities of Fixed Chemical Sites

CCPS
CENTER FOR CHEMICAL PROCESS SAFETY
An AIChE Industry Technology Alliance
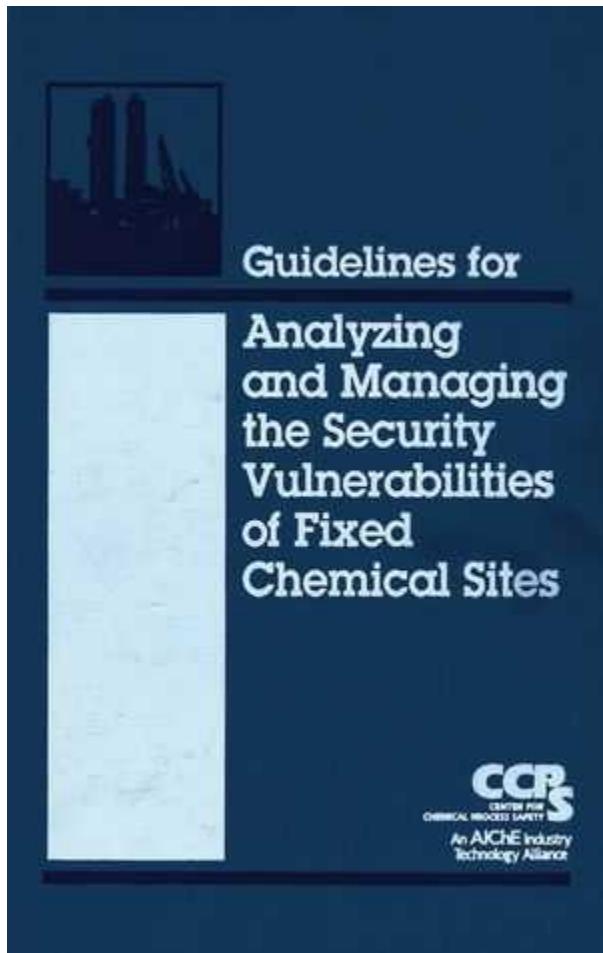
DHS online Chemical Security Awareness Training
https://chemicalsecuritytraining.com/