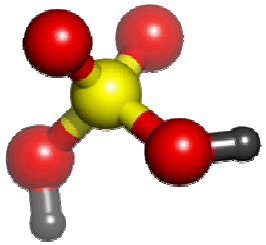
SAND2012-1605C

Chemical Safety and Security Program Organization and Responsibilities



SAND No. 2009-8395P

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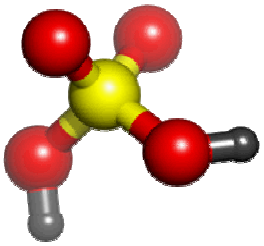
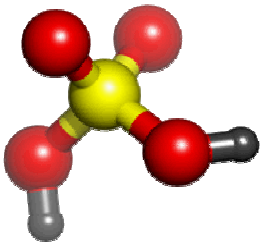
CSP CHEMICAL SECURITY ENGAGEMENT PROGRAM

Sandia National Laboratories



Chemical Safety and Security Program Purpose

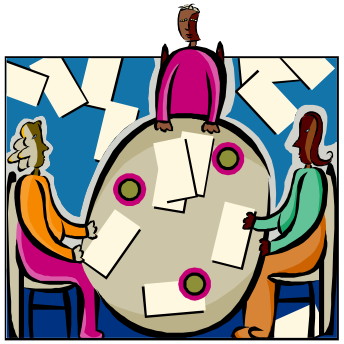
- Ensure a safe and secure workplace.
- Ensure a sustainable environment.
- Prevent/reduce release of hazardous substances in plant and in community.
- Prevent/reduce exposure to staff.
- Enhance community relations.
- Comply with regulations.
- Enable crisis management.



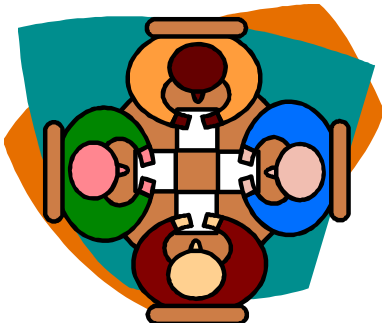
Crisis Management: Prevention & Response

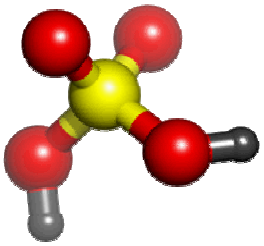
- Facility crisis
  - Fire
  - Explosion
  - Chemical release
  - **Evacuation**
  - **Remediation**
- Natural disaster
  - Earthquakes
  - Hurricane/typhoon
  - Tsunami
- Security Incidents
  - Disgruntled personnel
  - Employees
  - Ex-workers
  - Contractors
  - Demonstrations, protests
  - Terrorism
  - Theft

Chemical Safety and Security Applies to Everyone



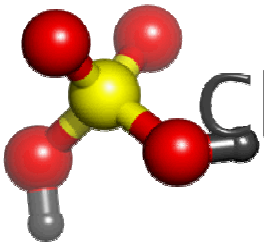
Administration
Management
Human Resources
Purchasing
Facilities
Construction
Police/Security
Employees
Contractors
All visitors





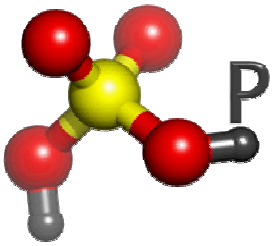
Senior Management

Has the responsibility,
to *teach*, *model* and *encourage*
good chemical safety and security
practices



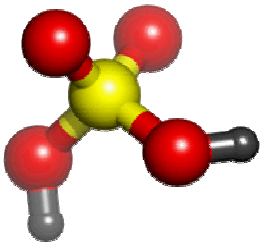
Plant Management Chemical Safety & Security (CSS) Responsibilities

- Develop procedures with Safety Officer for unique hazards and chemicals (toxic, flammable)
- Develop proper control practices with Safety Officer
- Participate in developing CSS Plan, CSS Committee, accident investigation procedure
- Ensure CSS documents and records are maintained
- Maintain plant chemical inventory
- Ensure Safety Data Sheets are available
- Facilitate compliance with policies, guidelines and regulations



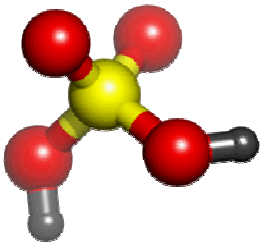
Plant Management Responsibilities (cont'd.)

- Ensure workers know and follow policies and practices
- Ensure equipment and controls are properly maintained
- Ensure all workers received proper training and refreshers
- Ensure new workers receive proper training before starting work
- Inform Safety Officer of any accidents and incidents
- Follow-up on accidents and incidents



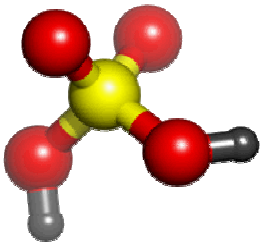
Employees

Have a responsibility,
to *actively* support and participate
in the CSS Program.



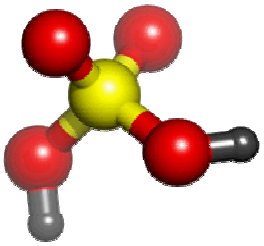
Employee Responsibilities

- Understand and act in accordance with policies/rules and practices.
  - Participate in and learn from required training
  - Learn about hazards of specific chemicals/processes
  - Read & understand related documents
- Follow good chemical safety practices
  - Wear and maintain Personal Protective Equipment (PPE)
  - Use engineering controls properly
  - Work safely/behave responsibly (i.e. don't put others at risk).
- Proactively encourage safety and security
  - Participate willingly in the CSS Program
  - Report accidents, incidents/near misses, problems
  - Suggest changes and improvements



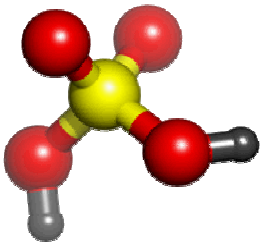
The Safety Officer

Has the responsibility
to provide expertise and information
so that a safe and healthy workplace
is present and maintained.



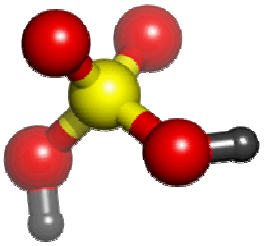
Safety Officer
Training, Experience, Skills

- Chemistry
  - Nomenclature
  - Physical properties
  - Reactive substances
  - Chemical compatibilities
- Health and Safety (industrial hygiene)
- Security
  - Facility
  - Chemicals
  - Equipment
  - Personnel
- Psychology
  - Interpersonal skills
- Physics
  - Ventilation
  - Electrical
- Biology
  - Biosafety
  - Blood borne pathogens
- Administration
- Writing
- Speaking/presentations/training



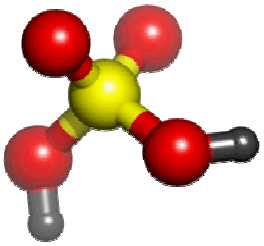
Safety Officer Duties and Responsibilities

- Reports directly to higher management
- Provides leadership in safety and security
  - Advise administration, management, workers
  - Know legal regulations and ensure compliance
  - Establish Safety and Security Committee
  - Consult/advise project management on CSS concerns
  - Respond to problems and concerns of workers
  - Coordinate with facilities and security
- Writes and revises CSS Plan
  - Develop CSS training plans
  - Trains, documents and ensures training is performed



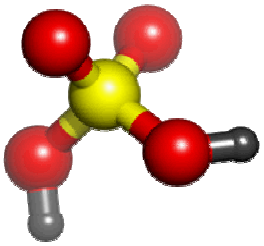
Safety Officer Duties and Responsibilities

- Ensures documentation, records and metrics are maintained.
  - Draft a safety budget
  - Set criteria for exposure levels
  - Coordinate and facilitate medical surveillance
  - Ensure plans and manuals are written and updated
- Oversees procurement, use, storage & disposal of hazardous materials
- Performs risk assessment and monitoring
  - Conducts audits and inspections
  - Interacts with staff to correct deficiencies
  - *Follows up* to ensure correction and resolution of issues
- Investigates accidents and incidents

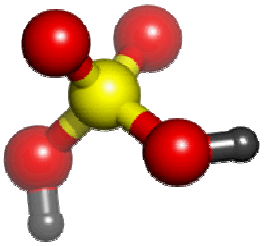


Safety Officer Duties

Surveys
Job Hazard Analysis
Inspections
Training
Medical Monitoring
Investigations



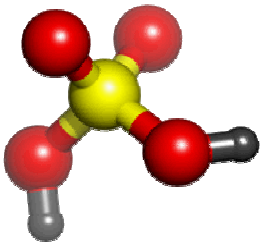
The Function of the Safety Officer is to Act as a Collaborator, *NOT* as a Policeman



The Safety Committee

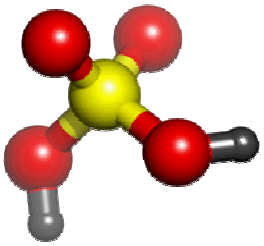
Has the responsibility,

to oversee and monitor the CSS Program for management so that a safe and healthy workplace is maintained.



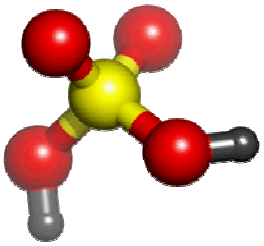
Safety Committee Responsibilities

- Reports directly to senior management
- Endorses policies
- Meets regularly (2 – 4 times/yr) with agendas
- Reviews accidents and incidents, may investigate, write reports with recommendations
- Establishes appropriate subcommittees on specific topics



Safety Committee Composition

- Chaired by committed staff
- Safety Officer is ex-officio member
- Includes representatives from:
  - Facilities Management
  - Security
  - Administration and General Management
  - Shops/Unions
- Representatives should rotate after a few years



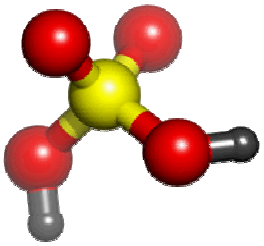
Management Responsibilities

Commitment:

- Establish a formal CSS Program
- Announce formation of a CSS Program
- Create a written policy statement
- Designate a Safety Officer
- Endorse a written CSS Plan (Manual)
- Participate and intervene as needed

Support:

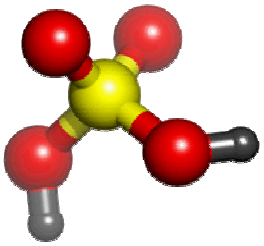
- Financial support (budget)
- Staffing
- Response/resolution of problems by
  - Establishing a CSS Committee
- Stipulates CSS is part of everyone's job
  - CSS applies to everyone
  - Specifies CSS orientation for new employees
- Supports CSS staff



Management Responsibilities

POLICY STATEMENT

Documents and describes
the commitment and support
from the highest management level
for the Chemical Safety and Security Program

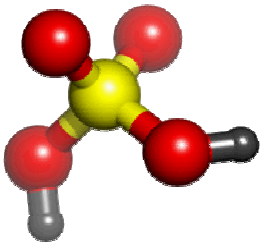


Policy Statement Purpose

Establish and provide for maintenance of an effective Chemical Safety and Security Program to protect:

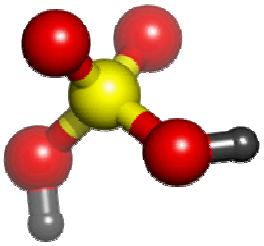
- Employees
- Facility
- Community
- Environment

…and to comply with all regulations.



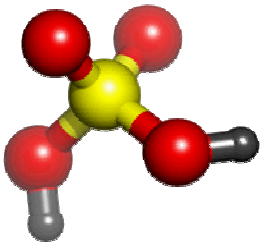
Policy Statements

- Come from senior management
- Are typically brief
- Set clear goals
- Establish commitment
- Define employee role
- Identifies resources and staff
- Are signed by person in authority



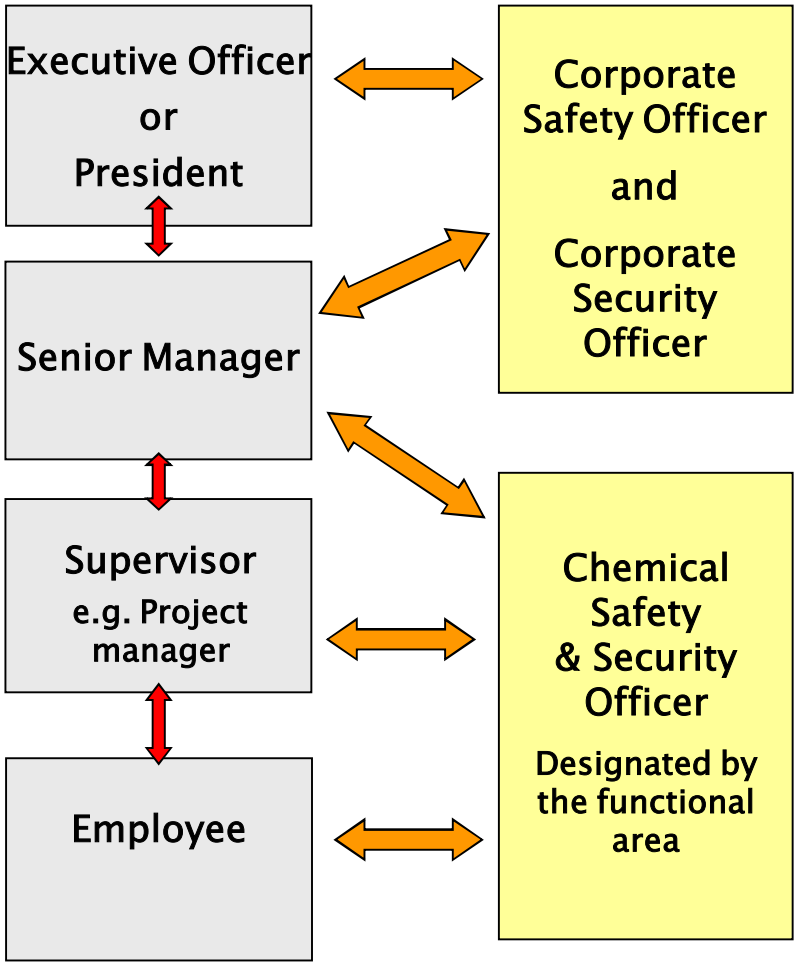
Example Policy Statement

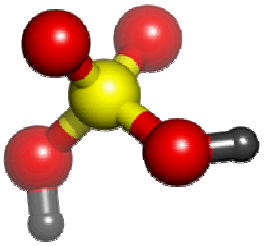
"It is the policy of XYZ Company to protect our workers and the public, prevent incidents, protect the environment through integration of environmental stewardship and sustainability throughout the life-cycle of its activities, and ensure regulatory compliance."



Chemical Safety and Security Program Ideal Roles

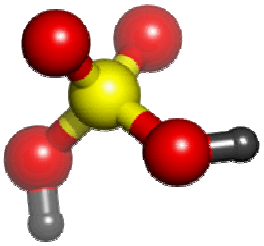
- Culture of Chemical Safety and Security should exist at all levels of the organization.
- Top management sets policy, provides resources.
- Workers must understand and implement.
- Many organizational interactions are important for chemical safety and security





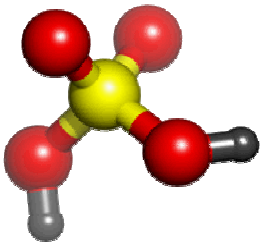
Program Evaluation

- Management leadership
- Employee involvement
- Administrative controls
- Security controls
  - Access to buildings, materials
- Engineering controls
- Accident/incident investigation
- Training
- Use of Personal Protective Equipment (PPE)
- Emergency Response Program
- Medical Surveillance Program
- Work site analysis
  - Inspections, hazard surveys



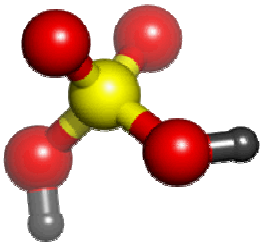
Hazard Survey

- Baseline measurements
- Periodic inspections
- Identify potential job hazards, material hazards, and process hazards



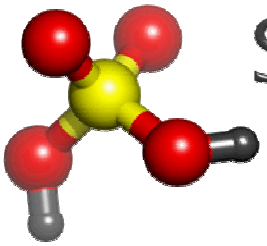
Hazard Survey Process

- Prepare survey form
- Perform walk-through
- Take measurements
  - Sample if necessary, monitor exposure (e.g., formaldehyde, radiation)
- Perform data analysis
- Write and deliver report



Periodic Inspections

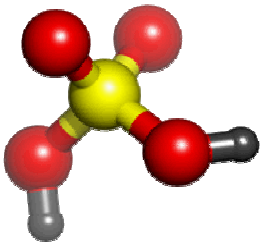
- Performed by Safety Officer
- Team may include:
  - Employees
  - Process Supervisor
  - Facilities representative
- Frequency determined by hazards present and local practices
  - 2 – 4 times/yr
- Look for:
  - both good and bad practices
  - new hazards
  - new security issues



Sample Plant Survey/Inspection Checklist

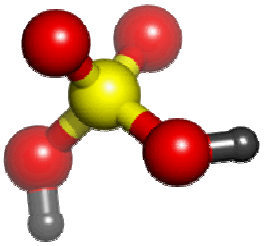
- Date of Inspection:_____
- Conducted by:_____
- Location (room and building):_____
- Supervisor:_____

- Work Practices
  - PPE available/properly used, stored, maintained
  - Work conducted under ventilation if airborne hazard
  - Housekeeping
  - Work instructions present and used



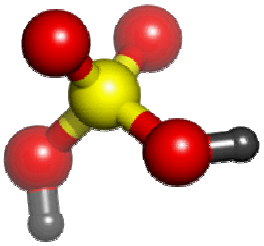
Inspection Checklist, cont'd.

- Hazard Communication
  - Warning signs *posted*.
  - SDS available.
  - All chemical containers/tanks/piping labeled.
- Personal Protective Equipment
  - Available for each specific hazard.
  - Eye protection available, when & where required & *posted.*
  - Other PPE available as necessary.
  - Visitor requirements for PPE *posted*.



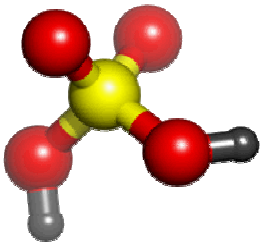
Inspection Checklist, cont'd.

- Plant Safety Equipment
  - Fire pull stations & telephones appropriately placed and labeled
  - Adequate number of fire detection and control devices.
  - Emergency shut-down equipment present and routinely tested.
  - Emergency chemical release equipment available, maintained, labeled.
  - Eyewashes & safety showers present, unobstructed, in good working order, routinely tested and maintained.
- General Facility
  - Exits marked
  - Access controls
    - Hazardous areas
    - Proprietary processes



Inspection Checklist, cont'd.

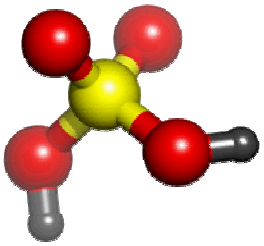
- Chemical Storage/Warehouse
  - Area secured
  - Chemicals inventory list or database
  - All containers labeled
  - Incompatible chemicals segregated
  - Volatile, flammable material keep away from ignition sources
  - Fire protection
    - Barriers, sprinkler system, extinguishers, alarms
  - Emergency release equipment present
    - PPE
    - Spill equipment



Inspection Checklist, cont'd.

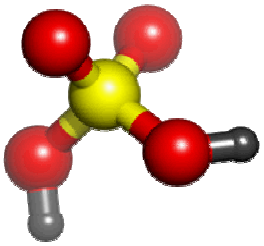
- Ventilation
  - Ventilation for airborne hazards available
  - Ventilation labeled with static pressure or airflow
  - Ventilation equipment intakes not blocked

- General
  - Aisles & exits unobstructed.
  - Work areas clean with no chemical contamination.
  - Mechanical hazards guarded with barriers



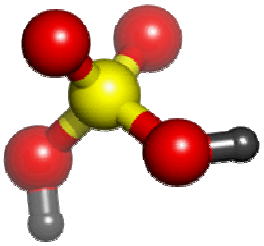
Training Program

- Identify training needs
- Identify Goals & Objectives
- Develop training activities
- Identify resources
- Conduct training
- Evaluate effectiveness
- Continuous Improvement



Employee Training Topics

- New employee orientation
- Special processes and procedures
- Hazard communication/ labeling, Safety Data Sheets
- Occupational Exposure Limits (OEL) for hazardous chemicals;
- PPE use, storage and maintenance (especially respirators)
- Fire safety and fire extinguisher use
- Emergency plans, evacuation procedures & routes
- Confined space entries
- Lockout/tagout
- Hazardous waste procedures
- Facility security requirements

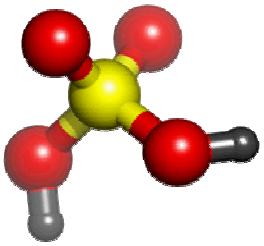


Training Documentation: Sample

- Employee name: _____
- Department: _____
- Date: _____

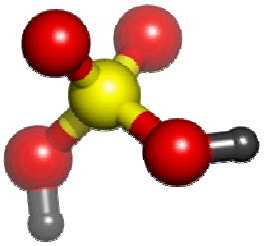
- Training Subject: _____
- Training Date: _____
- Re-instruction date: _____

- Employee Signature: _____
- Date Signed: _____
- Supervisor's signature: _____
- Date: _____



Standard Operating Procedures (SOP)

- An SOP explains *concisely and precisely* how, where and who performs a task.
- It does *not* explain why the task is done.
- The Safety and Security Plan explains policy and why a task is performed



Standard Operating Procedures (SOP), cont'd.

- SOPs are:
  - Dated
    - When issued
    - When reviewed
    - When revised
  - Have: subject, title and identification code
  - Officially reviewed by management
  - Written in a consistent and official format with numbered pages