

Subject Outline of Knowledge for STS PetroChemical Practice

(Numbers in parenthesis indicate the number of times the knowledge statement occurs.)

GENERAL

Laws, Regulations, Standards, Government

Manufacturers' requirements

Mathematics, Statistics, Sciences

Basic mathematics

Behavioral and Organizational Science

Coaching techniques

Conflict resolution techniques (2)

Appropriate disciplinary policies and procedures

Organizational structure for the organization (e.g., hierarchy, chain of command)

Leadership techniques

Business and Management

Organizational policies and procedures (3)

Organizational management of change procedures

Training and Education

Training and qualifications necessary for specific jobs and/or tasks

Evidence of required training (e.g., DOT operator qualifications, hazardous waste operations and emergency response (HAZWOPER), confined spaces, process safety management operator qualifications, welding, crane operation)

Communication

Facilitation and safety communication strategies

Organizational policies regarding communication with external entities

Facilitation techniques

Effective communication techniques (e.g., among shifts, simultaneous work groups, different levels of the hierarchy within the organization)

Ethics

Ethical considerations concerning the accuracy of information, conflict of interests, etc.

Ethical considerations concerning sources of data, accuracy of data, preservation of evidence, application of investigation techniques, reporting, etc.

SAFETY, HEALTH, ENVIRONMENT AND ERGONOMICS

General

Hazards (e.g., biological, chemical, physical, ergonomic) related to work process, equipment, and tools needed (7)

Safety, health, and environmental requirements relevant to the work performed (e.g., regulations, consensus standards, best practices) (10)

Principles and applications of hazard control (4)

Principles and applications of hazard control (e.g., energy isolation, permitting)

Safety, health, and environmental management systems

Specific topics: confined space entry, hot work permitting, energy isolation, excavation, crane operations, hoists and rigging, fall protection, hazardous waste operations and emergency response (HAZWOPER), personal protective equipment, handling compressed gases, atmospheric monitoring/gas testing, regulated hazardous materials, hazardous waste handling, hearing conservation, ionizing radiation safety (3)

Risk Management and Insurance

Basic principles of risk assessment

Injury management/workers' compensation (working knowledge)

Safety Management

Limitations of personal protective equipment
Requirements for the selection of personal protective equipment
Safety resources (e.g., material safety data sheets, key personnel, experts)
Documentation of job safety analyses and procedures derived from the analyses
Characteristics of proactive safety cultures and reactive safety cultures
Industry-accepted performance measures (e.g., incidence rates)
Purpose and organization of safety meetings
Organizational record keeping systems (2)
Organizational record keeping requirements (2)
Key personnel who are authorized to sign/issue permits
Security and confidentiality requirements of record keeping processes
Strategies for evaluating safety behavior, participation in safety culture, etc.
Organizational safety performance measures for employees
Techniques for safety performance recognition and reward or correction

Process Safety

Process safety management requirements
Applicable process safety management requirements
Specific process safety management record keeping requirements: process hazard analyses, process safety information, management of change, pre-start-up safety reviews, training, operations procedure verification, process hazard analysis revalidation, site access control
Process safety management incident investigation requirements (e.g., timeliness, investigation team make up)
Specific process safety management contractor requirements

Inspections, Investigations, Audits

Observation techniques
Purpose and principles of accident/incident investigations
Investigation techniques
Lessons learned from incidents at the worksites

Emergencies

Emergency action plans and procedures
Emergency action plans
Emergency procedures
Terminology used in emergency action plans
Techniques for implementing exercises

Subject Outline of Skills for STS Petro-Chemical Practice

(Numbers in parenthesis indicate the number of times the skill statement occurs.)

General and Applied Interpreting Skills

Making decisions (3)
Determining actions needed

Ethics Application Skills

Resolving ethical conflicts related to record keeping
Resolving ethical conflicts

General and Applied Mathematical, Analytical and Scientific Skills

Using basic mathematical formulas
Analyzing

General and Applied Verbal and Written Communication Skills

Communicating to employees effectively
Leading safety meetings
Communicating management of change procedures
Communicating to employees effectively (2)
Using open, clear, and interactive communication (3)

General and Applied Training Skills

Assessing training needs based on requirements and hazards

Applied Safety and Health Skills

Recognizing hazards and mitigating exposure (3)
Facilitating job safety analyses (identifying job steps)
Communicating the purpose and effectiveness of job safety analyses
Selecting, using, and maintaining personal protective equipment
Using safety resources
Recognizing and evaluating high risk problems
Comparing safety performance to applicable standards
Accessing lessons learned at the worksite and in the industry
Recognizing the nature and severity of incidents
Using techniques for minimizing risk

Inspection and Investigative Skills

Surveying the worksite
Reviewing documentation (e.g., logbooks, tags)
Using observation to identify unsafe behaviors (3)
Selecting correct investigation techniques
Applying investigation techniques correctly
Analyzing and protecting evidence
Facilitating post exercise/incident evaluations

General and Applied Human Behavior Skills

Taking appropriate action when observing possible alcohol or other drug abuse at the work place
Exercising leadership
Resolving conflicts
Listening to concerns and suggestions
Evaluating employee performance regarding confined space entry, hot work permitting, energy isolation, excavation, crane operations, hoists and rigging, fall protection, hazardous waste operations and emergency response (HAZWOPER), personal protective equipment, handling compressed gases, atmospheric monitoring/gas testing, regulated hazardous materials, hazardous waste handling, hearing conservation, and ionizing radiation safety.

General and Applied Business, Organization and Leadership Skills

Coaching safe behaviors (3)

Keeping records (4)

Distinguishing types of safety cultures

Resolving conflicts

Using facilitation skills

Facilitation techniques

Implementing organizational and regulatory requirements

Implementing organizational performance measurement procedures

Applying requirements for confined space entry, hot work permitting, energy isolation, excavation, crane operations, hoists and rigging, fall protection, hazardous waste operations and emergency response (HAZWOPER), personal protective equipment, handling compressed gases, atmospheric monitoring/gas testing, regulated hazardous materials, hazardous waste handling, hearing conservation, and ionizing radiation safety.

Executing the emergency action plan