

## Health & Safety & Environmental

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## **ACCIDENT & INCIDENT INVESTIGATION IN THE OIL & GAS INDUSTRIES**

### **Seminar Background:**

There is never a single cause for an accident or an incident and the source of each accident and the subsequent analysis should build a picture of events and how to avoid accidents and incidents in the future. Accident & Incidents are time consuming but essential processes for preventing further damages or losses.

This course is designed to give the participants an insight in the complexity of Accidents and Incidents and the methods for prevention and reducing both Accidents and the resulting costs. It is also gives the process of Accident and Incident Investigation and analysis of physical and documentary information and the formulation of a conclusive report with positive recommendations. The Program It is particularly aimed at the upstream and production operations in the Oil & Gas Industry and applies the Generic principles to the industries particular requirements.

### **Seminar Objectives:**

This program will describe accidents and incidents and their causes. Risk Assessments is included as the basis of prevention. Methods of fact finding and interviewing as well as the shape of the final report will also be discussed.

**Course Duration:** Five Days

### **Who Should Attend:**

Safety Managers, Officers, Supervisors and those who involved or concerned with Occupational Health and Safety Implementation of policies, control and monitoring, within their organization.

### **Program Support:**

This program is supported by H & S videos to emphasize certain aspects of this program and to highlight critical points as well as case studies of accidents & incidents in the Oil & Gas Industry ie Piper Alpha . It also uses interactive discussions and role play exercises to maximise on the participants learning potential. Practical Exercises are included wherever possible for realistic circumstances.

## Daily Course Outline:

### Day One:

- **Accidents Causes and Losses:**
  - Review of Accident Triangles
  - Review Causes of Accidents
  - Unsafe Acts – Unsafe conditions & Accident Prevention
  - Defining Types of Accidents and Incidents
  - Priorities & Risk Assessments
  - Damages & Damage Limitation
  
- **Why Investigate Accidents & Incidents:**
  - Objective of Investigations
  - Benefits
  - Barriers to Investigations
  - Cooperation of staff and employees
  - Feedback report systems
  - Quality Safety Systems & ISO
  
- **The investigation team:**
  - Terms of Reference and Role
  - Time constraints
  - Single person
  - Team & Team Leader Objectives
  - Investigation Action Plans
  - Logical processes and procedures
  - Collation of Evidence Qualitative and Quantitative

### Day Two:

- **Investigative Process & Procedures:**
  - Equipment resources
  - Physical Site Investigation and Recording
  - Records – Training, Maintenance, Operating Procedures, Permits
  - Computer and Intrinsic Data
  - Videos & Photographs
  - Diagrams, Technical Drawings and Equipment Schematics
  - The sequence of Events Methods
  - Setting the scene and re-enactments

### Day Three:

- **Conducting Interviews:**
  - Questioning Techniques How, Why, Where and When
  - Where to interview
  - Recording the Interviews: Methods and Techniques
  - Accident & Incident Re-enactments
  
- **The Process of Analysis:**
  - Compiling the Facts
  - Considering the Facts
  - Prioritising Events
  - Analysing data and information methods
  - Formulating Conclusions
  - Further Interviews

#### **Day Four:**

- **The Accident & Incident Report:**
  - The Accident & Incident Events Background
  - The Accident or Incident Causes
  - Recommendation of Corrective Action
  - Review of Facts and Findings
  - Formulation and Layout of Report
  - Distribution to Relevant Personnel
  - Implementing Actions
  - Further Necessary Actions Personnel & Equipment
  - Further Feedback & Reports

#### **Day Five:**

- Case Studies and Group Discussions
- Discussions & Videos (Piper Alpha & Accident Investigation Process)
- Desk Top Exercises
- Role Play
- Practical Exercises (were possible at site)
- Course Review and Discussions
- Course Evaluations
- Summary

## **ACCIDENT AND INCIDENT INVESTIGATION IN THE OIL & GAS INDUSTRY**

### **Course Objective:**

Accidents and Incidents are part of the Reactive Monitoring System. There is never a single cause for an accident or an incident. This seminar is designed to give the participants an insight in the complexity of Accidents and Incidents and the methods for prevention and reducing both Accidents and the resulting costs.

### **Course Overview:**

This program will describe accidents and incidents and their causes. Risk Assessment is included as the basis of prevention. Methods of fact finding and interviewing as well as the shape of the final report will also be discussed.

**Participants are requested** to bring with them:

- An accident report from their own department, which they will present and will be discussed by the participants;
- A Standard Accident Incident Investigation Report Form, which they will present to the other participants.

**Course Duration:** Three Days

### **Who Should Attend:**

Safety Managers, Officers, Supervisors and those who involved or concerned with Occupational Health and Safety Implementation of policies, control and monitoring, within their organization.

### **Course Outline:**

- Introduction to Accidents & Incidents
  - Definitions of Accidents & Incidents
- Why Investigate Accidents & Incidents
  - RIDDOR (Reporting of Injuries, Diseases and Dangerous Occurrences Regulations of the UK)
  - Objective of Investigations
  - Barriers to Investigations
- Causation, Costs and Preventative Opportunity
  - Accident Triangles - Preventative opportunity
  - Costs & Cost Benefit Analysis

- Causes of Accidents
  - Domino Theory, Chain Reaction
  - Unsafe Acts – Unsafe conditions
  - Personal factors – Job Factors
  - Root Causes
  - Analysing Causes
  
- Accident Prevention
  - Safety Management Systems
  - Risk control systems (RCS)
  - Risk Assessment
  - Risk Assessment Exercises
  - HAZOP Studies
  
- The investigation team
  - Terms of Reference
  - Single person
  - Team
  
- Investigative Procedures
  - Establish facts
  - Analyse facts
  - Fault Tree Analysis (FTA)
  
- Interviews
- The Report
- Case Studies Discussions of Piper Alpha, Flixborough & The Explosion and fires at the Texaco Refinery, Milford Haven, 24<sup>th</sup> July 1994
- Course Evaluation
- Summary

### **Questionnaires:**

Several Questionnaires and Group Exercises will be presented in order to evaluate the response and the course comprehension.

### **Program Support:**

This program is supported by H & S videos to emphasize certain aspects of this program and to highlight critical points as well as case studies of accidents & incidents in the Petrochemical Industry.

'Piper Alpha' – BBC Production

'Flixborough' – BBC Production

'A Fatal Decision' (entry into confined space) – CLF Vision Company



'Unsafe Acts - Human Behaviour' - National Safety Compliance USA  
'How To Investigate An Accident' - National Safety Compliance USA

## Advanced Fire Fighting

### Course Background:

Uncontrolled fires cause loss of millions of dollars and despite modern fire fighting equipment the abilities and efficiency of the fire fighters make the difference in how fires are contained and eliminated. Reducing risks of uncontrolled fires and fire prevention is a major consideration and requires full understanding of what fire is, why they start and what they feed on.

This course is designed to teach the theory and practice of fire fighting including the reason fire are caused, the dangers and damages involved and the loss of life, limb and property caused by uncontrolled fires. It all discuss modern philosophy of fire fighting techniques and reviews the students knowledge

and gives the information available for fire prevention and the actions when uncontrolled fire are discovered and the immediate procedures involved.

It will also cover the fire equipment including the correct use, maintenance and hazards involved.

**Course Duration:** Three Days

### Course Learning Objectives:

**On completion of this course the participants will be able to understand or will have reviewed:**

- How uncontrolled fires are started and the loss of life and limb that occurs.
- The combustion hazards in the workplace and industrial areas caused by flammables and the various types and characteristics
- The type of first hand fire fighting equipment and effective use
- Basic Fire Fighting teams responsibilities - Theory and Practice
- Basic Rescue Techniques
- The immediate responses and actions for containment and damage limitations
- Fire action plan for Hazards containment both Primary and Secondary
- Action plans of how to warn the General Public

### Who Should Attend:

Company fire crew supervisors, firemen and fire team personnel or any company employee ie Storeman, Petrochemical Technicians, Laboratory Staff / Oil & Gas personnel or those who may be possibly faced with a fire hazard and be responsible for first hand containment or involved with containment of spread of fire hazards primary and secondary.

## **Daily Contents:**

### **Day One:**

#### **GENERAL REVIEW OF SKILLS AND KNOWLEDGE**

- The Fire Triangle and Fire Characteristics
- How fires start and Combustion and Spark Principles
- Fire Prevention Methods and Employee Responsibilities
- Deaths and Injuries Reports in Industrial & Domestic Fires
- Types of Fires: Petrochemical, Chemical,
- Oil & Gas and Other Materials
- First Hand Fire Equipment & Appliances: Water, Foam and Chemical
- Types, Colour Codes and Effective Use
- The Dangers and Hazards of Fire: Speed & Spread
- Smoke: Toxic and Asphyxia

#### **MODERN FIRE FIGHTING PHILOSOPHY**

- Fire Fighting Technology
- New techniques in Fire Fighting

### **Day Two**

#### **EFFECTS OF FIRES AND FIRE HAZARDOUS MATERIALS**

- Hazards: Burns and Smoke Hazards, Gassing, Smoke Inhalation & Choking
- Shock, Dangers of Shock and Reduction of Shock
- Associated Secondary Fire Hazards: Building collapse etc.
- Hydrants and Water Supply Plan and Usage
- Fire Fighting Crew Teamwork and Responsibilities
- Ladders: Use in Fire Fighting and Rescue Techniques
- Fire Practical ( If required and depending on facilities)

#### **FIRE EQUIPMENT & FIRE FIGHTING**

- Fire Alarms and Systems
- Fire Equipment: Testing and Maintenance
- Personal Protection Equipment (PPE), Clothing and Head Gear
- Breathing Apparatus (BA): Use, Testing and Maintenance
- Basic Rescue Techniques

### **Day Three**

#### **FIRE PLANS AND ACTIONS**

- Fire and Associated Risk Assessment
- Risk versus Reality
- Specific and Flexible Fire Plans
- General Public Considerations and Warnings
- Downwind Hazards From Fire By Products
- Special Considerations
- Environmental Considerations

#### **COURSE REVIEW AND CLOSURE**

- Fire Theory and Practice Test
- Case Studies
- Group Discussions
- Course Evaluation
- Course Summary

### **Program Support:**

The program is supported by videos and audio / visual techniques, also instructional manuals designed for specific action systems to assist the user.

### **Program Administration:**

If possible and for practical demonstrations, all fire equipment is to be made available at site, (a list of equipment and training requirements will be forwarded).

Specific designated fire fighting practical area and combustible materials will also need to be at hand prior to commencement of training. Please liaise with the training provider.

## **Advanced Risk Assessment with Production & Operation**

### **Course Background:**

In all places of work particularly where there are associated risks involved with production, processing and manufacturing, there are also associated risks from chemicals, machinery and moving equipments. These need to be risk assessed and quantified to protect employees and the property concerned. Risks can be assessed on various levels and a plan of Risk Areas can be formulated and coordinated. This course will provide the tools for Risk Assessment to be carried out and qualified.

### **Course Learning Objectives:**

**Upon completion of this course, participants will have a complete understanding of:**

- The practical applications of Risk Assessment in the Hazardous workplace including, the Cause and Effects, Fault Analysis and Investigations Process and Techniques.
- The ability to Identify Work Hazards and Establish Resources including Preventative and Necessary Corrective Measure & Systems.

**Course Duration:** Five days

### **Who Should Attend:**

This course is intended for Managers, Supervisors, Team Leaders and others, who are responsible for Health, Safety and Environmental protection of personnel and property.

### **Course Contents:**

- The Role of Risk assessment within Management System
- Semi-Quantitative Criteria for Tolerability of Risk
- Framework for Risk Assessment
- How to Carry Out Semi-Quantitative Risk Assessment
- Risk Assessment Techniques - Equipment Based and Task Based Approaches

- Fire and Chemical Hazards Identification and Analysis
  - Machinery Hazard Identification and Analysis Techniques: Human Error and Accident Causation (Latent and Active Errors)
  - Multi-Causal Catalysts, Events and Outcomes
- 
- Practical Applications, Case Studies on Work Equipment Risk Assessment
  - Case Effect and Fault Tree Analysis as a Deductive Technique for the Analysis of Accident Causation
  - Analysis of High Potential Accidents
  - Techniques of Accident Investigation, Analysis and Reporting
  - Prioritizing and Targeting Corrective / Preventative Measures
  - Mechanisms for Implementing, Control, Monitoring and Review of Action Plans
  - EU and Saveso Directives
  - Practical Element including: Case Studies & Discussions
  - Exercises Analysis and Conclusions (Practical wherever possible)
  - Course Summary and Evaluation

**Program Support:** The program is supported by Videos and Actual Events Study Analysis from Piper Alpha, Mexico City Chemical Incident and Saveso Incident

## **Basic Fire Fighting & Fire Fighting Equipment**

### **Course Background:**

Uncontrolled fires cause loss of millions of dollars and despite modern fire fighting equipment the abilities and efficiency of the fire fighters make the difference in how fires are contained and eliminated. Reducing risks of uncontrolled fires and fire prevention is a major consideration and requires full understanding of what fire is, why they start and what they feed on.

This course is designed to teach the theory and practice of fire fighting including the reason fire are caused, the dangers and damages involved and the loss of life, limb and property caused by uncontrolled fires.

It will also cover the fire equipment including the correct use, maintenance and hazards involved.

**Course Duration:** Five Days

### **Course Learning Objectives:**

**On completion of this course the participants will be able to confirm:**

- How uncontrolled fires are started and the loss of life and limb that occurs.
- The combustion hazards in the workplace and industrial areas caused by flammables and the various types and characteristics
- The type of first hand fire fighting equipment and effective use
- Basic Fire Fighting teams responsibilities - Theory and Practice
- Basic Rescue Techniques and Basic Resuscitation

### **Daily Contents:**

#### **Day One**

- The Fire Triangle and Fire Characteristics
- Fire Prevention Methods and Employee Responsibilities
- Deaths and Injuries Reports in Industrial & Domestic Fires
- Types of Fires: Petrochemical, Chemical,
- Oil & Gas and Other Materials

### **Day Two**

- How fires start and Combustion and Spark Principles
- The Dangers and Hazards of Fire: Speed & Spread
- Smoke: Toxic and Asphyxia
- First Hand Fire Equipment & Appliances: Water, Foam and Chemical
- Types, Colour Codes and Effective Use
- Fire Equipment: Testing and Maintenance
- Personal Protection Equipment (PPE), Clothing and Head Gear
- Breathing Apparatus (BA): Use, Testing and Maintenance

### **Day Three**

- Fire Alarms and Systems
- Fire and Associated Risk Assessment
- Basic Rescue Techniques & Transporting Casualties
- Basic Resuscitation Techniques and Cardiopulmonary Resuscitation (CPR)
- Hazards: Burns and Smoke Hazards, Gassing, Smoke Inhalation & Choking
- Shock, Dangers of Shock and Reduction of Shock

### **Day Four**

- Associated Secondary Fire Hazards: Building collapse etc.
- Actions in a Fire Emergency
- Basic Fire Engine Layout and Equipment
- Hydrants and Water Supply
- Fire Fighting Crew Teamwork and Responsibilities
- Ladders: Use in Fire Fighting and Rescue Techniques

### **Day Five**

- Practical Fire Fighting & Fire Containment Exercises
- Fire Theory and Practice Test
- Case Studies and Discussions

### **Who Should Attend:**

Dedicated company fire crew supervisors, firemen and fire team personnel or any company employee ie Storeman, Petrochemical Technicians, Laboratory Staff / Oil & Gas personnel or those who may be possibly faced with a fire hazard and be responsible for first hand containment.

### **Program Support:**



The program is supported by videos and audio / visual techniques. Also instructional manuals designed for specific action systems to assist the user.

The course is taught to British standards of Fire Fighting standards.

**Program Administration:**

All fire equipment is to be made available at site, (a list of equipment and training requirements will be forwarded).

Certain high areas for rescue practice and certain combustible materials will also need to be at hand prior to commencement of training.

Suitable outdoor areas available for practical and physical practice of training and testing under controlled supervision of the conducting fire and first aid trainer.

## Basic Fire Fighting & Portable Fire Extinguishers

### Course Background:

Uncontrolled fires cause loss of millions of dollars and despite modern fire fighting equipment the abilities and efficiency of the fire fighters make the difference in how fires are contained and eliminated. Reducing risks of uncontrolled fires and fire prevention is a major consideration and requires full understanding of what fire is, why they start and what they feed on.

This course is designed to teach the theory and practice of fire fighting including the reason fire are caused, the dangers and damages involved and the loss of life, limb and property caused by uncontrolled fires.

It will also cover the fire equipment including the correct use, maintenance and hazards involved.

**Course Duration:** Five Days

### Course Learning Objectives:

**On completion of this course the participants will be able to confirm:**

- How uncontrolled fires are started and the loss of life and limb that occurs.
- The combustion hazards in the workplace and industrial areas caused by flammables and the various types and characteristics
- The type of first hand fire fighting equipment and effective use
- Basic Fire Fighting teams responsibilities - Theory and Practice
- Basic Rescue Techniques and Basic Resuscitation
- Static and Portable Fire Extinguishers: Types & Effective Usage

### Daily Contents:

#### Day One

- The Fire Triangle and Fire Characteristics
- Fire Prevention Methods and Employee Responsibilities
- Deaths and Injuries Reports in Industrial & Domestic Fires
- Types of Fires: Petrochemical, Chemical,
- Oil & Gas and Other Materials

## **Day Two**

- How fires start and Combustion and Spark Principles
- The Dangers and Hazards of Fire: Speed & Spread
- Smoke: Toxic and Asphyxia
- First Hand Fire Equipment
- Static and Portable Appliances: Water, Foam and Chemical
- Types, Colour Codes and Effective Use
- Fire Equipment: Testing and Maintenance
- Personal Protection Equipment (PPE), Clothing and Head Gear
- Breathing Apparatus (BA): Use, Testing and Maintenance

## **Day Three**

- Fire Alarms and Systems
- Fire and Associated Risk Assessment
- Basic Rescue Techniques & Transporting Casualties
- Basic Resuscitation Techniques and Cardiopulmonary Resuscitation (CPR)
- Hazards: Burns and Smoke Hazards, Gassing, Smoke Inhalation & Choking
- Shock, Dangers of Shock and Reduction of Shock

## **Day Four**

- Associated Secondary Fire Hazards: Building collapse etc.
- Actions in a Fire Emergency
- Basic Fire Engine Layout and Equipment
- Hydrants and Water Supply
- Fire Fighting Crew Teamwork and Responsibilities
- Ladders: Use in Fire Fighting and Rescue Techniques

## **Day Five**

- Practical Fire Fighting & Fire Containment Exercises
- Fire Theory and Practice Test
- Case Studies and Discussions

## **Who Should Attend:**

Dedicated company fire crew supervisors, firemen and fire team personnel or any company employee ie Storeman, Petrochemical Technicians, Laboratory



Staff / Oil & Gas personnel or those who may be possibly faced with a fire hazard and be responsible for first hand containment.

**Program Support:**

The program is supported by videos and audio / visual techniques. Also instructional manuals designed for specific action systems to assist the user.

The course is taught to British standards of Fire Fighting standards.

**Certification:**

Certificates of competence in theory and practice are awarded on full completion of the course.

**Program Administration:**

All fire equipment is to be made available at site, (a list of equipment and training requirements will be forwarded).

Certain high areas for rescue practice and certain combustible materials will also need to be at hand prior to commencement of training.

Fire Engine and associated equipment is also requested to be available.

Suitable outdoor areas available for practical and physical practice of training and testing under controlled supervision of the conducting fire and first aid trainer.

## **BASIC FIRST AID & EMERGENCY PROCEDURES**

### **Course Background:**

At any time we may be called upon to help and administrate First Aid to our colleagues, family or any other persons. In the crucial time prior to arrival or Ambulance or Para Medics, You could sustain the injured person/s and prevent loss of life or any further injuries.

This course is designed to give the potential first aiders the competencies involved and the variety of basic principles that are required to be applied and the knowledge of how they can assist in first aid situations.

The course can also be used as an annual refresher course for those who need to be updated / re-qualified and keep up to date with the latest first aid methods.

This course is conducted to the standards of St John's Ambulance, United Kingdom and is conducted with a Fully Qualified Instructor.

### **Course Objectives:**

- To instruct attendees in the First Aid principles in order to save life and prevent further damage to persons suffering from various injuries or physical conditions.
- To give the trainees the ability to cope with and administer first aid during a situation or emergency until arrival of professional personnel.
- To ensure that the trainees can sufficiently administrate Cardiopulmonary Resuscitation (CPR) to those who require it.
- To refresh, remind and re-qualify First Aider/s who have expired their qualify minimal time of two years since basic training.
- To practice the skills of Competent First Aid.

**Course Duration:** Five days

### **Who Should Attend?**

First Aid Personnel and Staff who will be expected to administer first aid whenever required both in the working and non working environments. This course can also be refresher course for those already qualified but are required to be updated annually.

**DAY 1:**

**INTRODUCTIONS & ADMINISTRATION**

**Module 1                    Principle, Priorities and Practices of First Aid in an Emergency Situation**

**Competency**            On completion of training the delegate will be able to act safely, promptly and effectively when an emergency occurs at work and define First aid priorities. Confidently make a basic diagnosis and examine a casualty to decide appropriate actions and casualty risk assessment.

**Module 2                    Asphyxia**

**Competency**            On completion of training the delegate will be able to administer First Aid safely and promptly to a casualty who has been overcome by gas or fumes.

**Module 3                    Cardio-Pulmonary Resuscitation (CPR)**

**Competency**            On completion of training the delegate will be able to administer Cardio-Pulmonary Resuscitation (CPR), promptly and effectively. Delegates would demonstrate using CPR Kit.

**Module 4                    Causes of Unconsciousness and Treatment**

**Competency**            On completion of training the delegate will be able to administer First Aid safely, promptly and effectively to a casualty who is unconscious.

## REVISION & REVIEW

### DAY 2:

#### **Module 5                    Wounds and Bleeding**

**Competency:**            On completion of training the delegate will have the ability to administer First Aid safely, promptly and effectively to a casualty who is wounded or bleeding using available resources.

#### **Module 6                    Shock**

**Competency:**            On completion of training the delegate will have the ability to administer First Aid safely, promptly to a casualty who is in shock and understand the rules that are applied.

#### **Module 7                    Burns and Scalds**

**Competency:**            On completion of training the delegate will have the ability to First Aid safely, promptly to a casualty who has been burnt or scalded by different hot liquids or extreme heat contacts.

#### **Module 8                    Fractures Sprains Strains and Dislocations**

**Competency:**            On completion of training the delegate will have the ability to administer First Aid safely and effectively to a casualty who is suffering an injury to bones, muscles or joints.

## REVISION & REVIEW

### DAY 3:

#### **Module 9                    Eye Injuries**

**Competency**                    On completion of training the delegate will be able to administer First Aid safely, promptly and effectively to a casualty who has an eye injury.

#### **Module 10                    Poisons & Hazardous or Corrosive Liquids**

**Competency**                    On completion of training the delegate will be able to administer First Aid safely and promptly to a casualty who has been poisoned or has swallowed Hazardous or Corrosive Liquids.

#### **Module 11                    Medical Conditions**

**Competency**                    On completion of training the delegate will have the ability to recognize common major illnesses and take the appropriate action.

#### **Module 12                    Minor Injuries**

**Competency**                    On completion of training the delegate will have the ability to treat minor injuries.

#### **Module 13                    Electrical Casualties**

**Competency**                    On completion of training the delegate will have the ability to recognize and treat effectively persons suffering from Electrical Injuries.

## **REVISION & REVIEW**

### **DAY 4:**

**Module 14                    Regulations Reporting & Recording First Aid Boxes in the Workplace**

**Competency**                    On completion of training the delegate will have the ability to maintain simple record keeping, be able to use materials in the First Aid box and be familiar with the duties of employers.

**Module 15                    Personal Care & Hygiene Hepatitis B and HIV**

**Competency**                    On completion of training the delegate will be able to demonstrate knowledge and understanding of the importance of personal hygiene in first aid and company policy and procedures.

**Module 16                    Heat Exhaustion and Hypothermia**

**Competency**                    On completion of training the delegate will be able to understand the effects and treatment for those suffering from Heat Exhaustion or Hypothermia.

**Module 17                    Accident and Incident Reporting**

**Competency**                    On completion of training the delegate will be able to understand the importance of accident and Incident reporting in accordance with company policies and general

## **REVISION & REVIEW**

### **DAY 5:**

#### **FINAL ASSESSMENTS:**

- **Practical Group Examination of Casualties**
- **Casualty Incident Simulation Exercises**
- **Theory Assessments**
- **Course Review**

#### **GROUP DISCUSSIONS**

#### **COURSE EVALUATION**

#### **COURSE SUMMARY & CERTIFICATIONS**

## **Breathing Apparatus (BA)**

### **Course Background:**

In any situation where artificial breathing facilities is required it is essential that the Breathing Apparatus (BA), as part of Personal Protection Equipment is working efficiently to help sustain your life in a Hazardous and Confined Spaces environment and to afford maximum protection.

**It is also essential to know when the BA should be used and the applications involved according to OSHA standards and regulations.**

### **Learning Objectives:**

This course is designed to give the participants:

- The identifying the types of environments where BA must be used
- The safe techniques involved in using a BA system
- The Equipment checks prior to use in a hazardous environment
- The care and maintenance involved and the essential checks prior to usage
- OSHA's regulations overview
- Testing before use
- Practical applications and exercises (if facilities available)

**Course Duration:** Two Days

### **Daily Contents:**

#### **Day One**

- Introduction to BA and overview of OSHA's regulations for BA systems
- Identification of hazardous environments and situations where BA must be worn including:
  - Smoke & Carbon Monoxide
  - Toxic and Asphyxia
  - Gassing,
  - Smoke Inhalation & Choking
  - Working with hazardous or carcinogenic materials
  -
- The characteristics and types of BA systems
- Equipment life spans
- Checks prior to and after usage
- Testing and Maintenance

## **Day Two**

- Demonstration in a defined area BA Practical\*
- Practical BA procedure Individual and in teams
- BA and Equipment Efficiency Testing and Assessments
  
- Group Discussions
- Course Evaluation
- Course Summary

\*Individuals demonstrate their ability to efficiently use BA equipment in a realistic situation under supervisory arrangement Testing in Confined Spaces (if facilities available).

## **Who Should Attend:**

Firemen and fire team personnel or any company employee ie Storeman, Petrochemical Technicians, Laboratory Staff / Oil & Gas personnel or those who may be possibly faced with a fire hazard or any other environment where BA systems is necessary to be used.

## **Program Administration:**

BA equipment to be made available, (a list of equipment and training requirements will be forwarded).

Suitable outdoor areas available for practical and physical practice of training and testing under controlled supervision of the conducting fire and first aid trainer.

## **Cardio Pulmonary Resuscitation (CPR) Course**

### **Course Background:**

At any time we may be called upon to help and administrate Cardio Pulmonary Resuscitation (CPR) to our colleagues, family or any other persons. With the correct skills you could sustain the injured person/s and prevent loss of life or any further injuries.

This course is designed to give the potential first aiders the variety of basic principles that are required to be applied and the knowledge of how they can assist in CPR situations. The course can also be used as an annual refresher course for those who need to be updated / re-qualified and keep up to date with the latest first aid methods.

**This course is approved by the St John's Ambulance, United Kingdom**

### **Course Objectives:**

- To instruct attendees in the First Aid principles in order to save life and prevent further damage to persons suffering from various injuries or physical conditions.
- To ensure that the trainees can sufficiently administrate Cardiopulmonary Resuscitation (CPR) to those who require it.
- To refresh, remind and re-qualify First Aider/s who have expired their qualify minimal time of two years since basic training.

**Course Duration:** One Day

### **Course Contents:**

- Principles and Practices of First Aid & The Aims of First Aid
- Responsibility of a First Aider and Actions in an Emergency
- Cardiopulmonary Resuscitation (CPR) Principles
- Theory of CPR
- Practical Exercises Using CPR Apparatus
- Electrical Casualties Handling
- Paediatric, Handling Situations
- Recovery Positions
- Exercises
- Competency Assessments
- Course Evaluation and Summary

### **Who Should Attend?**

First Aid Personnel and existing Staff who may find a critical situation requiring CPR skills in working and non working environments.

## **Emergency Handling in the Plant and Refinery Industry**

### **Course Introduction:**

Critical situations and events in Plants and Refineries must be handled in such a way so as not to cause more harm to personnel or damage to the Industry concerned. This takes careful planning and implementation and should there be an occurrence it follows that the right personnel have the ability to deal with the situation effectively and safely.

This course is designed to The Participants will understand the different emergency situations and how to control them effectively and understanding all aspects to be covered prior to and in the event of and situation arising.

It also covers the events which must include the local environment impacts and uses considerable case study as examples of handling techniques and precautions.

### **Course Duration: Five Days**

### **Who should attend**

Process Engineers and Maintenance Engineers.

### **Course Contents Outline:**

#### **Day One**

#### **Philosophy and Methodology of Emergency Handling & Resources and Planning Required for Emergency Handling Including:**

##### **Emergency Plans**

- Legal Requirements
- Moral Requirements
- Objectives of Emergency Plans
- Responsibility for Planning

##### **Hazard Identification**

- "HAZOP" and Emergency Plans
- "What If" and emergency Plans

## Day Two

### **Internal Emergency Plans**

- Scope of Plans
- Responsibilities and Organizational Structure
- Key Components
  - Hazard Identification,
  - Initiation of Emergency plans
  - Response,
  - Resources available
  - Casualty Handling
  - Care of the uninjured survivors etc.

## Day Three

- Typical Onsite Emergency Plans in a Refinery and Initial Response.
  - Fire.
  - Explosion risk.
  - Release of Vapour / Gas.
  - Oil Spillage.
  - Chemical spillage.
  - Earthquake.
  - Floods & heavy Rain.
  - High winds and Hurricanes
  - Bomb threat
  - Terrorist attack
  - Plant emergency shutdowns.
    - Power failure,
    - Cooling water failure.
    - Instrument air failure.
    - Steam failure.

## Day Four

- Key personnel and their responsibilities
  - Site Incident Controllers
  - Site Main Controllers

### **External Emergency Plans**

- Scope of Plans
- Responsibilities and Organizational Structure



Key Components

Calling the emergency,  
Response,  
Hazard Identification,  
Resources available etc.

### **Day Five**

Liaison with Local and Government Authorities  
Information to the Emergency services  
Emergency Services Response  
Police  
Fire Brigade  
Ambulance Service  
Health Department  
Epidemiological follow up

Environmental Response

Mutual Aid  
Emergency Control Center  
Training and Testing of Emergency Plans  
Working with the Media  
Working with the Public  
Recovery & Rebuilding  
Case Studies  
Group Discussions  
Course Evaluation  
Course Summary

### **Program Support:**

This program is supported by videos to emphasize certain aspects of this program and to highlight critical points. Case studies of the Seveso Accident and Piper Alpha will be studied.

### **Videos:**

**1“ Incident Command Management Systems – (Three Videos);  
“The Flixborough Disaster” a BBC production;**



## **“Emergency Planning”**

### **Emergency Management & Planning**

#### **Course Introduction:**

Critical situations and events must be handled in such a way so as not to cause more harm to personnel or damage to the Industry concerned. This takes careful planning and implementation and should there be an occurrence it follows that the right personnel have the ability to deal with the situation effectively and safely.

This course is designed to The Participants will understand the different emergency situations and how to control them effectively and understanding all aspects to be covered prior to and in the event of and situation arising.

It also covers the events which must include the local environment impacts and uses considerable case study as examples of handling techniques and precautions.

**Course Duration:** Five Days

#### **Who should attend**

Emergency Planning Managers and Emergency Planning Personal, also of great benefit to Process and Maintenance Engineers.

#### **Course Contents Outline:**

##### **Day One**

Philosophy and Methodology of Emergency Handling & Resources and Planning Required for Emergency Handling Including:

- Emergency Plans
- Legal Requirements
- Moral Requirements
- Objectives of Emergency Plans
- Responsibility for Planning

- Hazard Identification
- “HAZOP” and Emergency Plans
- “What If” and emergency Plans

## Day Two

### **Internal Emergency Plans**

- Scope of Plans
- Responsibilities and Organizational Structure
- Key Components
  - Hazard Identification,
  - Initiation of Emergency plans
  - Response,
  - Resources available
  - Casualty Handling
  - Care of the uninjured survivors etc.

## Day Three

- Typical Onsite Emergency Plans in a Refinery and Initial Response.
  - Fire.
  - Explosion risk.
  - Release of Vapour / Gas.
  - Oil Spillage.
  - Chemical spillage.
  - Earthquake.
  - Floods & heavy Rain.
  - High winds and Hurricanes
  - Bomb threat
  - Terrorist attack
  - Plant emergency shutdowns.
    - Power failure,
    - Cooling water failure.
    - Instrument air failure.
    - Steam failure.

## Day Four

- Key personnel and their responsibilities
  - Site Incident Controllers
  - Site Main Controllers

### **External Emergency Plans**

- Scope of Plans
- Responsibilities and Organizational Structure
- Key Components

- Calling the emergency,
- Response,
- Hazard Identification,
- Resources available etc.

## **Day Five**

- Liaison with Local and Government Authorities
- Information to the Emergency services
- Emergency Services Response
  - Police
  - Fire Brigade
  - Ambulance Service
  - Health Department
  - Epidemiological follow up
  
- Environmental Response
  - Mutual Aid
  - Emergency Control Center
  - Training and Testing of Emergency Plans
  - Working with the Media
  - Working with the Public
  - Recovery & Rebuilding
  - Case Studies
  - Group Discussions
  - Course Evaluation
  - Course Summary

## **Program Support:**

This program is supported by videos to emphasize certain aspects of this program and to highlight critical points. Case studies of the Seveso Accident and Piper Alpha will be studied.

## **Videos:**

- 1“ Incident Command Management Systems – (Three Videos);
2. “The Flixborough Disaster” a BBC production;
3. “Emergency Planning”

## Emergency Management Leadership

### Course Background:

Over the past twenty years there have been major catastrophes and disaster that could have been avoided. Most incidents are a result of human errors and wherever there are dangerous substances in processing the threat is amplified to the employees and local communities.

The key to any occurrence is to ensure that managers and supervisors are equipped with the skills and knowledge to cope with the immediate situation, until the arrival of specialist agencies ie Fire, Police and Ambulance. As in any management and leadership scenarios the action plan and potential execution must be firmly grasped by those responsible prior to any possible major incident or occurrences.

**Course Duration:** Five Days

### Course Description:

The course will present the legal and Trans-boundary issues of Emergencies in the Petrochemical Industry as well as emergency prevention measures and the planning of emergency response scenarios. The course will highlight hazardous tasks that may lead to an emergency.

**The course will also look at the Seveso directive, which governs the emergency response planning and prevention within the EU.**

{After the accident at Seveso Italy in 1976 the EU introduced the Seveso Directive in 1982. The directive was updated twice in 1987 and 1988. In 1996 the Seveso II directive was adopted and made enforceable throughout the EU as from the 3<sup>rd</sup> February 1999. The aim of Seveso II is:

- a. Prevention of major-accident hazards involving dangerous substances and
- b. The limitation of the consequences of such accidents not only for man but also for the environment.

Seveso II covers both industrial and storage facilities in which there is a presence of both dangerous chemicals and substances.}

### **Learning Objectives:**

Upon completion of this course, participants will have gained an understanding of the modern philosophy of Planning, Control and Handling of Situations in Emergencies in the Petrochemical Industry. Participants will also have gained knowledge of current standards and European legislation

### **Course Contents:**

#### **Emergency Plans**

#### **Social and Legal Pressures:**

- Basic Reasons
- The Seveso II Directive (EU legislation)

#### **Safety Management Systems:**

- Safety
- Accidents
- Accident Prevention Systems
- CBA (Cost Benefit Analysis)
- Major Accident Prevention Policy (MAPP)
- Risk Assessment

#### **Planning for**

#### **& Handling Emergencies**

- Organisation of Emergency Services
  - Emergency Control Center
  - Fire & Safety Department
  - The role of the shift supervisor
  - Call out Personnel
  - Casualty Handling
  - Rescue
  - Evacuation
  - Mutual Aid Plans
  - Management Role
  - Public Relations - Media in emergencies
  - Catering
  - Training / Rehearsals
- Emergency Plans - On-Site and Off-Site
- What the emergency services and local authorities must know
- What the public must know

### **Management:**

- Accident Incident Investigation
- Fire Safety Audits
- Safety committees
- Job Attitudes / Training & Staff development
- Contractors
- Disasters examples of leadership under extreme pressure to resolve **Out of Control Situations.**

### **Program Support:**

This course is supported videos, case studies and interactive discussions.

## Emergency Management Leadership

### Course Background:

Over the past twenty years there have been major catastrophes and disaster that could have been avoided. Most incidents are a result of human errors and wherever there are dangerous substances in processing the threat is amplified to the employees and local communities.

The key to any occurrence is to ensure that managers and supervisors are equipped with the skills and knowledge to cope with the immediate situation, until the arrival of specialist agencies ie Fire, Police and Ambulance. As in any management and leadership scenarios the action plan and potential execution must be firmly grasped by those responsible prior to any possible major incident or occurrences.

**Course Duration:** Five Days

### Course Description:

The course will present the legal and Trans-boundary issues of Emergencies in the Petrochemical Industry as well as emergency prevention measures and the planning of emergency response scenarios. The course will highlight hazardous tasks that may lead to an emergency.

**The course will also look at the Seveso directive, which governs the emergency response planning and prevention within the EU.**

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### **Learning Objectives:**

Upon completion of this course, participants will have gained an understanding of the modern philosophy of Planning, Control and Handling of Situations in Emergencies in the Petrochemical Industry. Participants will also have gained knowledge of current standards and European legislation

### **Course Contents:**

#### **Emergency Plans**

#### **Social and Legal Pressures:**

- Basic Reasons
- The Seveso II Directive (EU legislation)

#### **Safety Management Systems:**

- Safety
- Accidents
- Accident Prevention Systems
- CBA (Cost Benefit Analysis)
- Major Accident Prevention Policy (MAPP)
- Risk Assessment

#### **Planning for**

#### **& Handling Emergencies**

- Organisation of Emergency Services
  - Emergency Control Center
  - Fire & Safety Department
  - The role of the shift supervisor
  - Call out Personnel
  - Casualty Handling
  - Rescue
  - Evacuation
  - Mutual Aid Plans
  - Management Role
  - Public Relations - Media in emergencies
  - Catering
  - Training / Rehearsals
- Emergency Plans - On-Site and Off-Site
- What the emergency services and local authorities must know
- What the public must know

### **Management:**

- Accident Incident Investigation
- Fire Safety Audits
- Safety committees
- Job Attitudes / Training & Staff development
- Contractors
- Disasters examples of leadership under extreme pressure to resolve **Out of Control Situations.**

### **Program Support:**

This course is supported videos, case studies and interactive discussions.

## Emergency Planning & Controls

### Course Background:

Over the past twenty years there have been major catastrophes and disaster that could have been avoided. Most incidents are a result of human errors and wherever there are dangerous substances in processing the threat is amplified to the employees and local communities.

The key to any occurrence is to ensure that managers and supervisors are equipped with the skills and knowledge to cope with the immediate situation, until the arrival of specialist agencies i.e. Fire, Police and Ambulance. As in any management and leadership scenarios the action plan and potential execution must be firmly grasped by those responsible prior to any possible major incident or occurrences.

**Course Duration:** Five Days

### Course Description:

The course will present the legal and Trans-boundary issues of Emergencies in the Petrochemical Industry as well as emergency prevention measures and the planning of emergency response scenarios. The course will highlight hazardous tasks that may lead to an emergency.

**The course will also look at the Seveso directive, which governs the emergency response planning and prevention within the EU.**

{After the accident at Seveso Italy in 1976 the EU introduced the Seveso Directive in 1982. The directive was updated twice in 1987 and 1988. In 1996 the Seveso II directive was adopted and made enforceable throughout the EU as from the 3<sup>rd</sup> February 1999. The aim of Seveso II is:

- c. Prevention of major-accident hazards involving dangerous substances and
- d. The limitation of the consequences of such accidents not only for man but also for the environment.

Seveso II covers both industrial and storage facilities in which there are a presence of both dangerous chemicals and substances.}

### **Learning Objectives:**

Upon completion of this course, participants will have gained an understanding of the modern philosophy of Planning, Control and Handling of Situations in Emergencies in the Petrochemical Industry. Participants will also have gained knowledge of current standards and European legislation

### **Course Contents:**

#### **Emergency Plans**

#### **Social and Legal Pressures:**

- Basic Reasons
- The Seveso II Directive (EU legislation)

#### **Safety Management Systems:**

- Safety
- Accidents
- Accident Prevention Systems
- CBA (Cost Benefit Analysis)
- Major Accident Prevention Policy (MAPP)
- Risk Assessment

#### **Planning for**

#### **& Handling Emergencies**

- Organization of Emergency Services
  - Emergency Control Center
  - Fire & Safety Department
  - The role of the shift supervisor
  - Call out Personnel
  - Casualty Handling
  - Rescue
  - Evacuation
  - Mutual Aid Plans
  - Management Role
  - Public Relations - Media in emergencies
  - Catering
  - Training / Rehearsals
- Emergency Plans - On-Site and Off-Site
- What the emergency services and local authorities must know
- What the public must know

### **Management:**

- Accident Incident Investigation
- Fire Safety Audits
- Safety committees
- Job Attitudes / Training & Staff development
- Contractors
- Disasters examples of leadership under extreme pressure to resolve **Out of Control Situations.**

### **Program Support:**

This course is supported videos, case studies and interactive discussions.

## Emergency Response for On Scene Commanders

### COURSE OBJECTIVES:

The flattening of the management pyramid has increased the accountability of the first line manager, or supervisor. Training for emergencies will give the On Scene Incident Commander an overall view of what other people (Emergency Services and the Company) will be aiming for as well as an understanding of the basics of fire fighting and emergencies. The objective in any emergency situation is to limit the effects of such emergencies on: the personnel, the surrounding population, the plant and also on the environment. To this end the course is designed

### COURSE OVERVIEW:

Three elements make up the basis of successful emergency handling; Hazard Identification, Detailed Planning for the Hazards identified and the Theoretical and Practical Techniques of Fire Emergency Response.

The course is split into two sections.

**Section 1** (Three Days) will cover Internal Emergency Plans as well as External Emergency Plans, the necessities for liaison and alignment with Local and Government Authorities Plans and fire fighting techniques. The videos shown will enhance and assist in the learning process because there are both documentary – showing what has happen in true life situations – and also on the training end – the theory of Incident Command – by being the latest to be produce by the Emergency Film Group in Industrial Incident Management

**Section 2** (Two Days) will cover the Practical Techniques of fire fighting operations to 'Kill' or 'Contain' the Fire. It includes fire equipment utilisation, the correct use, maintenance and the practical hazards involved. The course will be conducted entirely at site areas for total outside practical applications it uses 'Walk Through' and 'Talk Through' Methods for Maximum Individual and Team Activities and Interaction. This section gives the participants 'on hands experience' in order to fully understand the physical difficulties posed to fire teams.

**Course Duration: Five Days**

**Who should attend?**

This course is for those Individuals involved in Planning and / or Handling Emergencies in the Refinery and would include; Safety Officers, Environmental Response Leaders, Site Incident Controllers, Site Main controllers, and the Emergency Services.

**QUIZZES:**

Three short quizzes will be presented for both verification and feedback purposes

**Daily Course Contents Outline:**

**Section 1:**

**Emergency Response Theoretical**

**Course Duration:** Three Days

**Emergency Plans**

- Legal Requirements
- Moral Requirements
- Objectives of Emergency Plans

**Organisations with a role to play in an Emergency**

**Information needs of the Emergency services**

**Internal Emergency Plans**

- Responsibilities and Organizational Structure
- Key Components
- Key personnel and their responsibilities
  - o Site Incident Controllers
  - o Site Main Controllers

**External Emergency Plans**

- Liaison with Local and Government Authorities
- Mutual aid
- Emergency Services Response
  - o Police

- Fire Brigade
- Ambulance Service
- Health Department
- Epidemiological follow up

**Emergency Control Center**  
**Training and Testing of Emergency Plans**  
**Working with the Media and Public**

**Fire fighting Techniques**

- Tank fires
- Furnace Tube Rupture
- Furnace Tube Leak
- Gas fires / Gas clouds
  
- **Accidents and the environment**
- **Oil spills on land and water**
- **Chemical spills**
- **Transportation accidents of hazardous substances**
- **Group Exercises & Discussions**
- **Course Evaluation & Summary**

**Section 2: Practical Fire fighting Techniques**

**Course Duration: Two Days**

**Day One**

- Introduction to fire and practical approaches
- Practical Fire Demonstration and Techniques
- 'Kill Fire' Demonstration using Portable Fire Extinguishers:
- First Hand Fire Equipment & Appliances: Water, Foam and Chemical
- Practical Use of Fire Equipment Types
- Fire equipment, Hoses, Reeling and Branches
- Testing and Care and Maintenance of Equipment including:
  - Port Fire Equipment ie Water gas and Foam
  - The Utilisation of Portable Extinguishers
  - Fire equipment, Hoses, Reeling and Branches
  - The Power of Fire Equipment versus the Type of Fire
- Personal Protection Equipment (PPE), Clothing and Head Gear
- Actions in a Fire Emergency

**Day Two**

- Rescue Techniques, Lifting and Carrying Injured Personnel  
Demonstration and Practical Exercises

- ❑ Physical Entries into confined Spaces
- ❑ Using Ladders Techniques and Practical Exercises
- ❑ **Individual & Fire Team Exercises**
- ❑ Primary and Secondary Fire Hazards
- ❑ Also to be Discussed during Practical Including:
  - Fire Hydrants and Water Supplies
  - Hazards: Burns and Smoke Hazards, Gassing, Smoke Inhalation & Choking
  - Associated Secondary Fire Hazards: Building collapse etc.
  - Fire Alarms and Systems
  - Smoke: Toxic and Asphyxia
  - Types, Colour Codes and Effective Use
  - Emergency Fire Procedures
  
- **Course Evaluation**
- **Course Summary**

### **Program Support:**

This program is supported by videos to emphasize certain aspects of this program and to highlight critical points. The Piper Alpha accident will be discussed as well as the Flixborough Disaster.

### **Videos:**

- **“The Flixborough Disaster” – BBC Production**
- **“The Piper Alpha Disaster” – BBC Production**
- **“Taking Control I of Industrial Incident Management” – Emergency Film Group**
- **“Incident Command in the Field II of Industrial Incident Management” – Emergency Film Group**
- **“The emergency Operations Centre III of Industrial Incident Management” – Emergency Film Group**
- **“Emergency Planning” – OSHA Training Programme**



## Environment, Safety & Health

### Learning Objectives:

Upon completion of this course, participants will have a complete understanding of the modern philosophy of Environment, Safety & Health.

### Course Description:

The course will present Safety, Health & Environmental principles and concerns, and Fire fighting.

There will be emphasis on the modern proactive approach with the use of risk assessments. The course will describe; Accidents – accident prevention, accident causes safe working systems; Occupational Health - principles, hazards. Gas Testing - Explosivity, toxicity, oxygen deficiency; Signs and Labels - new standards; Entry into confined spaces - hazards and precautions; Risk Assessment; Accident Incident investigation; Safety with contractors; Fire - prevention, fire fighting techniques; Process Safety Management; HAZOP; Emergency Plans; Environmental Issues.

### Who should attend

This course is for those **experienced** Individuals who are involved in the operation and management of the plant as well as supporting operations.

Course Duration: Three days

### Program Support:

This program is supported with videos, case studies and interactive discussions to emphasize and reinforce learning in this very important subject.

### Course Outline:

#### DAY 1

Introduction to Safety, Health, Security, Environment, & Fire Fighting Departments

#### **MANAGING SAFETY**

Accidents - Accident Triangles

Causes of Accidents

Accident Prevention

Cost Benefit Analysis

Accident Incident Investigation

Risk Assessment

Work Permit Systems

Effective Communication

#### **MANAGING OCCUPATIONAL HEALTH**

Chemical Hazards - body uptake, TLV etc.

Physical Hazards

Ergonomics

Blood Borne Pathogens

Psychological Hazards

Risk Assessment exercise & discussion

**Two videos (time permitting): Healthy Back, Stress**

**DAY 2**

### **ENTRY INTO CONFINED SPACES**

Definition

Gas Testing. Explosivity, Toxicity, Oxygen Deficiency

Hydrogen Sulphide - Pyrophoric Iron

Safe working systems

Gas freeing - Steam, water, use and hazards of inert gas

Hazards and precautions

**One Video: Fatal Decision**

### **SAFETY INSPECTIONS**

### **CONTRACTORS & SAFETY**

### **HAZOP**

HAZOP Exercise & discussion

**One Video: Flixborough**

**DAY 3**

### **Environmental Issues**

Kyoto

Global warming

Evolution of Waste Management

Acidification

Air quality

### **FIRE**

Prevention

Fire fighting Techniques

Tank Fires

Bulk Quantities of Liquid Gas

### *PROCESS SAFETY*

Process Safety Management (OSHA Standards)

Seveso II (European Standards)

Emergency Plans

**One Video: Piper Alpha**

Course Evaluation & Course Summary

## ENVIRONMENTAL AWARENESS SYSTEMS

### **COURSE INTRODUCTION:**

Concern for the environment and a growing awareness of the need to manage resources efficiently are driving many businesses to adopt an environmental management system, (EMS), as a mechanism to respond to the pressure and thereby minimise their impact on the environment. Through this focus on improving the efficiency of all their working practices, businesses are also likely to benefit from a reduction in operating costs.

This course is designed to Identify EMS issues and how they can be handled and the contribution that can be made by all Management and Employees.

### **COURSE METHODS & SUPPORT:**

The course involves full interactive presentation and discussion including case study and utilizes excellent images and pictorials for full impact and benefit to the participants.

**COURSE DURATION:** Two Days

### **WHO SHOULD ATTEND:**

All Oil & Gas company employees who are required to understand the Environmental Impacts and the necessary requirements to maintain individual and corporate responsibility towards EMS issues.

### **COURSE OUTLINE:**

#### **BACKGROUND ON MANAGING THE ENVIRONMENT**

- Milestones
- Factors influencing environmental awareness
- Global and regional environmental problems (Climate change, Stratospheric ozone depletion, Major accidents, Waste, Loss of biodiversity, Chemicals, Forest degradation, Marine pollution, etc)
- Responses of industry
- Environmental auditing

- Aims of an environmental management system
- International developments
- The roles of ISO 14001 and other ISO series standards

### **BENEFITS**

- Benefits of an effective EMS (Legal, Financial and Business, Image, Management)

### **DEFINITIONS**

- Important terms (interested parties, environment, objectives, targets, etc.)

### **EMS ELEMENTS**

- Organization culture
- Commitment
- Environmental policy statement
- Organization and responsibilities
- Evaluation and register of effects
- Register of regulations
- Objectives and targets
- Environmental management program
- Management manual and documentation
- Operational control
- Records
- Audits
- Management review
- Environmental reporting

### **CASE STUDY & GROUP DISCUSSIONS**

- **ENVIRONMENTAL LEGISLATION**
- **COURSE OVERALL REVIEW & DISCUSSIONS**
- **COURSE EVALUATION**
- **COURSE SUMMARY**

## Fire Fighting

### Course Background:

Uncontrolled fires cause loss of millions of dollars and despite modern fire fighting equipment the abilities and efficiency of the fire fighters make the difference in how fires are contained and eliminated. Reducing risks of uncontrolled fires and fire prevention is a major consideration and requires full understanding of what fire is, why they start and what they feed on.

This course is designed to teach the theory and practice of fire fighting including the reason fire are caused, the dangers and damages involved and the loss of life, limb and property caused by uncontrolled fires.

It will also cover the fire equipment including the correct use, maintenance and hazards involved.

**Course Duration:** Five Days

### Course Learning Objectives:

**On completion of this course the participants will be able to confirm:**

- How uncontrolled fires are started and the loss of life and limb that occurs.
- The combustion hazards in the workplace and industrial areas caused by flammables and the various types and characteristics
- The type of first hand fire fighting equipment and effective use
- Basic Fire Fighting teams responsibilities - Theory and Practice
- Basic Rescue Techniques and Basic Resuscitation

### Daily Contents:

#### Day One

- The Fire Triangle and Fire Characteristics
- Fire Prevention Methods and Employee Responsibilities
- Deaths and Injuries Reports in Industrial & Domestic Fires
- Types of Fires: Petrochemical, Chemical,
- Oil & Gas and Other Materials
- How fires start and Combustion and Spark Principles
- The Dangers and Hazards of Fire: Speed & Spread
- Smoke: Toxic and Asphyxia
- First Hand Fire Equipment & Appliances: Water, Foam and Chemical
- Types, Colour Codes and Effective Use

### **Day Two**

- Fire Equipment: Testing and Maintenance
- Personal Protection Equipment (PPE), Clothing and Head Gear
- Breathing Apparatus (BA): Use, Testing and Maintenance
- Fire Alarms and Systems
- Fire and Associated Risk Assessment
- Basic Rescue Techniques & Transporting Casualties
- Basic Resuscitation Techniques and Cardiopulmonary Resuscitation (CPR)

### **Day Three**

- Hazards: Burns and Smoke Hazards, Gassing, Smoke Inhalation & Choking
- Shock, Dangers of Shock and Reduction of Shock
- Associated Secondary Fire Hazards: Building collapse etc.
- Actions in a Fire Emergency

### **Day Four**

- Hydrants and Water Supply
- Fire Fighting Crew Teamwork and Responsibilities
- Ladders: Use in Fire Fighting and Rescue Techniques

### **Day Five**

- Practical Fire Fighting & Fire Containment Exercises
- Fire Theory and Practice Test
- Case Studies and Discussions

### **Who Should Attend:**

Dedicated company fire crew supervisors, firemen and fire team personnel or any company employee ie Storeman, Petrochemical Technicians, Laboratory Staff / Oil & Gas personnel or those who may be possibly faced with a fire hazard and be responsible for first hand containment.

**Program Support:**

The program is supported by videos and audio / visual techniques, also instructional manuals designed for specific action systems to assist the user.

The course is taught to British standards of Fire Fighting standards.

**Program Administration:**

If possible and for practical demonstrations, all fire equipment is to be made available at site, (a list of equipment and training requirements will be forwarded).

Certain areas for certain combustible materials will also need to be at hand prior to commencement of training. Please liaise with the training provider.

## Fire Prevention

### Course Background:

The ultimate responsibility is levied at the organization as various protective legislation is specific and all precautions against fire accidents must be implemented and maintained. Safety Managers and safety personnel must execute their responsibility to prevent or inhibit any fire safety in the workplace, this also includes the participation of all employees.

### Course Objectives:

**This four day program will provide the delegates with**

The Modern Philosophy of fire safety in the working environment and the Occupational Health and Safety precautions against hazards that should be taken in working environments.

The course also includes the employee responsibilities and consequences of poor safety attitude. It also covers Human Error Factors and the cause of fire and how to prevent them occurring.

**The course content also includes the current EU standards and legislation in the work place**

### Daily Course Outline:

#### Day One

- **Introduction to Fire Prevention & Safety**
  - Environment
  - Accidents - Accident Triangle
  - Fire Hazards and Causes
  - Fire Prevention
  - Fire Definitions
  - Fire Classifications

#### Day Two

- Fire Equipment
  - Fire extinguishers - new EU Codes
  - Equipment. - Warning Systems
  - Fire Safety Regulations
  - Emergencies
- Equipment Maintenance



- Work Permit Systems
- Effective Fire Communication
- Physical Hazards

### **Day Three**

- Personal Protective Equipment - (in specific environments)
- Signs - new EU regulations
- Fire Safe Working Systems
- Hazards and precautions
- Risk and Hazard
  
- Fire task analysis
- Fire Safety Inspections
- Hazardous Materials Storage and Handling
- Case Studies & Discussions
- Theory Exercise Scenario
  
- Course Summary
  
- Course Evaluation
  
- Course summary

### **Program Support:**

This program is supported by videos to emphasize certain aspects of this program and to highlight critical points.

### **Who Should Attend:**

Supervisors and Staff who are involved with Fire Prevention

## General Food Hygiene

### Course Objectives:

Food hygiene training is essential for anyone working in a food business be it a shop, restaurant, hotel, school catering service, or manufacturing environment. Handling food, which other people will eat, requires the handler to develop a sense of responsibility and awareness of the risks involved with his/her actions.

The course will address the key issues of Food Hygiene namely food-handling practices, food poisoning outbreaks, personal hygiene, the purpose of adhering to a cleaning and disinfection schedule, and pest control.

Attendance on the course will ensure a valuable education in good food hygiene practices, including identification and management of food safety hazards that can then be taken and applied to the workplace.

### Who Should Attend:

This level of training is appropriate for all personnel working in food handling, catering, food manufacture/processing or food retailing but particularly for those in supervisory or management roles or those with a specific interest.

### First Day

- Introduction to Food Hygiene and the Food Industry Developments
- Microbiology of foodstuffs
- Food Poisoning and Food-Borne Disease
- Personal Hygiene

### Second Day

- Food Storage and Temperature Control
- Food Preparation – Cooking and Serving
- Design and Construction of Food Premises and Equipment

### **Third Day**

- Cleaning and Disinfection
- Pest Control
- Case Studies and Exercises
- Group Discussions
- Course Evaluation
- Course Summary

### **Program Support:**

This program is supported by a Food Hygiene Video to emphasize certain aspects of this program and to highlight critical points.

## General Health & Safety

### Course Description:

The course will present Safety & Health, principles as well as Environmental concerns and Fire fighting. The course will describe; accidents - prevention, causes safe working systems; Occupational Health - principles, hazards, PPE; Manual handling; Electrical safety ; Gas Testing - Explosivity, toxicity, oxygen deficiency; Signs and Labels - new standards; Entry into confined spaces - hazards and precautions; Risk Assessment; Accident Incident investigation; Job task analysis; Safety with contractors; Fire - prevention, equipment, techniques.

### Learning Objectives:

Upon completion of this five days course, participants will have a complete understanding of the modern philosophy of safety. They will also understand Occupational Health and Safety precautions that should be taken in work environments. Participants will also have gained knowledge of current standards and European legislation. Gas testing techniques, and fire fighting will also be discussed.

### Day 1

#### **Introduction to Safety, Health, Security, Environment, & Fire Fighting Departments**

- Managing Safety
- Accidents - Accident Triangle
- Accident prevention
- Causes of Accidents
- Accident Prevention Systems
- Safety Regulations
- Emergencies
- Plant Design
- Maintenance
- Work Permit Systems
- Effective Communication

### DAY 2

#### **Managing Occupational Health.**

- Definition.
- Principles.

- Chemical Hazards - body uptake, TLV, TWL etc.
- Physical Hazards.
- Ergonomics, temperature, noise, smoke, dust & fumes
- Psychological Hazards.
- Two videos will be shown on: Hearing protection & Stress

### **DAY 3**

- Special Compliance
- Personal Protective Equipment
- Manual Handling
- Electrical Safety.
- Gas Testing. Explosivity, Toxicity, Oxygen Deficiency
- Hydrogen Sulphide - Pyrophoric Iron.
- Ladders & Scaffolds
- Signs & Labels - new EU regulations
- Machinery Guarding

**Video will be shown on: Electrical Safety**

### **DAY 4**

#### **Entry into Confined Spaces**

- Definition
- Safe working systems
- Gas freeing - Steam, water, use and hazards of inert gas
- Hazards and precautions
- Major Shutdowns
- Risk Assessment - Seveso Directive (EU regulations)
- Risk and Hazard
- The 5 steps - look, decide, evaluate, record, review.
- HAZOP
- Job task analysis
- Environmental Issues
- From Montreal to Kyoto & November 1998, Buenos Aires, Argentina:
- ISO 14000

**Video will be shown on: Global Warming**

### **DAY 5**

#### **Accident Incident Investigation**

#### **Safety Inspections**

**Improving Safety Performance - Job Attitudes / Training & Staff development**



**Contractors & Safety**  
**Safety committees - making them work**  
**Disasters some examples.**

**Video will be shown on: Health and Safety**

**Fire**

- Prevention
- Definitions
- Classifications
- Fire extinguishers - new EU Codes
- Equipment.
- Warning Systems
- Emergency Planning
- Fire fighting Techniques
- Tank Fires
- Plant Fires
- Bulk Quantities of Liquid Gas
- Gas Characteristics
- Facilities for cooling of vessels
- Leakage of gas without ignition - control of leakage
- Leakage of gas with ignition - Action by personnel
- Storage and handling
- Two videos will be shown:
- Playing with fire.
- Jacksonville tank fire (**video discussion**)

**Piper Alpha Video to be Shown**

- Case Studies & Discussions
- Exercise in Scenario

**Who Should Attend:**

This course is for those Individuals new to the Chemical, Plant Operations and Refining industry as a basic course; those who have limited operating experience or who are involved in supporting operations using the course as refresher. Experienced operating personnel and engineering staff should find a great deal of beneficial information, particularly if they have been recently promoted and their job contents, now involves the issues of work permits.

## **General Industrial Health & Safety**

### **Course Description:**

The course will present Safety & Health, principles as well as Environmental concerns and Fire fighting. The course will describe; accidents - prevention, causes safe working systems; Occupational Health - principles, hazards, PPE; Manual handling; Electrical safety; Gas Testing - Explosivity, toxicity, oxygen deficiency; Signs and Labels - new standards; Entry into confined spaces - hazards and precautions; Risk Assessment; Accident Incident investigation; Job task analysis; Safety with contractors; Fire - prevention, equipment, techniques.

### **Learning Objectives:**

Upon completion of this course, participants will have a complete understanding of the modern philosophy of safety. They will also understand Occupational Health and Safety precautions that should be taken in work environments. Participants will also have gained knowledge of current standards and European legislation and fire fighting will also be discussed.

### **Who Should Attend:**

This course is for those Individuals new to most industries including Oil & Gas, Petrochemical, Electrical and Mechanical and experienced personnel, who need to refresh and update on the latest safety requirements demanded by industry. Experienced operating personnel and engineering staff should find a great deal of beneficial information, particularly if they have been recently promoted and their job contents, now involves the issues of work permits.

### **Day 1**

- Introduction to Safety, Health, Security, Environment, & Fire Fighting Departments
- Managing Safety
- Accidents - Accident Triangle
- Accident prevention
- Causes of Accidents
- Accident Prevention Systems
- Safety Regulations
- Emergencies
- Maintenance
- Work Permit Systems
- Effective Communication

### **DAY 2**

- Managing Occupational Health.
- Definition & Principles.
- Chemical Hazards - body uptake, TLV, TWL etc.
- Physical Hazards.
- Ergonomics, temperature, noise, smoke, dust & fumes
- Psychological Hazards.
- Personal Protective Equipment
- Manual Handling
- Electrical Safety.
- Gas Testing. Explosivity, Toxicity, Oxygen Deficiency
- Hydrogen Sulphide - Pyrophoric Iron.
- Ladders & Scaffolds
- Signs & Labels - new EU regulations
- Machinery Guarding
- Entry into Confined Spaces.
- Safe working systems
- Gas freeing - Steam, water, use and hazards of inert gas
- Hazards and precautions

### **DAY 3**

- Risk Assessment, Risk and Hazard
- The 5 steps - look, decide, evaluate, record, review.
- HAZOP
- Job task analysis
- Environmental Issues
- ISO 14000 ( In brief)
- Accident Incident Investigation
- Safety Inspections
- Improving Safety Performance - Job Attitudes / Training & Staff development
- Contractors & Safety
- Safety committees - making them work
- Disasters some examples (VIDEO)
- Fire, Prevention, Definitions, Classifications
- Fire extinguishers - new EU Codes
- Equipment.
- Warning Systems
- Discussions



## **Safety Passport**

### **Learning Objectives:**

Upon completion of this course, participants will have a complete understanding of the modern philosophy of Safety & Health and how this is applied within their own work environments.

### **Course Description:**

The course will present Safety, Health & Environmental principles and concerns. There will be emphasis on the modern proactive approach with the use of risk assessments. The course will describe; Accidents – accident prevention, accident causes; safe working systems; Occupational Health - principles, hazards Signs and Labels; Risk Assessment; Accident Incident investigation; Safety with contractors; Fire - prevention, fire fighting techniques; Emergency Plans.

### **Documentation**

There will be a number of questionnaires presented throughout the course in order to verify that the employees have understood the training.

### **Who should attend?**

This course is for all employees from all types of Industry to provide them with basic Health and Safety awareness training.

**Course Duration:** Five days

### **Program Support:**

This program is supported with videos, case studies and interactive discussions to emphasize and reinforce learning in this very important subject.

### **Course Outline:**

#### **Introduction to Safety & Health**

##### **SAFETY**

- Accidents - Accident Triangles
- Causes of Accidents
- Accident Prevention
- Cost Benefit Analysis
- Accident Incident Investigation
- Risk Assessment
- Work Permit Systems
- Effective Communication

The control of hazardous energy (lockout / tagout)

### **OCCUPATIONAL HEALTH**

Chemical Hazards - body uptake, TLV etc.

Hazard Communication

Physical Hazards – Noise, Temperature, Manual Handling, etc.

Ergonomics – Musculoskeletal disorders, Video Display Units, etc

Blood Borne Pathogens

Psychological Hazards

### **SIGNS & LABELS**

Safety colour code for marking physical hazards (OSHA 1910.144)

EU Signs & colour codes

### **ACCIDENT INCIDENT INVESTIGATION**

#### **INSPECTIONS**

#### **CONTRACTORS & SAFETY**

#### **Environmental Issues**

#### **FIRE**

Prevention

Fire fighting Techniques

#### **EMERGENCIES**

Types of Emergencies

The Domino Effect

Familiarity with the Plans

Practicing the Emergency Plans

Media

Evacuation

#### **VIDEOS:**

- Managing Pressure at Work (20 minutes)
- A Health Back (by the Saunders Group – 22 minutes)
- Hearing Protection (by Howard Light – 8 minutes)
- Best Signs Story (by the HSE – 10 minutes)
- Emergency Planning (by National Safety Compliance Inc, OSHA Program – 13 minutes)

#### **Questionnaires:**

Several Questionnaires will be presented in order to evaluate the response and the course comprehension.

#### **Exercises:**

## Course Evaluation and Summary

### Health & Safety Management Systems

#### Course Description:

Safety and Health Management are becoming an evermore-important aspect in the control and reduction of accidents, incidents, illness and expensive litigation claims. Within contracts and contracting in the Construction and Oil/Petrochemical industries covering the essential purpose of these regulations, their scopes and definitions, areas of specific responsibility of various parties, competencies expected, safety awareness and safe working practices, occupational safety plans, training procedures, supply of information and document control, keeping of records etc.

Occupational safety linked to the European six pack covering such areas as the management of health and safety, work equipment, personal protective equipment, manual handling are particularly applicable to the Construction and Oil/Petrochemical industries, as is the control of general and personal hygiene and health surveillance programming.

#### Learning Objectives:

This is a practical briefing designed to make participants aware of the requirements of the regulations and the steps they need to take in order to comply with them. Undertaking a number of specific assessment criteria and health and safety risk appraisal checklist within the specifics of contracts and contracting in various industries. This seminar will study situations from the viewpoint of the employer and the safety engineer focusing on key elements, notably:

- Introduction and learning objectives
- Risk assessment and contracting requirements
- Purpose of regulations; scope and definition
- Responsibilities of various parties
- Assessment of competence and resources

#### **Participants will learn and understand:**

- The principles of good health and safety practices
- Responsibilities and areas of perceived competence
- Writing of good safety work practices

- Practical risk assessment in the oil petrochemical industry
- Specific dangerous practices and hazards control
- Relevant health and hygiene standards

Group workshop activity specific to their safety requirements, with proper document control and record keeping

### **Who Should Attend:**

Potential Safety Managers , Supervisors and Safety Representatives. Anyone who works in the Construction, Oil and Petrochemical industries who employs contractors or sub-contractors, and who needs as part of their legal risk assessment requirements, to effectively assess the specific dangers and risks.

### **Course Contents:**

- **Introduction, learning objectives, risk assessment and contracting assessments**
- Purpose of regulations, scope and definitions, and the effective use of these
- Responsibilities of various parties, assessments of competence and resources
- Health and Safety files, what they must contain and how to maintain them
- Health and Safety plan, how to draw up and use effectively with specific action points
- Specific safety documents, training procedures and information on use of same
- Identifying specific hazards and dangers in the Oil/Petrochemical industries and how to assess risk and how best to deal with it
- Occupational and Health hazards, which can be action planned for health surveillance programming
- Health and hygienic standards, writing up and using safe practice/procedures to best effect
- *On site Inspections*
- Practical/Actual
- Changes
- Improvements/Modifications
- Reporting on audits
- What action should be taken, how and by whom?
- Occupational Health including Ergonomics
- Accident/Incident Investigations, Report forms etc.
- Fire
- Spillage of Chemicals etc.
- Evacuation
- Disasters and preliminary planning
- Safety case studies and discussion
- Course Evaluation and Summary

## Health Safety and Environmental concerns

### Course Objectives:

Upon completion of this course, participants will have a complete understanding of the modern philosophy of safety and of Process Safety Management. The course goes beyond Level 1 in including HAZOP and Process Safety Management, as well as Environmental concerns.

### Course Overview:

The course will present Safety & Health, principles as well as Environmental concerns and Fire fighting. The course will describe; Accidents – accident prevention, accident causes safe working systems; Occupational Health - principles, hazards. Gas Testing - Explosivity, toxicity, oxygen deficiency; Signs and Labels - new standards; Entry into confined spaces - hazards and precautions; Risk Assessment; Accident Incident investigation; Safety with contractors; Fire - prevention, fire fighting techniques; Process Safety Management; HAZOP; Emergency Plans; Introduction to ISO 14000 and EMAS.

### Who should attend

This course is for those experienced Individuals who are involved in the operation and management of the plant as well as supporting operations.

Course Duration: Five days

### Course Contents Outline:

#### **MANAGING SAFETY**

- Accidents - Accident Triangles
- Causes of Accidents
- Accident Prevention
- Cost Benefit Analysis
- Risk Assessment
- Work Permit Systems
- Effective Communication

*One video: **Health & Safety***

#### **MANAGING OCCUPATIONAL HEALTH**

- Chemical Hazards - body uptake, TLV etc.
- Physical Hazards
- Ergonomics,
- Blood Borne Pathogens
- Psychological Hazards

**Two videos:** Healthy Back, Stress

## **ENTRY INTO CONFINED SPACES**

Definition

Gas Testing. Explosivity, Toxicity, Oxygen Deficiency

Hydrogen Sulphide - Pyrophoric Iron

Safe working systems

Gas freeing - Steam, water, use and hazards of inert gas

Hazards and precautions

## **ACCIDENT INCIDENT INVESTIGATION**

## **SAFETY INSPECTIONS**

## **CONTRACTORS & SAFETY**

## **SAFETY COMMITTEES - MAKING THEM WORK**

## **Environmental Issues**

From Montreal to Kyoto

ISO 14000

EMAS

## **FIRE**

Prevention

Classifications

Fire extinguishers - new EU Codes

Fire fighting Techniques

Tank Fires

Bulk Quantities of Liquid Gas

Leakage of gas without ignition - control of leakage

Leakage of gas with ignition - Action by personnel

## *PROCESS SAFETY*

Process Safety Management (OSHA Standards)

Seveso II (European Standards)

HAZOP

Emergency Plans

**One video:** Piper Alpha

## House Keeping at Your Plant

### Course Objectives:

Upon completion of this course, participants will have a complete understanding of the modern philosophy Good House Keeping and Safety within Plant Operations according to requirements. They will also understand Occupational Health and Safety precautions for work environments. Gas testing techniques, and fire fighting will also be discussed.

### Course Overview:

The course will present Safety & Health, principles and Fire fighting. The course will describe; accidents, accident prevention, accident causes, safe working systems; Occupational Health - principles, hazards. PPE, Manual handling, Electrical Safety; Gas Testing - Explosivity, toxicity, oxygen deficiency; Signs and Labels - new standards; Entry into confined spaces - hazards and precautions; Risk Assessment; Accident Incident investigation; Safety with contractors; Fire - prevention, fire fighting techniques.

### Course Duration: *Five Days*

### Who should attend

This course is designed for Operators new to the Plant and Refining industry as a basic course also for those who have limited Plant and Refinery-operating experience. It may also serve as a refresher course for Plant and Refinery Supervisors, Operators or for those who are involved in supporting operations.

### Course Contents Outline:

#### **Managing Safety**

- Accidents - Accident Triangle
- Accident prevention
- Causes of Accidents
- Accident Prevention Systems
- Risk Assessment
- Work Permit Systems
- Effective Communication

*One video: **Health & Safety***

#### **Managing Occupational Health**

- Definition
- Principles
- Chemical Hazards - body uptake, TLV, TWL etc.
- Physical Hazards

Ergonomics,  
Blood Borne Pathogens  
Psychological Hazards

**Two videos:**

1. Hearing protection
2. Healthy Back

**Special Compliance**

Personal Protective Equipment  
Manual Handling  
Electrical Safety.  
Gas Testing. Explosivity, Toxicity, Oxygen Deficiency  
Hydrogen Sulphide - Pyrophoric Iron  
Ladders & Scaffolds  
Signs & Labels - new EU regulations  
Machinery Guarding  
Compressed Air

**Two Videos:**

1. Electrical Safety
2. Best Signs Story

**Entry into Confined Spaces**

Definition  
Safe working systems  
Gas freeing - Steam, water, use and hazards of inert gas  
Hazards and precautions

**Accident Incident Investigation**

**Safety Inspections**

**Contractors & Safety**

**Safety committees - making them work**

**Fire**

Prevention  
Classifications  
Fire extinguishers - new EU Codes  
Emergency Planning  
Fire fighting Techniques  
Tank Fires  
Bulk Quantities of Liquid Gas  
Leakage of gas without ignition - control of leakage  
Leakage of gas with ignition - Action by personnel

**Two videos:**

1. Playing with fire.
2. Tank fire

## **INCIDENT, ACCIDENT & MACHINERY FAILURE INVESTIGATION**

### **Seminar Background:**

There is never a single cause for an accident or an incident and is usually a series of events. This seminar is designed to give the participants an insight in the complexity of Accidents and Incidents and the methods for prevention and reducing both Accidents and the resulting costs. This requires a detailed investigation into why circumstances have caused machinery to break down and even to have caused a physical injury.

### **Seminar Objectives:**

This program will describe accidents and incidents and their Root Causes. An insight into Risk Assessment is included as the basis of prevention. Methods of fact finding the processes and procedures and interviewing as well as the final report of conclusions will also be discussed.

**Course Duration:** Three Days

### **Who Should Attend:**

Safety Managers & Officers, Engineers and Technical Supervisors and those who are involved or concerned with Implementation of policies, control and monitoring, failure analysis within their organization.

### **Program Support:**

This program is supported by H & S videos to emphasize certain aspects of this program and to highlight critical points as well as case studies of accidents in Industry. It also uses interactive discussions, case studies and exercises to involve participants and apply maximum benefits.

### **Course Outline:**

- Introduction to Accidents
  - Accident Triangles
  - Causes of Accidents
  - Unsafe Acts – Unsafe conditions
  - Accident Prevention

- Preventative opportunity
- Risk Assessment
  
- Why Investigate Accidents & Incidents
  - Objective of Investigations
  - Barriers to Investigations
  
- Identifying the reasons for failure of the production equipment:
  - Equipments
  - Devices
  - Machine,
  - Human Errors
  
- The investigation team
  - Terms of Reference
  - Single person
  - Team
  - Team Composition
  - Forming Objectives and Report Deadlines
- Making the necessary analysis and identify the root cause of the incident
  - Use the different technique of root cause analysis
  - Fish Bone Analysis Techniques
  - 5 Questions Analysis and Conclusions
  - Work in a group (team-work) in order to achieve the above-mentioned goals
  - Report the conclusion
  
- Investigative Procedures
  - Equipment
  - Records – Training, Maintenance, Operating Procedures, Permits
  - Computer Data
  - Pictures
  - Maps, drawings
  
- Conducting Interviews
  - What questions
  - Where to interview
  - Recording the interview
  - Re-enactment
  
- The Report
  - The Background
  - The Accident or Incident Documentation

- The Causes
  - Corrective Action
  - Review of Findings
  - Compiling and Presenting Findings
- 
- Conclusion and Recommendations of Suitable Prevention of the Incident Being Repeated
  - Case Studies
  - Discussions & Videos (Piper Alpha)
  - Exercises & Group participation
  - Course Evaluation & Summary

## Certified for “In Service Inspections”

### ***In-Service inspection***

Lifting equipment can be subjected to operational and environmental conditions, which may affect its safe working characteristics. Legislation therefore requires that lifting equipment is properly maintained and safe to operate at all times.

To ensure that this is the case, it to be inspected at suitable intervals between the thorough examinations.

Regular ‘in-service’ inspections should be instituted, at appropriate intervals, to satisfy this legal requirement. The period between the ‘in-service’ inspections will be determined by the utilization, environment and similar factors based on the history of the equipment. Inspections are particularly important before issue for use.

The ‘in-service’ inspection should be carried out by the Responsible Person. For organizations handling a large varied amount of equipment, it may be more economical to invest in a planned control system using a series of locked bonded stores. Colour coding systems, etc. Certified inspectors can provide information on such systems.

Users are reminded notwithstanding any ‘in-service’ inspections carried out, they are required by law to have all lifting equipment thoroughly examined by a Competent Person. It is also recommended that the procedures be instituted to ensure that manufacturer’s recommendations with regard to regular maintenance are carried out.

When repairs to load bearing parts of the equipment are carried out using certified spare parts, the equipment should subsequently be thoroughly examined by a Competent Person to ensure that the work has been performed correctly. In addition, the records for the equipment should be amended taking account of the replacement parts fitted.

When repairs are carried out with uncertified parts, the equipment should be verified, eg, proof load tested, and thoroughly examined by a Competent Person.

On completion of the thorough examination or test and thorough examination by a Competent Person, a report of thorough examination should be issued. This should be kept with the records for the equipment.

### **Appointed Person BS7121**

The appointed person is an experienced, trained, competent person selected and certified, to assist the employing organizations management to help them fulfill their legal obligations.

He is responsible for providing the planning, selection and supervision for the whole lifting operation and he may, where appropriate, delegate his duties to another person competent for the task but he remains responsible for any job where he has been appointed to be in control.

He is aware of the responsibilities as defined in part 1 Section 2 of the HASAWA 1974 Duties of Employers, 'The provision and maintenance of plant and systems of work that are, so far as is reasonably practicable, safe and without risks to health'.

This includes a check list that can cover up to 10 pages, depending on location and type of lift and conditions.

## Managing Employee Safety & Health Refineries (MESH)

### Course Description:

The course will present Safety & Health, principles as well as Environmental concerns and Fire fighting. The course will describe; accidents - prevention, causes safe working systems; Occupational Health - principles, hazards. PPE, Manual handling, Electrical Safety; Gas Testing - Explosivity, toxicity, oxygen deficiency; Signs and Labels - new standards; Entry into confined spaces - hazards and precautions; Risk Assessment; Accident Incident investigation; Safety with contractors; Fire - prevention, equipment, techniques.

### Learning Objectives:

Upon completion of this course, participants will have a complete understanding of the modern philosophy of safety. They will also understand Occupational Health and Safety precautions for work environments. Gas testing techniques, and fire fighting will also be discussed. There will be interactive discussion based around case studies and videos to highlight course details.

### Course Duration: *Five days*

### Who Should Attend:

This course is for those Individuals new to the refining industry as a basic course; those who have limited refinery-operating experience or who are involved in supporting operations using the course as refresher.

### Program Support:

This program is supported with videos, case studies and interactive discussions to emphasize and reinforce learning in this very important subject.

### Course Outline:

#### Day 1

Introduction to Safety, Health, Security, Environment, & Fire Fighting Departments

#### **Managing Safety**

- Accidents - Accident Triangle
- Accident prevention
  - Causes of Accidents
  - Accident Prevention Systems

- Risk Assessment
- Safety Regulations
- Emergencies
- Plant Design
- Maintenance
- Work Permit Systems
- Effective Communication

One video: **Health & Safety**

## **DAY 2**

### **Managing Occupational Health**

- Definition
- Principles
- Chemical Hazards - body uptake, TLV, TWL etc.
- Physical Hazards
- Blood Born Pathogens
- Ergonomics, temperature, noise, smoke, dust & fumes
- Psychological Hazards

#### **Two videos:**

3. Hearing protection
4. Healthy Back

## **DAY 3**

### **Special Compliance**

- Personal Protective Equipment
- Manual Handling
- Electrical Safety.
- Gas Testing. Explosivity, Toxicity, Oxygen Deficiency
- Hydrogen Sulphide - Pyrophoric Iron
- Ladders & Scaffolds
- Signs & Labels - new EU regulations
- Machinery Guarding
- Compressed Air

**Two Videos:** Electrical Safety, Best Signs Story

## **DAY 4**

### **Entry into Confined Spaces**

- Definition
- Safe working systems
- Gas freeing - Steam, water, use and hazards of inert gas
- Hazards and precautions
- Major Shutdowns
- Risk Assessment – Seveso Directive (EU Regulations)
- Risk and Hazard
- The Five Steps – look ,decide, evaluate, record, review

- HAZOP & Job Task Analysis
- Environmental Issues
- From Montreal to Kyoto & November 1998, Buenos Aires, Argentina
- ISO 1400
  - Accident Incident Investigation
  - Safety Inspections
  - Contractors & Safety
  - Safety committees - making them work
  - Environmental Issues
  - **One Video on: Global Change**

### DAY 5

- Fire
- Prevention
- Definitions
- Classifications
- Fire extinguishers - new EU Codes
- Equipment.
- Warning Systems
- Emergency Planning
- Fire fighting Techniques
- Tank Fires
- Plant Fires
- Bulk Quantities of Liquid Gas
- Gas Characteristics
- Facilities for cooling of vessels
- Leakage of gas without ignition - control of leakage
- Leakage of gas with ignition - Action by personnel
- Storage and handling

#### **Two videos:**

3. Playing with fire.
4. Tank fire

*Case Studies and Discussion*

#### **Course Evaluation and Summary**

## Managing Employee Health & Safety (MESH)

### Course Description:

The course will present Safety & Health, principles and basic Fire fighting. The course will describe; accidents - prevention, causes safe working systems; Occupational Health - principles, hazards, PPE; Manual handling; Electrical safety; Gas Testing - Explosivity, toxicity, oxygen deficiency; Signs and Labels - new standards; Entry into confined spaces - hazards and precautions; Risk Assessment; Accident Incident investigation; Job task analysis; Safety with contractors; Fire - prevention, equipment, techniques.

### Learning Objectives:

Upon completion of this course, participants will have a complete understanding of the modern philosophy of safety. They will also understand Occupational Health and Safety precautions that should be taken in work environments. Participants will also have gained knowledge of current standards and European legislation. Gas testing techniques, and fire fighting will also be discussed.

### Course Duration: Five Days

- Introduction to Safety, Health, Security, Environment, & Fire Fighting Departments and Managing Safety
- Accidents - Accident Triangle - Accident prevention
- Causes of Accidents
- Accident Prevention Systems
- Safety Regulations
- Emergencies
- Plant Design
- Maintenance
- Work Permit Systems
- Effective Communication
- Managing Occupational Health.
- Definition.
- Principles.
- Chemical Hazards - body uptake, TLV, TWL etc.
- Physical Hazards.
- Ergonomics, temperature, noise, smoke, dust & fumes
- Psychological Hazards.
- Special Compliance
- Personal Protective Equipment
- Manual Handling
- Electrical Safety.

- Gas Testing. Explosivity, Toxicity, Oxygen Deficiency
- Hydrogen Sulphide - Pyrophoric Iron.
- Ladders & Scaffolds
- Signs & Labels - new EU regulations
- Machinery Guarding
- Entry into Confined Spaces.
- Definition
- Safe working systems
- Gas freeing - Steam, water, use and hazards of inert gas
- Hazards and precautions
- Major Shutdowns
- Risk Assessment - Seveso Directive (EU regulations)
- Risk and Hazard
- The 5 steps - look, decide, evaluate, record and review.
- HAZOP
- Job task analysis
- ISO 14000
- Accident Incident Investigation
- Safety Inspections
- Improving Safety Performance - Job Attitudes / Training & Staff development - Contractors & Safety
- Safety committees - making them work
- Fire - Prevention - Definitions - Classifications
- Fire extinguishers - new EU Codes
- Equipment. - Warning Systems
- Emergency Planning - Fire fighting Techniques
- Tank Fires & Plant Fires
- Bulk Quantities of Liquid Gas - Gas Characteristics
- Leakage of gas without ignition - control of leakage
- Leakage of gas with ignition - Action by personnel
- Storage and handling
- Case Studies & Discussions
- Exercise in Scenario

**Program Support:**

This program is supported by videos to emphasize certain aspects of this program and to highlight critical points of focus.

**Who Should Attend:**

This course is for those Individuals new to the refining industry as a basic course; those who have limited refinery-operating experience or who are involved in supporting operations using the course as refresher. Experienced operating personnel and engineering staff should find a great deal of beneficial information, particularly if they have been recently promoted and their job contents, now involves the issues of work permits.

## Occupational Health & Safety (OSHA Standards)

### Course Background:

The hazards in any organization vary in degree but will always exist in the working environment. The responsibility falls between the HSE manager / officer and the employees. Mistakes leading to varying levels of catastrophes mean an inevitable loss of life, limb and organizational value.

The ultimate responsibility is levied at the organization as various protective legislation, is specific and all precautions against accidents must be implemented and maintained. Safety Managers and safety personnel must execute their responsibility to prevent or inhibit any poor working safety practices in the workplace, this also includes the participation of all employees.

### Course Objectives:

This three - day program will introduce the OSHA policies and approach to Health and Safety requirements and how OSHA can help prevent accidents from occurring.

The Modern Philosophy of safety in the working environment and the Occupational Health and Safety precautions against hazards that should be taken in working environments. The course also includes the employee responsibilities and consequences of poor safety attitude. It also covers Human Error Factors and the cause of loss of life, limb and the costs involved

**The course content also includes the current EU standards and legislation in the work place**

### Daily Course Outline:

#### Day One

- **Introduction to Managing Employee Safety and Health**
- Environment
- Fire
- Managing Safety
- Accidents - Accident Triangle - Accident prevention
- Causes of Accidents
- Accident Prevention Systems
- Safety Regulations
- Emergencies

## **Day Two**

- **Environmental Design (Overview)**
- **Maintenance**
- **Work Permit Systems**
- **Effective Safety Communication**
- **Managing Occupational Health.**
  - Definition
  - Principles
- **Physical Hazards**
- **Ergonomics**

## **Day Three**

- **Psychological Hazards**
- **Personal Protective Equipment - (in specific environments)**
- **Manual Handling**
  - Lifting
  - Moving
- **Electrical Safety**
- **Signs & Labels - new EU regulations**
- **Safe Working Systems**
- **Hazards and precautions**
- **Risk and Hazard**
- **The 5 steps - look, decide, evaluate, record and review**
- **HAZOP**

## **Day Four**

- **Job task analysis**
- **Safety Inspections**
- **Improving Safety Performance**
  - Job Attitudes
  - Training
  - Staff development
  - Contractors & Safety
  - Safety committees
- Fire
  - Prevention
  - Definitions
  - Classifications
  - Fire extinguishers - new EU Codes
  - Equipment. - Warning Systems
- **Hazardous Materials Storage and Handling**
- **Case Studies & Discussions**
- **Theory Exercise Scenario (Practical Exercise can be organised at site)**
- **Course Summary and Analysis**

## **Program Support:**

This program is supported by health and safety videos to emphasize certain aspects of this program and to highlight critical points.

## **Who Should Attend:**

Managers, Supervisors and Staff who wish to influence their employee's attitudes towards safety and Safety Officers

## Occupational Health Awareness

### Learning Objectives:

The seminar will study the Occupational Health aspects of Safety. Occupational Health cannot be viewed entirely separately from Safety. Whilst Safety encompasses a wider range of possible harm and as such is defined as “Any event that results in harm to people, property and or loss.” Occupational Health is a focussed view of personal well being in the workplace. Occupational health has developed into a multidisciplinary and approach that considers individual's physical, mental and social well being, and personal development.

### Course Description:

The course will present Occupational Health & Safety principles and concerns. There will be emphasis on the modern proactive approach with the use of risk assessments. The course will describe; Accidents – accident prevention, accident causes safe working systems; Occupational Health - principles, and hazards from Chemical to Psychological hazards; Risk Assessment; Accident Incident investigation. Gas Testing - Explosivity, toxicity, oxygen deficiency; Entry into confined spaces - hazards and precautions;

### Who should attend?

This course is for those Individuals who are involved in the operation and management of the plant as well as supporting operations.

Course Duration: Three Days

### Program Support:

This program is supported with videos, case studies and interactive discussions to emphasize and reinforce learning in this very important subject.

### Course Outline:

Introduction to Occupational Health & Safety

#### **MANAGING SAFETY**

- Accidents - Accident Triangles
- Causes of Accidents
- Accident Prevention

- Cost Benefit Analysis
- Reporting Accident, Incidents & Illnesses
- Record keeping
- Accident / Incident Investigation
- Risk Assessment
- Work Permit Systems
- Effective Communication

#### **MANAGING OCCUPATIONAL HEALTH**

- Chemical Hazards - body uptake, TLV etc.
  - o Hazard Communication, MSDS
- Physical Hazards
  - o Ergonomics, Noise, Vibration, Temperature, Illumination, Manual Handling, Work-related musculoskeletal disorders & Asbestos.
- Blood Borne Pathogens
- Psychological Hazards
- Visual display Units
- Smoking

#### **RISK ASSESSMENT EXERCISE & DISCUSSION**

#### **ENTRY INTO CONFINED SPACES**

- Definition
- Gas Testing. Explosivity, Toxicity, Oxygen Deficiency
- Hydrogen Sulphide - Pyrophoric Iron
- Safe working systems
- Gas freeing - Steam, water, use and hazards of inert gas
- Hazards and precautions

#### **VIDEOS:**

- A Healthy Back – The Saunders Group Inc USA
- Blood borne Pathogens – National Safety Compliance (OSHA Compliance)
- How to prevent Slips Trips and Falls – National Safety Compliance (OSHA Compliance)
- MSDS & Hazard Communication – National Safety Compliance (OSHA Compliance)
- Fatal Decision Confined Space Entry– CLF Vision Company

#### **Questionnaires:**

Several Questionnaires will be presented in order to evaluate the response and the course comprehension.

#### **Exercises:**



Risk Assessment Group Exercise & discussion  
 Course Evaluation & Course Summary  
**OHS - OHSAS 18001 & ISO 14001**

**Course Overview:**

The course will present the OHSAS 18001 Occupational Safety & Health, guidelines as applicable particularly to the Oil and Gas industries, both on and offshore, including Client / Contractor responsibilities.

The course will embody the core principles of OHSAS 18001 as they relate both to the recipients own OH&S Management system and to the auspices of integration with Quality and Environmental objectives (in accordance with ISO 9000 1994/2000 and ISO 14001 1996).

**Course Objectives:**

Upon completion of this course, participants will have awareness understanding of the OHS - OHSAS 18001 & ISO 14001 guidelines.

**Who should attend**

This course is for all employees involved in the company implementation and orientation into OHS - OHSAS 18001 & ISO 14001 guidelines. The course will also benefit all company operations and organisation personnel who are required to be aware of the relevant implications involved.

**Course Duration:** One Day Training Program

**Course Contents Outline:**

<u>Topics Allocated</u>	<u>Time</u>
▪ FAMILIARIZATION WITH OHSAS 18001 & ISO 14001	½ HOUR
▪ FAMILIARIZATION WITH LEGISLATIVE REQUIREMENTS	1 ½
▪ FAMILIARIZATION OF IMS – QHSE OBJECTIVES	½
▪ PRECAUTIONS FOR IDENTIFIED SAFETY RISK	1 ½ HOUR
▪ PRECAUTIONS FOR IDENTIFIED SIGNIFICANT ENVIRONMENTAL ASPECTS	1 HOUR
▪ PRECAUTIONS FOR IDENTIFIED JOB RELATED HEALTH RISKS	1 ½ HOUR
▪ ENVIRONMENTAL AWARENESS – GLOBAL AND LOCAL SOLUTIONS	1 ½
▪ CASE STUDY	
▪ GROUP DISCUSSIONS	
▪ COURSE EVALUATION	
▪ COURSE SUMMARY	

**Program Support:**

This program is supported by H & S videos to emphasize certain aspects of this program and to highlight critical points. It uses interactive media and group discussions to fully involve attendees and to fully utilize the subject contents.

**OHS - OHSAS 18001 & ISO 14001**

**Course Overview:**

The course will present the **OHSAS 18001** Occupational Safety & Health, guidelines as applicable particularly to the Oil and Gas industries, both on and offshore, including Client / Contractor responsibilities.

The course will embody the core principles of **OHSAS 18001** as they relate both to the recipients own **OH & S** Management system and to the auspices of integration with Quality and Environmental objectives (in accordance with **ISO 9000 1994/2000** and **ISO 14001 1996**).

**Course Objectives:**

Upon completion of this course, participants will have an awareness and understanding of the **OHS - OHSAS 18001 & ISO 14001 guidelines**.

**Who should attend**

This course is for all employees involved in the company implementation and orientation into **OHS - OHSAS 18001 & ISO 14001 guidelines**. The course will also benefit all company operations and organisation personnel who are required to be aware of the relevant implications involved.

**Course Duration: One Day Training Program**

**Course Contents Outline:**

<b><u>Topics</u></b> <b><u>Allocated</u></b>	<b><u>Time</u></b>
▪ Introduction to QHSE Responsibilities and Accountability	½ hour
▪ ISO 9000: 2000 Overview	½ hour
▪ ISO 14001 Overview	½ hour
▪ OHSAS 18001 Overview	½ hour
▪ Integration & Successful factors and IMS Principles	1 ½ hour
▪ Managing hse risks	3 hours
▪ Environmental awareness – global and local solutions	1 ½ hours
▪ Case study & VIDEO (if time allows)	
▪ Group discussions	
▪ Course Evaluation	
▪ Course Summary	

**Total Hours: 8 hours**

**Program Support:**

This program is supported by video to emphasize certain aspects of this program and to highlight critical points. It uses interactive media and group discussions to fully involve attendees and to fully utilize the subject contents.

The course will also give a **Quiz** to re-enforce learning abilities and give feedback.

## Oil Spillage Emergency for Operations

### Course Introduction:

Oil Companies recognize the need to have in place an effective and tested crisis management capability. Oil spill response planning is one facet of that activity. The handling of oil materials is a necessity in our every day life. The possibility of accidents involving oil must be minimized and many measures are being taken in this direction. One of these measures however is preparedness for immediate and appropriate response in case an incident does take place. The course is an introduction into the various measures and actions for which a responsible organization must prepare itself.

### Course Objectives:

The Oil Spillage Emergency for Operations is a 5-day programme designed to teach participants emergency operations for managing major oil spill responses. The course focuses on management aspects of spill response activities and includes training in spill containment and recovery.

**The course is a hands-on programme** in which the participants learn to identify potential spill sources, to properly use response equipment and to determine the appropriate cleanup techniques for the various types of oil that may be spilled. This course provides detailed instruction in oil spill prevention and response techniques. The first phase is classroom instruction and includes the following major topics:

- Prevention of Spills
- Oil movement on Water
- Use of Containment Booms
- Mechanical Recovery
- Use of Dispersants
- Oil Spills on Land
- Temporary Storage and Disposal
- Boat Operation
- Training and Drills

The second phase provides field application. First, surveys are conducted, both within the facility and along the waterfront, to emphasize ways to prevent spills from occurring and to identify cleanup equipment needs. The course then shifts emphasis to spill response and provides one and one half days of hands-on training in the deployment of containment booms, the operators skimmers and the application of dispersants.



Participants learn about the types of cleanup equipment, deployment techniques and the planning required for rapid response. Both safety and handling are also covered.

In particular, this course is designed to give the participants:

- Full awareness of all the implications of handling oil
- The organizational requirements for Oil Spill Response (prevention and control)
- The resource requirements for handling oil spill incidents
- Elements of human behaviour under crisis situations

### **Who Should Attend:**

Managers and technicians from all departments handling oil, chiefs and personnel of emergency response teams, risk minimization managers, fire department chiefs and staff.

### **Daily Course Contents:**

#### **Day One**

- Introduction, Definitions
- Oil Spill Issues
- Prevention – Causes of Spills
- Workshop #1 – Spill Causes/Prevention Examples & Actions
- Contingency Planning
- Oil Spill Response Equipment – Discussion and Demonstrations (At the Warehouse)
- Boat Operations Training (At the Wharf)

#### **Day Two**

- Fate and Effects of Oil Spills
- Workshop #2 – Environmental Considerations for Oil Spill Response Strategies
- Containment and Control – Operational Considerations
- Disposal and Temporary Storage
- Field Exercise #1 – Wharf Spill Scenario

### **Day Three**

- Field Exercise #1 Review
- Communications for Oil Spills
- Workshop #3 – The Communications Plan
- Industrial Hygiene and Safety
- Workshop #4 – Oil in the shore in front of the Oman Refinery
- Field Exercise #2 – Beach Scenario

### **Day Four**

- Field Exercise #2 Review
- Land Spills
- Public Affairs Issues
- Workshop #5 - The Initial Press Release
- Oman Refinery Response Management Team
- Field Exercise 33 – Practical Exercise (Team Response to an unannounced scenario)

### **Day Five**

- Field Exercise #3 Review - Lessons Learned
- Alternative Technologies
- Oil Spill Response Organization & Capabilities
- Case Studies (Exxon Valdez, etc)
- Course Review and Open Discussion
- Closing Remarks and Presentation of Diplomas

### **Video films**

#### **Part One-INITIAL RESPONSE (25 min.)**

It provides training to personnel who are called upon to control and clean up oil spills. Topics covered in “Initial Response” include:

- How spills occur
- Sizing up the situation
- Size control
- Responder safety
- Incident management
- Different types of oil
- Hazards during different phases of the spill
- Factors that control how a spill behaves
- Agencies to notify about a spill

#### **Part Two-COUNTERMEASURES ON LAND (28 min.)**

It provides training to personnel who are called upon to control and clean up oil spills. Control activities discussed in “Countermeasures on Land” include:

- Low and high pressure washing
- Sand blasting
- Soil washing
- Mechanical removal
- Sorbents
- Steam cleaning
- Physical removal Vacuum pumping
- Bioremediation
- Other topics covered include spill behavior, safety precautions for responders, preparing for an approaching spill, and the special problems of shoreline clean-up.

### **Part Three-COUNTERMEASURES ON WATER (28 min.)**

It provides training to personnel who are called upon to control and clean up oil spills. Control activities discussed in “Countermeasures on water” include:

- Booms and barriers
- Skimming
- Dispersants
- In situ burning
- Herding
- Sorbents
- Chemical treatment
- Other topics include how weather, wind, sea conditions and currents affect water spills, tracking spills in order to predict ecological impact, safety precautions for responders, and dealing with contaminated wildlife.

### **Part Four-WASTE MANAGEMENT (22 min.)**

It provides training to personnel who are called upon to control and clean up oil spills. “Waste Management” discusses the very important issues of handling recovered oil and debris resulting from the clean-up effort and outlines waste management priorities:

- Eliminating the waste
- Reducing the waste
- Recycling the waste
- Treating the waste
- Disposing the waste
- Other topics studied include standards waste oil must meet for recycling, temporary storage options for bulk oil, oil water separation. Use of vacuum trucks, extracting emulsions, separating waste streams, and disposal and reclamation.

CP/  
Oil Spillage Emergency for Operations-5days

## FIRST AID COMPETENCY COURSE

### COURSE INTRODUCTION:

At any time we may be called upon to help and administrate First Aid to our colleagues, family or any other persons. In the crucial time prior to arrival of Ambulance or Para Medics, You could sustain the injured person/s and prevent loss of life or any further injuries.

Individuals who have been injured can also help themselves prior to receiving assistance from other trained first aid or medical personnel by applying the basic principles of First Aid.

This course is designed to give the potential first aiders the variety of basic principles that are required to be applied and the knowledge of how they can assist in first aid situations. The course can also be used as an annual refresher course for those who need to be updated / re-qualified and keep up to date with the latest first aid methods.

**This course is approved by the St John's Ambulance, United Kingdom**

### COURSE OBJECTIVES:

- To instruct attendees in the First Aid principles in order to save life and prevent further damage to persons suffering from various injuries or physical conditions.
- To give the trainees the ability to cope with and administer first aid during a situation or emergency until arrival of professional personnel.
- To ensure that the trainees can sufficiently administrate Cardiopulmonary Resuscitation (CPR) to those who require it.
- To refresh, remind and re-qualify First Aider/s, who have expired their qualify minimal time of two years since basic training.

**COURSE DURATION:** Four days

### WHO SHOULD ATTEND:

All employees in industry, commerce and all in workplaces, particularly those who work in high risk or hazardous areas. The course can also be for those who require a refresher in this skill. The course can also be applied to domestic needs.

## **DAY 1**

### **INTRODUCTION & ADMINISTRATION**

#### **Module 1 Principles and Practices of First Aid at an Emergency**

**Competency** On completion of training the delegate will be able to act safely, promptly and effectively when an emergency occurs at work.

#### **Module 2 Asphyxia**

**Competency** On completion of training the delegate will be able to administer First Aid safely and promptly to a casualty who has been overcome by gas or fumes.

#### **Module 3 Cardio-Pulmonary Resuscitation**

**Competency** On completion of training the delegate will be able to administer Cardio-Pulmonary Resuscitation promptly and effectively.

#### **Module 4 Causes of Unconsciousness and Treatment**

**Competency** On completion of training the delegate will be able to administer First Aid safely, promptly and effectively to a casualty who is unconscious.

### **REVISION PAPER 1**

**DAY 2**

**Module Five      Theory      Wounds and Bleeding**

**Competency:**      On completion of training the delegate will have the ability to administer First Aid safely, promptly and effectively to a casualty who is wounded or bleeding.

**Module Six      Theory      Shock**

**Competency:**      On completion of training the delegate will have the ability to administer First Aid safely, promptly to a casualty who is in shock.

**Module Seven      Theory      Burns and Scalds**

**Competency:**      On completion of training the delegate will have the ability to administer First Aid safely, promptly to a casualty who has been burnt or scalded.

**Module Four      Theory      Fractures Sprains Strains and Dislocations**

**Competency:**      On completion of training the delegate will have the ability to administer First Aid safely and effectively to a casualty who is suffering an injury to bones, muscles or joints.

**REVISION PAPER 2**

### **DAY 3**

#### **Module 9            Eye Injuries**

**Competency**                    On completion of training the delegate will be able to administer First Aid safely, promptly and effectively to a casualty who has an eye injury.

#### **Module 10            Poisons**

**Competency**                    On completion of training the delegate will be able to administer First Aid safely and promptly to a casualty who has been poisoned.

#### **Module 11            Medical Conditions**

**Competency**                    On completion of training the delegate will have the ability to recognize common major illnesses and take the appropriate action.

#### **Module 12            Minor Injuries**

**Competency**                    On completion of training the delegate will have the ability to treat minor injuries.

### **REVISION PAPER 3**



## Occupational Safety & Health Act (OSHA)

### **Relevant to a Petroleum Refinery**

#### **Seminar Background:**

The hazards in any organization vary in degree but will always exist in the working environment. The responsibility falls between the HSE Manager / Officer and the employees. OSHA Regulations give a blue print of how Accidents and Occupation Health should be handled

This seminar is designed to give the participants an outline of OSHA regulations in regard to requirements for the management of hazards associated with processes using highly hazardous chemicals. PSM 1910.119 (Process Safety Management of Highly Hazardous Chemicals) is the basis of OSHA regulations for Refineries, Chemical Plants and certain storage depots for chemicals.

#### **Seminar Objectives:**

This two - day program will introduce the OSHA policies and approach to Health and Safety requirements for the management of hazards associated with processes using highly hazardous chemicals.

**Course Duration:** Two Days

#### **Who Should Attend:**

Safety Managers, Officers, Supervisors and those who involved or concerned with Occupational Health and Safety Implementation of policies, control and monitoring, within their organization.

#### **Course Outline:**

- **Introduction to OSHA**
  - *What is OSHA*
  - *OSHA Policies and Criteria*
  - *The OSHA Standards and Codes*
  - *How OSHA can be implemented*
  - *Encouraging Employee Participation*
  - *Benefits of OSHA*
  
- **Risk and Hazard**

- **OSHA General Environmental controls (Overview)**
  - Safety colour code for marking physical hazards (OSHA 1910.144)
  - Specifications for accident prevention signs and tags (OSHA 1910.145)
  - Accident prevention signs and tags (OSHA 1926.200)
  - Medical services and first aid (OSHA 1910.151)
  - The control of hazardous energy (lockout / tagout) (OSHA 1910.147)
  - Permit required confined spaces (OSHA 1910.146)
  - Procedures for Atmospheric Testing (OSHA 1910.146)
  
- **Respiratory Protection (1910.134)**
- **Occupational Health**
  - Noise (1910.95)
  - Chemical Hazards - body uptake, TLV, etc.
  - Hazard Communication (OSHA 1910.1200)
  - Blood Borne Pathogens (OSHA 1910.1030)
  - Ergonomics (OSHA 1910.900 repealed)
  
- **OSHA & Fire**
  - Means of Egress (OSHA 1910.37)
  - Employee emergency plans & fire prevention plans (OSHA 1910.38)
  - Fire extinguishers (OSHA 1910.157)
  
- **OSHA & Safety Inspections - Maintenance of OSHA Policies**
  
- **Process Safety Management (OSHA 1910.119)**
  - Process safety information
  - Process Hazard Analysis – HAZOP Study
  - Operating Procedures
  - Employee Participation
    - Training
    - Contractors
    - Pre-Startup Safety Review
    - Mechanical Integrity
    - Hot Work Permit
    - Management of Change
    - Incident Investigation
    - Emergency Planning
    - Compliance Audits
    - Trade secrets
  
- **Summary and Evaluation**

**Program Support:**

This program is supported by H & S videos to emphasize certain aspects of this program and to highlight critical points.

**Seminar Background:**

The hazards in any organization vary in degree but will always exist in the working environment. The responsibility falls between the HSE Manager / Officer and the employees. OSHA Regulations give a blueprint of how Safety, Occupational Health and Accidents should be handled.

This seminar is designed to give the participants an outline of OSHA regulations in regard to requirements for the management of hazards associated with processes using highly hazardous chemicals. PSM 1910.119 (Process Safety Management of Highly Hazardous Chemicals) is the basis of OSHA regulations for Plants and certain storage depots for chemicals and Toxic Materials.

**Seminar Objectives:**

This three - day program will introduce the OSHA policies and approach to Health and Safety requirements for the management of hazards associated with processes using highly hazardous chemicals and toxic materials.

**Course Duration:** Three Days

**Who Should Attend:**

Safety Managers, Officers, Supervisors and those who are involved or concerned with Occupational Health and Safety Implementation of policies, control and monitoring, within their organization.

**Course Outline:**

- **Introduction to OSHA**
  - *What is OSHA*
  - *OSHA Policies and Criteria*
  - *The OSHA Standards and Codes*
  - *How OSHA can be implemented*
  - *Encouraging Employee Participation*
  - *Benefits of OSHA*
  
- **Risk and Hazard**
  
- **OSHA General Environmental controls (Overview)**
  - *Safety colour code for marking physical hazards (OSHA 1910.144)*
  - *Specifications for accident prevention signs and tags (OSHA 1910.145)*

- Accident prevention signs and tags (OSHA 1926.200)
- Medical services and first aid (OSHA 1910.151)
- The control of hazardous energy (lockout / tagout) (OSHA 1910.147)
- Permit required confined spaces (OSHA 1910.146)
- Procedures for Atmospheric Testing (OSHA 1910.146)
  
- **Respiratory Protection (1910.134)**
- **Occupational Health**
  - Noise (1910.95)
  - Chemical Hazards - body uptake, TLV, etc.
  - Hazard Communication (OSHA 1910.1200)
  - Blood Borne Pathogens (OSHA 1910.1030)
  - Ergonomics (OSHA 1910.900 repealed)
  
- **OSHA & Fire**
  - Means of Egress (OSHA 1910.37)
  - Employee emergency plans & fire prevention plans (OSHA 1910.38)
  - Fire extinguishers (OSHA 1910.157)
  
- **OSHA & Safety Inspections - Maintenance of OSHA Policies**
  
- **Process Safety Management (OSHA 1910.119)**
  - Process safety information
  - Process Hazard Analysis – HAZOP Study
  - Operating Procedures
  - Employee Participation
    - Training
    - Contractors
    - Pre-Startup Safety Review
    - Mechanical Integrity
    - Management of Change
    - Incident Investigation
    - Emergency Planning
    - Compliance Audits
    - Trade secrets

### **Safety Management Systems (SMS)**

- **Summary and Evaluation**

### **Program Support:**

This program is supported by H & S videos to emphasize certain aspects of this program and to highlight critical points.

## Portable Fire Extinguishers Awareness

### Course Background:

If tackled immediately and utilising the correct Portable Fire Appliance small fire can be brought quickly under control and even extinguished, saving life, limb and un-measurable expense.

Fires which get out of control cause loss of millions of dollars and despite modern fire fighting equipment the abilities and efficiency of the fire fighters make the difference in how fires are contained and eliminated. Reducing risks of uncontrolled fires and fire prevention is a major consideration and requires full understanding of what fire is, why they start and what they feed on.

This course is designed to teach the theory and practice of Portable Fire Extinguishers for Initial Fire Fighting to help prevent the loss of life, limb and property caused by uncontrolled fires.

It will also cover the fire equipment including the correct use, maintenance and hazards involved.

Course Duration: Three Days

### Course Learning Objectives:

**On completion of this course the participants will be able to confirm:**

- How uncontrolled fires are started and the loss of life and limb that occurs.
- The combustion hazards in the workplace and industrial areas caused by flammables and the various types and characteristics
- The type of first hand fire fighting equipment and effective use
- Portable Fire Extinguishers: Types & Effective Usage

### Daily Contents:

#### Day One

- The Fire Triangle and Fire Characteristics
- Fire Prevention Methods and Employee Responsibilities
- Deaths and Injuries Reports in Industrial & Domestic Fires
- Types of Fires: Petrochemical, Chemical,
- Oil & Gas and Other Materials

#### Day Two

- The Dangers and Hazards of Fire: Speed & Spread
- Smoke: Toxic and Asphyxia
- Static and Portable Appliances: Water, Foam and Chemical
- Fire Equipment: Testing and Maintenance
- Personal Protection Equipment (PPE), Clothing and Head Gear

### **Day Three**

- Fire Alarms and Systems
- Fire and Associated Risk Assessment
- Practical Fire Extinguisher demonstration
- Case Studies, Exercises and Group Discussions
- Course Evaluation
- Course

### **Who Should Attend:**

All employees at any level and any Industry and including induction or refresher training.

### **Program Support:**

The program is supported by videos and audio / visual techniques. Also instructional manuals designed for specific action systems to assist the user.

The course is taught to British standards of Fire Fighting standards.

## Practical Approach to HACCP

### Course Objectives:

The course is designed to explain the fundamentals of the Food Quality System **HACCP** (**H**azard **A**nalysis and **C**ritical **C**ontrol **P**oints). The **HACCP** system will identify, monitor potential hazards that may occur on a food production line and finally establish corrective action and record keeping procedures.

**HACCP** is a valuable quality tool and it is a legal requirement for all food handling and processing establishments in the EU countries.

The course is an intensive two-day workshop introducing the theory of **HACCP** and providing the delegate with practical experience of working with **HACCP** principles.

The workshop will cover everything needed to set up and operate an effective **HACCP** system, from realistic planning of the project through to successful implementation and maintenance. The course uses team activities to give delegates first hand experience of practical application

### Who Should Attend:

The workshop is aimed primarily at **HACCP** team members, but will assist anyone wishing to gain a thorough understanding of the **HACCP** approach to food safety.

### **First Day**

- Introduction to HACCP and What is HACCP?
- Why do we Need HACCP?
- Preparing for HACCP - The Management Process
- How to do a HACCP Study
- The HACCP Plan
- HACCP Step by Step
- Constructing a Process Flow Diagram

### **Second Day**

- How to do a HACCP Study continued
- Identifying Hazards and Control Measures.
- Establishing Critical Control Points

### **Third Day:**

- Managing Critical Control Points
- Putting the HACCP Plan into Practice
- The Practical Approach

### **Fourth Day:**

- Maintaining the HACCP Plan
- Case studies and Group Discussion
- Case Exercises
- Course Evaluation
- Course Summary

### **Course Support:**

This course is supported by Interactive Group Discussions and Case studies from EU and uses Graphical and Visual means to assist the attendees in understanding this subject. Video's also included.

## Practical Fire Fighting Techniques

### Course Background:

Reducing risks of uncontrolled fires and fire prevention is a major consideration and requires full understanding of what fire is, why they start and what they feed on.

This course is designed to teach the Practical Techniques of fire fighting operations to **'Kill' or Contain** the Fire.

It includes fire equipment utilisation including the correct use, maintenance and the practical hazards involved.

**The course will be conducted entirely at site areas for total outside practical applications it uses 'Walk Through' and 'Talk Through' Methods for Maximum Individual and Team Activities and Interaction. It also discusses in Practical surroundings.**

Course Duration: Two Days

### Course Learning Objectives:

**On completion of this practical course the participants will be able to confirm:**

- Introduction at Practical Training Site
- Techniques of how uncontrolled fires can be dealt with utilising Fire Equipment efficiently and effectively, this includes:
  - Portable Fire Extinguishers
  - Fire equipment ie Hoses, Branches and Other Associated Equipment
  - Personal Protection Equipment PPE and Head Protection
  - Rescue Techniques in 'Favorable' Circumstances
- Techniques of how to 'Kill' or Contain the Uncontrolled fire Hazard
- Primary and Secondary Fire Hazards

## **Daily Contents:**

### **Day One**

- Introduction to fire and practical approaches
- Practical Fire Demonstration and Techniques
- 'Kill Fire' Demonstration using Portable Fire Extinguishers:
- First Hand Fire Equipment & Appliances: Water, Foam and Chemical
- Student Practical Use of Fire Equipment Types
- Fire equipment, Hoses, Reeling and Branches
- Testing and Care and Maintenance of Equipment including:
  - Port Fire Equipment ie Water gas and Foam
  - The Utilisation of Portable Extinguishers
  - Fire equipment, Hoses, Reeling and Branches
  - The Power of Fire Equipment versus the Type of Fire
- Personal Protection Equipment (PPE), Clothing and Head Gear
- Actions in a Fire Emergency

### **Day Two**

- Rescue Techniques, Lifting and Carrying Injured Personnel Demonstration and Practical Exercises
- Physical Entries into confined Spaces
- Using Ladders Techniques and Practical Exercises
- Individual & Fire Team Exercises
- Primary and Secondary Fire Hazards
- Also to be Discussed during Practical Including:
  - Fire Hydrants and Water Supplies
  - Hazards: Burns and Smoke Hazards, Gassing, Smoke Inhalation & Choking
  - Associated Secondary Fire Hazards: Building collapse etc.
  - Fire Alarms and Systems
  - Smoke: Toxic and Asphyxia
  - Types, Colour Codes and Effective Use
  - Emergency Fire Procedures
- Course Evaluation
- Course Summary

**Who Should Attend:**

All Staff, fire crews, any company employee ie Storeman, Petrochemical Technicians, Laboratory Staff / Oil & Gas personnel or those who may be possibly faced with a fire hazard and be responsible for first hand Fire Fighting and Containment.

**Program Support:**

The program is supported by also instructional manuals designed for specific and easy action systems to assist the user.

The course is taught to British standards of Fire Fighting standards.

Practical Demo if facilities available on Day Two and by arrangement with Equipment and suitable area for Practical Exercises utilising Portable fire Extinguishers and Fire Equipment, Ladders, Stretchers and Other associated Equipments.

## Process Hazard Analysis

### Course Objectives:

**On completion of the course the trainee/s will be competent in:**

- The hazards involved within industry and the relevant inherent environmental safety risks.
- Distinguish between hazard and risks and risk assessment processes.
- Storage and Movement of Hazardous Materials and the relevant safety regulations.

**Course Duration:** Three Days

### Course Contents:

- Introduction to the hazards within the industrial environment
- Risks and Hazards applicable and the potential damage to personnel and property
- COSSH - Care of Substances Hazardous to Health (Overview)
- Regulations and Policies concerned with a safe working environment
- Hazard Characteristics: Hydrocarbons, Chemicals, Liquefied and Natural Gases
- Flammability and Explosive Potential
- Behavior of Fluid and Gases
- Hazard Containment: Procedures and Permits
- Toxic Materials Hazards and Effects
- Electrical and Mechanical Risks and Hazards
- Fires: Sources Elimination, Control, Protection, Extinguishing
- Processing Operational Safety: Policies and Procedures
- Organizational Controls: Communications, Technical and Preventative
- Contingencies and Plans for Emergencies and Evacuation
- Storage and Handling of Hazardous Materials
- Movement of Hazardous Materials and Waste Materials ISO 1400 (Overview)
- Case Studies Based on Scenarios and Incidents
- Discussions and Summary

**Who Should Attend:**



Safety Managers, Supervisors, Operations Managers, Engineers and Safety Representatives and Personnel.

## **Rigging Safety Rules During Loading & Unloading Operations**

### **Course Introduction:**

Accidents involving crane lifting and hoisting equipment frequently happen, which could have been avoided. The cost to companies each year is incalculable were personal injuries are concerned and valuable personal are killed or injured. To avoid loss and damages hoisting / lifting riggers and operators must be fully trained in the skills of safety and inspections of the equipment involved.

This course is designed to minimum risks through poor safety operations and inspections and ensures that the operators and riggers are competent to utilize the equipment and materials involved. It includes theory and practical to ensure complete understanding. The course can be adapted for various clients operations either in onshore or offshore operations in docks and in oil rig platforms and barge operations.

### **Course Objectives:**

**This program enables the participants to:**

- Provide knowledge and skills in rigging operations on marine vessels and offshore rigs
- The Safety Rules involved in Rigging and Lifting Operations and Loads Hauling
- Inspection of Lifting Equipment
- The Personal Protective Equipment availability and usage
- Rigging Loft Equipment Maintenance and Safety Inspections
- Static and Mobile Crane Safe Operations

**Course Duration:** Five days

### **Course Contents:**

- Introduction to Banksman's responsibilities
- Personal Safety and Protective Clothing
- Lifting Rules to Avoid Personal Injuries
- Accident Prevention & Safety Rules
- Rigging Loft Equipment: Inspection and Maintenance
- Rigging Equipment Inspection and Maintenance

- Wire and Other Ropes: Inspection, Maintenance, Knots and Storage
  - Lifting Materials and Equipment
  - Load Calibration
  - Safe and Secure Working Loads
  - Chain Hoists Procedures
- 
- Hoists and Blocks
  - Signaling between Heavy Equipment Operator and Rigger
  - Loading and Hoisting Various Loads: Tubular etc.
  - Mobile Cranes
  - Applied Safety Drawings for Positioning
  - Practical Training
- 
- **Case Studies**
- 
- **Discussions**
- 
- **Course Summary and Evaluation**

**Who Should Attend:**

Banksmen, Riggers, Engineers, Supervisors, Foremen and other personnel responsible for Cranes, Lifting and Hoisting from Static or Mobile Lifting Equipments including Port or Harbours.

## Risk Assessment & Analysis

### Course Background:

In all places of work particularly where there are associated risks involved with production, processing and manufacturing, there are also associated risks from chemicals, machinery and moving equipments. These need to be risk assessed and quantified to protect employees and the property concerned. Risks can be assessed on various levels and a plan of Risk Areas can be formulated and coordinated. This course will provide the tools for Risk Assessment to be carried out and qualified.

### Course Learning Objectives:

**Upon completion of this course, participants will have a complete understanding of:**

- The practical applications of Risk Assessment in the Hazardous workplace including, the Cause and Effects, Fault Analysis and Investigations Process and Techniques.
- The ability to Identify Work Hazards and Establish Resources including Preventative and Necessary Corrective Measure & Systems.

**Course Duration:** Five days

### Who Should Attend:

This course is intended for Managers, Supervisors, Team Leaders and others, who are responsible for Health, Safety and Environmental protection of personnel and property.

### Course Contents:

- The Role of Risk assessment within Management System
- Semi-Quantitative Criteria for Tolerability of Risk
- Framework for Risk Assessment
- How to Carry Out Semi-Quantitative Risk Assessment

- Risk Assessment Techniques - Equipment Based and Task Based Approaches
  - Fire and Chemical Hazards Identification and Analysis
  - Machinery Hazard Identification and Analysis Techniques: Human Error and Accident Causation (Latent and Active Errors)
  - Multi-Causal Catalysts, Events and Outcomes
- 
- Practical Applications, Case Studies on Work Equipment Risk Assessment
  - Case Effect and Fault Tree Analysis as a Deductive Technique for the Analysis of Accident Causation
  - Analysis of High Potential Accidents
  - Techniques of Accident Investigation, Analysis and Reporting
  - Prioritizing and Targeting Corrective / Preventative Measures
  - Mechanisms for Implementing, Control, Monitoring and Review of Action Plans
  - EU and Saveso Directives
  - Practical Element including: Case Studies & Discussions
  - Exercises Analysis and Conclusions (Practical wherever possible)
  - Course Summary and Evaluation

**Program Support:** The program is supported by Videos and Actual Events Study Analysis from Piper Alpha, Mexico City Chemical Incident and Saveso Incident

## Advanced Risk Assessment with Production & Operation

### Course Background:

In all places of work particularly where there are associated risks involved with production, processing and manufacturing, there are also associated risks from chemicals, machinery and moving equipments. These need to be risk assessed and quantified to protect employees and the property concerned. Risks can be assessed on various levels and a plan of Risk Areas can be formulated and coordinated. This course will provide the tools for Risk Assessment to be carried out and qualified.

### Course Learning Objectives:

**Upon completion of this course, participants will have a complete understanding of:**

- The practical applications of Risk Assessment in the Hazardous workplace including, the Cause and Effects, Fault Analysis and Investigations Process and Techniques.
- The ability to Identify Work Hazards and Establish Resources including Preventative and Necessary Corrective Measure & Systems.

**Course Duration:** Five days

### Who Should Attend:

This course is intended for Managers, Supervisors, Team Leaders and others, who are responsible for Health, Safety and Environmental protection of personnel and property.

### Course Contents:

- The Role of Risk assessment within Management System
- Semi-Quantitative Criteria for Tolerability of Risk
- Framework for Risk Assessment
- How to Carry Out Semi-Quantitative Risk Assessment

- Risk Assessment Techniques - Equipment Based and Task Based Approaches
  - Fire and Chemical Hazards Identification and Analysis
  - Machinery Hazard Identification and Analysis Techniques: Human Error and Accident Causation (Latent and Active Errors)
  - Multi-Causal Catalysts, Events and Outcomes
- 
- Practical Applications, Case Studies on Work Equipment Risk Assessment
  - Case Effect and Fault Tree Analysis as a Deductive Technique for the Analysis of Accident Causation
  - Analysis of High Potential Accidents
  - Techniques of Accident Investigation, Analysis and Reporting
  - Prioritizing and Targeting Corrective / Preventative Measures
  - Mechanisms for Implementing, Control, Monitoring and Review of Action Plans
  - EU and Saveso Directives
  - Practical Element including: Case Studies & Discussions
  - Exercises Analysis and Conclusions (Practical wherever possible)
  - Course Summary and Evaluation

**Program Support:** The program is supported by Videos and Actual Events Study Analysis from Piper Alpha, Mexico City Chemical Incident and Saveso Incident

## **Risk Management & Safety for the Oil & Gas Industry**

### **Course Background:**

In all places of work particularly in the Oil & Gas Industry where there are associated risks involved with production, processing and manufacturing, there are also associated risks from chemicals, machinery and moving equipments. These need to be risk assessed and quantified to protect employees and the property concerned.

Risks can be assessed on various safety levels and a plan of Risk Areas can be formulated and coordinated. This course will provide the tools for Risk Assessment to be carried out to be Analyzed, Recorded and Qualified.

### **Course Learning Objectives:**

**Upon completion of this course, participants will have a complete understanding of:**

- The practical applications of Risk Assessment in the Hazardous workplace including, the Cause and Effects, Fault Analysis and Investigations Process and Techniques.
- Safety Assessment and Risks Involved with Oil & Gas Industries
- The ability to Identify Work Hazards and Establish Resources including Preventative and Necessary Corrective Measure & Systems.

**Course Duration:** Four days

### **Who Should Attend:**

This course is intended for Managers, Supervisors, Team Leaders and those who are responsible for conducting accurate risk assessments within the Oil & Gas Industries and others, who are responsible for Health, Safety and Environmental protection of personnel and property.

### **Program Support:**

The program is supported by Videos and Actual Events, Study Analysis from Piper Alpha, Mexico City Chemical Incident and Soveso Incident and the latest

European Union Directives. It uses interactive discussion groups, exercises and problem solving techniques to enhance the student's understanding.

### **Daily Course Contents:**

#### **Day One**

- The Risks Associated within the Oil & Gas Industries and the Past Disaster and Learning Curves
- The Role of Risk assessment within Management System
- Semi-Quantitative Criteria for Tolerability of Risk
- Framework for Risk Assessment
- How to Carry Out Semi-Quantitative Risk Assessment

#### **Day Two**

- Risk Assessment Techniques - Equipment Based and Task Based Approaches
- Fire and Chemical Hazards Identification and Analysis
- Machinery Hazard Identification and Analysis Techniques: Human Error and Accident Causation (Latent and Active Errors)
- Multi-Causal Catalysts, Events and Outcomes

#### **Day Three**

- Practical Applications, Case Studies on Work Equipment Risk Assessment
- Case Effect and Fault Tree Analysis as a Deductive Technique for the Analysis of Accident Causation
- Analysis of High Potential Accidents
- Techniques of Accident Investigation, Analysis and Reporting
- Prioritizing and Targeting Corrective / Preventative Measures
- Mechanisms for Implementing, Control, Monitoring and Review of Action Plans

#### **Day Four**

- EU and Saveso Directives
- Practical Element including:
  - Case Studies
  - Group Discussions
  - Exercises Analysis and Conclusions (Practical wherever possible)
- Course Review & Evaluation
- Course Summary

## Advanced Risk Assessment with Production & Operation

### Course Background:

In all places of work particularly where there are associated risks involved with production, processing and manufacturing, there are also associated risks from chemicals, machinery and moving equipments. These need to be risk assessed and quantified to protect employees and the property concerned. Risks can be assessed on various levels and a plan of Risk Areas can be formulated and coordinated. This course will provide the tools for Risk Assessment to be carried out and qualified.

### Course Learning Objectives:

**Upon completion of this course, participants will have a complete understanding of:**

- The practical applications of Risk Assessment in the Hazardous workplace including, the Cause and Effects, Fault Analysis and Investigations Process and Techniques.
- The ability to Identify Work Hazards and Establish Resources including Preventative and Necessary Corrective Measure & Systems.

**Course Duration:** Five days

### Who Should Attend:

This course is intended for Managers, Supervisors, Team Leaders and others, who are responsible for Health, Safety and Environmental protection of personnel and property.

### Course Contents:

- The Role of Risk assessment within Management System
- Semi-Quantitative Criteria for Tolerability of Risk
- Framework for Risk Assessment
- How to Carry Out Semi-Quantitative Risk Assessment
- Risk Assessment Techniques - Equipment Based and Task Based Approaches
- Fire and Chemical Hazards Identification and Analysis

- Machinery Hazard Identification and Analysis Techniques: Human Error and Accident Causation (Latent and Active Errors)
- Multi-Causal Catalysts, Events and Outcomes
  
- Practical Applications, Case Studies on Work Equipment Risk Assessment
- Case Effect and Fault Tree Analysis as a Deductive Technique for the Analysis of Accident Causation
- Analysis of High Potential Accidents
- Techniques of Accident Investigation, Analysis and Reporting
- Prioritizing and Targeting Corrective / Preventative Measures
- Mechanisms for Implementing, Control, Monitoring and Review of Action Plans
- EU and Saveso Directives
- Practical Element including: Case Studies & Discussions
- Exercises Analysis and Conclusions (Practical wherever possible)
- Course Summary and Evaluation

**Program Support:** The program is supported by Videos and Actual Events Study Analysis from Piper Alpha, Mexico City Chemical Incident and Saveso Incident

## Risk Management

### Course Background:

In all places of work particularly where there are associated risks involved with production, processing and manufacturing, there are also associated risks from chemicals, machinery and moving equipments. These, need to be risk assessed and quantified to protect employees and the property concerned. Risks can be assessed on various levels and a plan of Risk Areas can be formulated and coordinated.

**This course will provide the tools for Risk Assessment to be carried out to Eliminate or Minimise Risks and Hazards Applied in the Industrial or Commercial Workplaces using the latest Techniques and Evaluation Methods.**

### Course Learning Objectives:

**Upon completion of this course, participants will have a complete understanding of:**

- The practical applications of Risk Assessment in the Hazardous workplace including, the Cause and Effects, Fault Analysis and Investigations Process and Techniques.
- The ability to Identify Work Hazards and Establish Resources including Preventative and Necessary Corrective Measure & Systems
- Conduct Risk assessments, analysis and recommend the correct management action
- Set up and Manage Risk Control Systems (RCMs)

**Course Duration:** Five days

### Who Should Attend:

This course is intended for Managers, Supervisors, Team Leaders and others, who are responsible for Health, Safety and Environmental protection of personnel and property and are required to understand and implement Advanced Risk Management systems and criteria.

**Program Support:** The program is supported by Videos and Actual Events Study Analysis from Piper Alpha, Mexico City Chemical Incident and Sveso Incident

### Course Contents:

- The Role of Risk assessment within Management System

- EU and Saveo Directives & Standards
- Risk Management revision:
  - Causal Catalysts, Events and Outcomes
  - Semi-Quantitative Criteria for Tolerability of Risk
  - Framework for Risk Assessment
- **How to Carry Out Semi-Quantitative Risk Assessment**
  - Risk Assessment Techniques - Equipment Based and Task Based Approaches
  - Fire and Chemical Hazards Identification and Analysis
  - Machinery Hazard Identification and Analysis Techniques: Human Error and Accident Causation (Latent and Active Errors)
- Practical Applications, Case Studies on Work Equipment Risk Assessment
- Case Effect and Fault Tree Analysis as a Deductive Technique for the Analysis of Accident Causation
- Analysis of High Potential Accidents
- Techniques of Accident Investigation, Analysis and Reporting
- Prioritizing and Targeting Corrective / Preventative Measures
- Mechanisms for Implementing, Control, Monitoring and Review of Action Plans
- Risk Measurement and Techniques to Reduce Risks and Hazards
- Risk control Systems (RCSs)
- Management Arrangements
- Planning the overall health and safety management system
- Setting objectives
- Devising workplace precautions
  - Controlling health risks
- Hazard Identification
- Risk Evaluation & Assessments
- Risk controls

#### Devising risk control systems (RCSs) and Risk Elimination / Risk Minimizing

- Policy
- Organizing
- Implementing
- Measuring performance
- Reviewing performance
- Auditing
- Framework for setting risk control systems
- Devising management arrangements
- Formulating and Producing Informative Risk Reports

- Measuring and Feedback from Risk Estimations
- Practical Element including:
  - Case Studies & Discussions
  - Exercises Analysis and Conclusions (Practical wherever possible)
  - Course Evaluation
  - Course Summary

## Safety and Loss Prevention for Supervisors

### Course Background:

The hazards in any organization vary in degree but will always exist in the working environment. The responsibility falls between the HSE manager / officer and the employees. Mistakes leading to varying levels of catastrophes mean an inevitable loss of life, limb and organizational value.

**Credibility is also at stake where negligence is proven and company images are questionable.**

The ultimate responsibility is levied at the organization as various protective legislation is specific and all precautions against accidents must be implemented and maintained. Safety Managers and safety personnel must execute their responsibility to prevent or inhibit any poor working safety practices in the workplace, this also includes the participation of all employees.

### Course Objectives:

**This four day program will provide the delegates with**

The Modern Philosophy of safety in the working environment and the Occupational Health and Safety precautions against hazards that should be taken in working environments. The course also includes the employee responsibilities and consequences of poor safety attitude. It also covers Human Error Factors and the cause of loss of life, limb and the costs involved

**The course content also includes the current EU standards and legislation in the work place**

### Program Support:

This program is supported by health and safety videos to emphasize certain aspects of this program and to highlight critical points. The course is highly interactive and includes discussion sessions and desk top exercises for students maximum involvement and learning potential.

### Who Should Attend:

Managers, Supervisors and Staff who wish to influence their employee's attitudes towards safety and Safety Officers

## **Daily Course Outline:**

### **Day One**

- **Introduction to Managing Employee Safety and Health**
- Environment
- Fire
- Managing Safety
- Accidents - Accident Triangle - Accident prevention
- Causes of Accidents
- Accident Prevention Systems
- Safety Regulations
- Emergencies

### **Day Two**

- **Environmental Design (Overview)**
- **Maintenance**
- **Work Permit Systems**
- **Effective Safety Communication**
- **Managing Occupational Health.**
- Definition
- Principles
- **Physical Hazards**
- **Ergonomics**

### **Day Three**

- **Psychological Hazards**
- **Personal Protective Equipment - (in specific environments)**
- **Manual Handling**
- Lifting
- Moving
- **Electrical Safety**
- **Signs & Labels - new EU regulations**

- **Safe Working Systems**

### **Day Three Cont'd**

- **Hazards and precautions**
- **Risk and Hazard**
- **The 5 steps - look, decide, evaluate, record and review**
- **HAZOP**

### **Day Four**

- **Job task analysis**
- **Safety Inspections**
- **Improving Safety Performance**
  - Job Attitudes
  - Training
  - Staff development
  - Contractors & Safety
  - Safety committees
- **Fire**
  - Prevention
  - Definitions
  - Classifications
  - Fire extinguishers - new EU Codes
  - Equipment. - Warning Systems
- **Hazardous Materials Storage and Handling**
- **Case Studies & Discussions**
- **Theory Exercise Scenario (Practical Exercise can be organised at site if facilities are available)**
- **Course Review and Evaluation**
- **Course Summary**

## Safety Enhancement

### Course Description:

Safety and Health Management are becoming an evermore-important aspect in the control and reduction of accidents, incidents, illness and expensive litigation claims. Within contracts and contracting in the Construction and Oil/Petrochemical industries covering the essential purpose of these regulations, their scopes and definitions, areas of specific responsibility of various parties, competencies expected, safety awareness and safe working practices, occupational safety plans, training procedures, supply of information and document control, keeping of records etc.

Occupational safety linked to the European six pack covering such areas as the management of health and safety, work equipment, personal protective equipment, manual handling are particularly applicable to the Construction and Oil/Petrochemical industries, as is the control of general and personal hygiene and health surveillance programming.

### Learning Objectives:

This is a practical briefing designed to make participants aware of the requirements of the regulations and the steps they need to take in order to comply with them. Undertaking a number of specific assessment criteria and health and safety risk appraisal checklist within the specifics of contracts and contracting in various industries. This seminar will study situations from the viewpoint of the employer and the safety engineer focusing on key elements, notably:

- Introduction and learning objectives
- Risk assessment and contracting requirements
- Purpose of regulations; scope and definition
- Responsibilities of various parties
- Assessment of competence and resources

### **Participants will learn and understand:**

- The principles of good health and safety practices
- Responsibilities and areas of perceived competence
- Writing of good safety work practices
- Practical risk assessment in the oil petrochemical industry
- Specific dangerous practices and hazards control
- Relevant health and hygiene standards

**Course Duration:** Five Days

**Who Should Attend:**

Potential Safety Managers , Supervisors and Safety Representatives. Anyone who works in the Construction, Oil and Petrochemical industries who employs contractors or sub-contractors, and who needs as part of their legal risk assessment requirements, to effectively assess the specific dangers and risks.

**Course Contents:**

- Introduction, learning objectives, risk assessment and contracting assessments
- Purpose of regulations, scope and definitions, and the effective use of these
- Responsibilities of various parties, assessments of competence and resources
- Health and Safety files, what they must contain and how to maintain them
- Health and Safety plan, how to draw up and use effectively with specific action points
- Specific safety documents, training procedures and information on use of same
- Identifying specific hazards and dangers in the Oil/Petrochemical industries and how to assess risk and how best to deal with it
- Occupational and Health hazards, which can be action planned for health surveillance programming
- Health and hygienic standards, writing up and using safe practice/procedures to best effect
- *On site Inspections*
- Practical/Actual
- Changes
- Improvements/Modifications
- Reporting on audits
- What action should be taken, how and by whom?
- Occupational Health including Ergonomics
- Accident/Incident Investigations, Report forms etc.
- Fire
- Spillage of Chemicals etc.
- Evacuation
- Disasters and preliminary planning
- Safety case studies and discussion
- Course Evaluation and Summary

## Transporting Hazardous and Dangerous Goods & Cargo

### Course Introduction:

Care in handling of dangerous goods and cargo by transport are of rising concern where companies have to conform to new stringent regulations and infringements often results in large fine or may lead to a critical situation causing death and injuries. Companies who are engaged in using chemicals and toxic materials for processing and are responsible for the management and handling during transportation with highest regards for safety and health and the general public and those who are handling during the whole process.

This course is deigned to inform the attendees of the rules and regulations which are applied to Transporting Dangerous Goods and Cargo and which include all Chemical and Toxic Materials, it also stipulates the handling during transporting and when certain goods are at their most volatile and the care when handling and Management involved.

It also discusses the UN and EU regulations governing their use and the possible penalties involved for non compliance. It discusses in detail the ISO 14000 Implications and Confirmatory details of the Basle Convention concerning Transboundary requirements.

Course Duration: Five Days

### Course Methodology:

The course speaker uses interactive discussions, exercises, graphics and video to explain the course contents and to assist in the learning objectives. Considerable group discussions and problem solving are encouraged.

### Who Should Attend:

Transport Managers and Supervisors, Controllers and Handlers, also those responsible for Chemical and Hazmat storage managers and controllers. This course will also benefit chemical and waste disposal managers, engineers and managers.

## **Daily Course Contents:**

### **Day One**

- Introduction & Definitions: What are Dangerous or Hazardous Goods and Cargo including Chemical and Toxic Materials
- The UN and EU regulations for In-Country and Transboundary Cargo Management and the definition from a legal point of view and its influence on quantities
- National Hazardous Waste Strategy
- Illegal and irresponsible dumping penalties and social accounting
- Management Responsibilities and Strategy. Worker right – to – know. Company Hazardous Waste Strategy,
- Terminology's and Expressions of Transporting Dangerous Goods and Cargo

### **Day Two**

- Health effects of hazardous waste
- Biological abnormalities and human effects
- Permanent vs non-permanent damage, cumulative affects.
- Recognized safe concentration limits.
- EU Directives, The Basel Convention
- Implementing the Basel Convention.
- ISO 14000 Regulations and Requirements

- Components of a hazardous waste system,
- Hazardous waste surveys – establishment of quantities.
- Minimization of hazardous wastes

### **Day Three**

- Transboundary movement of hazardous materials and their position in international commerce.
- Storage, transportation, handling and treatment
- Hazardous Waste Characteristics
- The identification of hazardous materials,
- Analytical methods overview, sampling.

### **Day Four**

- Hazardous Chemical Spillages – Prevention and Control
- PCB wastes – transformer oils
- Dioxins
- Infectious waste
- Household Hazardous Wastes

### **Day Five**

- Case studies and Group Exercises



- Transporting Special Waste Case Studies
- Group Discussions
- Course Review
- Course Evaluation
- Course Summary