



**MLC**  
**QEHS AT ONE PLACE**  
**ML CONSULTANCY**



**OUR SERVICES:**

1. ISO Certification of company's related to OHSMS, EMS, QMS & IMS.
2. Audit's in organizations related to QEHS.
3. Statutory Compliance related to QEHS.
4. Documentation preparation support related to QEHS.
5. Fire Equipment Installations and Fire Licenses.
6. PPE's Supply related to any Industry.
7. Training's related to QEHS with Training materials.
8. Supporting in Plant setup & Up gradation related to QEHS.
9. Supporting in investigations related to any type of Incidents.
10. Special services like Safety Studies, Power System Studies, Industrial Hygiene, Supply of Pharma Clean Room Equipment's are available

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## **Internal Audit's in organizations related to QEHS.**

### **What is called as Auditing:**

Auditing is defined as the on-site verification activity, such as inspection or examination, of a process or quality system, to ensure compliance to requirements. An audit can apply to an entire organization or might be specific to a function, process, or production step.

ML Consultancy has been providing 3rd Party Independent QEHS audits to all industries since her inception.

Our pool of auditors is fully committed in adding value to your esteemed organization QEHS System by providing detailed and informative audit reports based on the following list of audit services:

- Mandatory S & HMS Audits
- Construction Worksite
- Metalworking Industry
- Shipyard
- Oil Refinery
- Petrochemical Plant
- Semiconductor Wafer Fabrication Plant
- Chemical Manufacturing Plant
- Pharmaceutical Plant
- Bulk Storage Terminal
- Internal ISO 9001 / ISO 14001 / ISO 45001
- Safety Audit for the Handling of Hazardous Substances

### **TYPES OF AUDITS:-**

1. IMS Audit
2. Safety Audit
3. Environment Audit
4. Health & Safety Audit
5. Survivance Audit



## **ISO Certification of company's related to OHSMS, EMS, QMS & IMS.**



### **What is meant by Certification? -**

Certification is the formal attestation or confirmation of certain characteristics of an object, person, or organization. This confirmation is often, but not always, provided by some form of external review, education, assessment, or audit. Accreditation is a specific organization's process of certification.

MLC Certification was founded with the simple aim of providing a certification service which goes beyond simply ticking the boxes. We wanted to provide a service which went beyond the grey, unemotional check-list approach to auditing and inspection which has typified the industry for far too long. As a result, we have constantly endeavored, and will continue to strive to introduce new, cutting edge and innovative approaches to meet the needs of our clients.

### **Journey to Certification**

#### **Detailed Proposal: -**

After a brief discussion with a member of our business development team, when you are ready to proceed, we will provide you with an individually tailored proposal, covering the investment required to obtain your ISO certification.

#### **Steps to Certification: -**

Obtain a full copy of the relevant ISO Standard documentation and review the requirements. Assemble your team, review our training course and define your strategy. Develop and implement your management system (policies, procedures and controls). You are now ready to start the assessment process for your management system.

#### **Pre-Assessment: -**

Pre-assessment is an early opportunity to review your management system against the requirements of the relevant ISO standards (s). Your assessor will conduct a gap-analysis and provide you with a full report of any areas to address before the formal assessment begins. After each stage, the assessor will prepare and deliver a comprehensive written assessment report detailing the findings of the assessment.

### Stage One Assessment

This initial assessment determines if the mandatory requirements of the standard are being met and if the management system is capable of proceeding to stage two. Non-conformities identified by the assessor will need to be addressed by your organization. At the end of your stage one assessment, all areas should be compliant with requirements of the relevant ISO standard(s) and allow progression to stage two.

### Stage Two Assessment

The stage two assessment determines the effectiveness of your management system, and seeks to confirm that your management system controls have been implemented and is fully operational. If your assessor is satisfied that your organization is fully compliant with the relevant ISO standard(s), they will recommend your organization for certification.

### Certification Decision

At this point in the process the assessor reviews any corrective actions taken to address findings raised in stage one and two. On successful completion of stages one and two, your assessor will make a recommendation for certification. The Certification Manager will review your file to ensure that the recommendation is made in an impartial, fair and competent manner.

### Certification Presentation

Once ISO certification is achieved, your organization will be issued with a Certification certificate and frame. You will also be provided with relevant logos (stickers and electronic versions) and an online digitally-signed version of your certificate.



## ISO Certification Flowchart



## **Documentation preparation support related to QEHS.**

### **QEHS Documentation:**

The EHS document templates are required for any Organization for getting certified in ISO 14001:2015, ISO 9001:2015 and 45001:2018 compliance. As each business is different, additional QEHS documents or revisions would be required to meet your organization's specific needs, requirements, context, risk profile, etc. If after reading through all of these documents, you feel like you need a consulting partner to help you develop your new QEHS documents.

**ISO 45001**



### **Mandatory Documents Required for OHSMS (Occupational Health & Safety Management System) Certification:**

- OH & S Manual
- OH&S policy
- Organization chart
- Identifying interested parties such as neighbors, regulatory bodies, NGO's and employees
- Risk matrix
- OH&S objectives and plans
- ERP Plan & Mock drill reports
- HIRA
- Legal Register
- Skill matrix, Training records
- Communication evidence
- ERP Plan & Mock drill reports
- Check lists of equipment's, third party certificates, calibration certificates, etc.
- PM Schedule, Calibration certificates
- Legal Register
- Audit schedule
- Audit report
- Minutes of Management Review
- Incidents Register
- Investigation reports of incidents
- Action plans
- Procedure for determining context of the organization and interested parties
- Procedure for identification and evaluation of environmental aspects and risks
- Competence, training and awareness procedure
- Procedure for communication
- Procedure for document and record control
- Procedure for internal audit
- Procedure for management review
- Procedure for management of nonconformities and corrective actions.

### **Mandatory Documents Required for EMS (Environment Management System) Certification:**



- EHS Manual
- Environmental policy
- Identifying interested parties such as regulatory bodies, neighbors, employees, NGO's
- Risk matrix
- Aspect-Impact register
- Significant environmental aspects
- Environmental objectives and plans
- OCP
- ERT Team, ERP Plan & Mock drill reports
- Legal register
- Skill matrix, Training records
- Communication evidence such as notice boards, emails, any bulletin
- Checklists, compliance registers, third party certification, calibration
- Audit programme
- Audit report
- Minutes of Management review
- Action plans
- Procedure for determining context of the organization and interested parties
- Procedure for identification and evaluation of environmental aspects and risks
- Competence, training and awareness procedure
- Procedure for communication
- Procedure for document and record control
- Procedure for internal audit
- Procedure for management review
- Procedure for management of nonconformities and corrective actions.

## Mandatory Documents Required for QMS (Quality Management System) Certification:

### Quality Management System



- The organization's quality policy and quality objectives.
- Quality manual.
- Procedures, instructions, and records.
- Data management.
- Internal processes.
- Customer satisfaction from product quality.
- Improvement opportunities.
- Quality analysis.

## Fire Equipment Installations and Fire License as per Government norms.

### Welcome to MLConsultancy Fire Systems Wing

If your business is on fire-risk, you need to check it and search for the best fire protection solutions to ensure the safety of your business. MLC Fire Systems feel privileged to introduce ourselves as the fire safety solution company providing assistance through our valuable products and services.

### MLC Fire Protection Systems

#### Fire Extinguishers:

We are the leading fire extinguisher suppliers in Hyderabad with our associated partners. We deal all type of fixed and trolley type fire extinguishers, after supply we undertake fire extinguishers AMC services & fire extinguishers refilling services.

- Stored Pressure Water Type Fire Extinguishers:
- DCP (ABC) Stored Pressure Type Fire Extinguishers:
- Carbon Dioxide Type Fire Extinguishers:
- Stored Pressure M. Foam Type Fire Extinguishers:
- Stored Pressure Clean Agent Type Fire Extinguishers:
- Modular Type Fire Extinguishers:



Fire Ball



#### Fire Hydrant Systems

Internal hydrant:



External hydrant



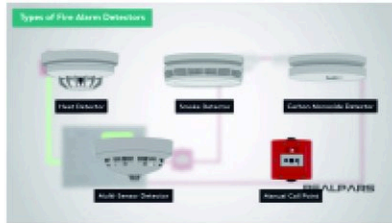
#### OUR BRANDS



# MLC Fire Detection Systems:

## Types of Fire Alarm System: -

- Heat detectors
- Smoke detectors
- Carbon Monoxide detectors
- Multi-sensor detectors
- Manual Call Points



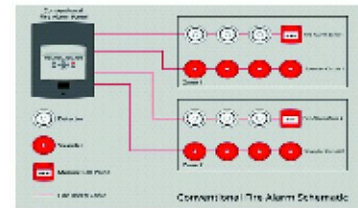
## Different Types of Fire Alarm Systems :-

Fire Alarm Systems can be broken down into four main types;

- Conventional
- Addressable
- Intelligent
- Wireless

### What is a conventional fire alarm system?

A conventional system employs one or more initiating circuits, connected to sensors (initiating devices) wired in parallel. These sensors are devised to decrease the circuits resistance when the environmental influence on any sensor exceeds a predetermined threshold.



### What is an addressable fire alarm system?

An addressable fire alarm system works by having every detection and notification device connected to each other and to the addressable fire alarm control panel. An addressable system sends digital signals in binary code, as opposed to a conventional fire alarm system which operates through electrical currents. Addressable systems operate like a computer and convert variations in voltage to binary code, various combinations of zeros and ones.

### What is an intelligent fire alarm system?

Intelligent fire alarm system also known as smart addressable fire alarm system. Intelligent fire alarm systems are designed for flexibility through custom programming specific to each application. Common smart fire alarm system products including Fire Alarm Control Panel, Smoke Detector, Heat Detector, Manual Call Point and other products. Accurate and intelligent to ensure fire safety.



### What is a Wireless fire alarm system?

The proposed fire alarm system is the first comprehensive wireless solution for all structure where it is not possible to provide traditional cabling or carry out construction works, or even the smallest repair. Its installation is fast and efficient, whereas thanks to the elements which imitate marble or wood or are painted to a RAL color the effect is highly aesthetic.

## OUR BRANDS



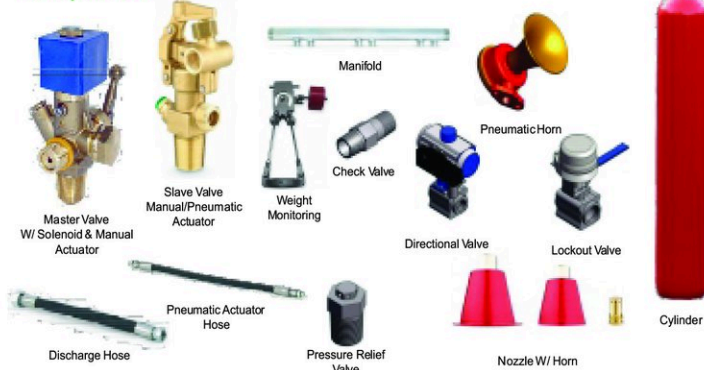
# MLC Fire Suppression Systems

## Co2 Fire Suppression System

Confirm: IS 15528  
IS 15493  
NFPA 12



### Components

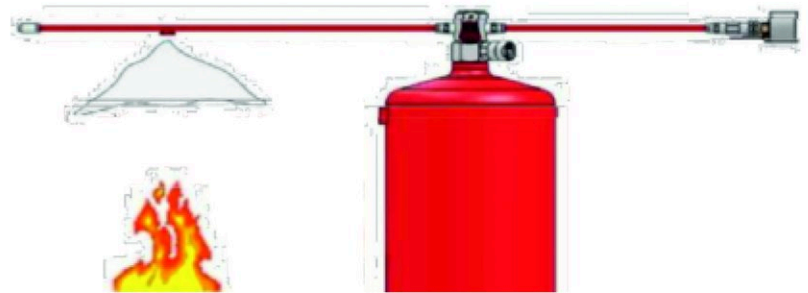


### Applications for CO2



## FIRE DTK TUBING SUPPRESSION

Carbon Dioxide (CO2)  
Dry Chemical Powder (MAP/PBC)  
Clean Agent (HFC227ea/236fa/FK5-1-12)



### APPLICATION



### INSTALLATION



### OUR BRANDS



## ADVANCED EXTINGUISHING SOLUTION



**VARIANT  
1**

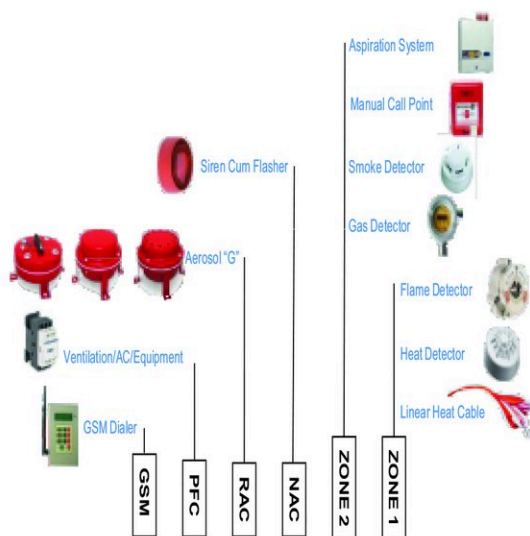
**Aerosol "G"** The Original DSPA  
Standalone Protection



**VARIANT-2 : SPRINKLER BULB ACTIVATION**



**VARIANT-3 : FIRE CONTROL MODULE**



### FEATURES

- ❑ FCM for Aerosol Fire Detection and Extinguish System for Panel, Engine, CNC Machine Etc... onshore and offshore applications.
- ❑ Capacity to manage up to 2 detection Zone , Cross Zone to avoid false release
- ❑ Choice of Fire Detection Technology (linear heat detector cable & Smoke/Flame/Gas/Aspiration Sensors);
- ❑ Direct control of up to 5 Aerosol "G"
- ❑ 10yrs Back up batteries
- ❑ Acoustic Alarm Signal;
- ❑ Manual or Automatic Activation
- ❑ Provision to Configure with GSM Dialer

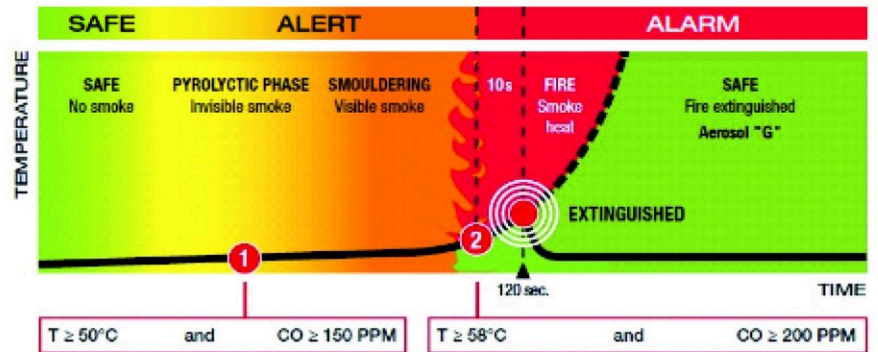


## VARIANT-4 : FIRE MANAGEMENT DEVICE

- ☐ Detects
- ☐ Alerts
- ☐ Communicates
- ☐ Extinguishes
- ☐ Controls

DETECTION  
TYPE

- Thermal
- Carbon Monoxide



## VARIANT-5 : MANUAL FIRST RESPONDER



## VARIANT-6 : FIXED SYSTEM





## MLC FIRE SYSTEMS SERVICES

What is the frequency of fire extinguisher refilling as per IS 2190?

Once Every Year

According to the guidelines set by the Bureau of Indian Standards (BIS), specifically IS 2190, the recommended frequency for refilling fire extinguishers is once every year. This standard is crucial to ensure the optimal functioning and reliability of these life-saving devices.

**The following Fire Extinguishers refilling services are available in MLC Fire System Services,**

Co2,  
DCP,  
ABC Type,  
Clean Agent,  
Nitrogen Based,  
Foam Type.

### **Fire Equipment's AMC Services:**

The following Fire Equipment's AMC is available by MLC Fire Systems Services,

Fire Extinguishers,  
Fire Modular,  
Fire Hydrant System,  
Fire Detection System,  
Fire Suppression System,

**Supporting in getting Fire NOC for new organizations and any other licenses required by Local Fire Authorities**

### **HPT of Fire Extinguishers,**

Hydrostatic testing is a way to test the fire extinguisher tank for leaks and overall strength. The portable fire extinguishers must be tested periodically to ensure its safety and reliability. In addition to annual inspections, portable fire extinguishers must be disassembled and hydrostatically tested periodically.

**Hydro Testing Fire Extinguisher**



## Legal requirement of HPT of Fire Extinguishers in India.

### **ANNEX E**

**IS 2190 : 2010**

**[Clauses 12.2.1 and 12.2.2 (g)]**

### **SCHEDULE FOR HYDRAULIC PRESSURE TESTING OF FIRE EXTINGUISHERS**

**E-1** Every extinguisher installed in premises shall be hydraulically pressure tested as per the schedule given below. There shall not be any leakage or visible distortion. Extinguisher which fails in this requirement shall be replaced.

**E-2** The carbon dioxide type and clean agent type fire extinguishers shall be pressure tested every time when the cylinders are sent for recharging ( after periodic discharge test or otherwise ) to the pressure specified in the relevant Indian Standard specifications.

| <i>Sl No.</i> | <i>Type of Extinguisher</i>                               | <i>Test Interval Year</i> | <i>Test Pressure kg/cm<sup>2</sup></i> | <i>Pressure Maintained for min</i> |
|---------------|-----------------------------------------------------------|---------------------------|----------------------------------------|------------------------------------|
| i)            | Water type (gas cartridge) (IS 940)                       | 3                         | 35                                     | 2.5                                |
| ii)           | Water type (stored pressure) (IS 6234)                    | 3                         | 35                                     | 2.5                                |
| iii)          | Water type (gas cartridge) (IS 13385)                     | 3                         | 35                                     | 2.5                                |
| iv)           | Mechanical foam type (gas cartridge) (IS 10204)           | 3                         | 35                                     | 2.5                                |
| v)            | Mechanical foam type (stored pressure) (IS 15397)         | 3                         | 35                                     | 2.5                                |
| vi)           | Mechanical foam type (gas cartridge) (IS 13386)           | 3                         | 35                                     | 2.5                                |
| vii)          | Mechanical foam type (gas cartridge) 135 litre (IS 14951) | 3                         | 35                                     | 2.5                                |

| <i>Sl No.</i> | <i>Type of Extinguisher</i>                                  | <i>Test Interval Year</i> | <i>Test Pressure kg/cm<sup>2</sup></i> | <i>Pressure Maintained for min</i> |
|---------------|--------------------------------------------------------------|---------------------------|----------------------------------------|------------------------------------|
| viii)         | Dry powder ( stored pressure ) ( IS 13849)                   | 3                         | 35                                     | 2.5                                |
| ix)           | Carbon dioxide IS 2878                                       | 5                         | 250                                    | 2.5                                |
| x)            | Clean agent (IS 15683)                                       | 3                         | 35                                     | 2.5                                |
| xi)           | Dry powder (gas cartridge) ( IS 2171, IS 10658 and IS 11833) | 3                         | 35                                     | 2.5                                |

NOTE — Extinguisher's should be hydraulically tested with cap.

## PPE's Supply related to any Industry.

### **MLConsultancy PPE Suppliers:-**

MLC is the association for safety equipment and technologies – equipment and systems that enable people to work in hazardous environments. MLC has set the standard for personal protective technologies, supporting the interests of its member companies who are united in the goal of protecting the health and safety of people worldwide.

MLC is a recognized leader in the development of IS accredited safety equipment standards, in India. It works with government agencies to consult with policymakers whose decisions affect the industry. It is a forum for information sharing and industry action, providing market insight and advocating for the use of safety equipment to keep workers safe.

### **MLC PPE Suppliers Mission:**

To be the catalyst that ensures safety products are better, conforming, understandable, and used.

As an MLC member you:

- Have a seat at the table and a voice when standards are being set.
  - Have access to world-class training and education that differentiates you from your competitors helping increase your sales and market share.
  - Have an advocate in the halls of Government and places of power that impact your business
- Have a platform to engage and collaborate and network with your peers in a spirit of learning, understanding and best practices.

When it comes to safety products, MLC is where it all happens.

### **Types of PPE**



**Head Protection**

**Face Protection**

**Eye Protection**

**Ear Protection**



**Hand Protection**

**Fall Protection**

**Foot Protection**

**Body Protection**



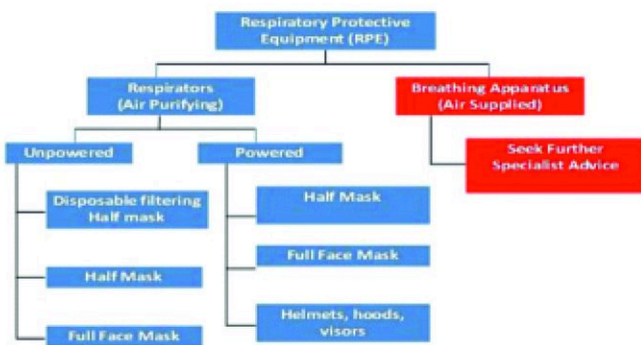
# MLC Respiratory & Emergency Protection Systems

Respiratory Protective Equipment (RPE) is a particular type of Personal Protective Equipment (PPE), used to protect the individual wearer against the inhalation of hazardous substances in the workplace air. RPE should only be used where adequate control of exposure cannot be achieved by other means, in other words, as a last resort within the hierarchy of control measures: Elimination, Substitution, Engineering Controls, Administrative Controls, PPE.

Employers are required to firstly attempt to eliminate the hazard at source. RPE should only be used after all other reasonably practicable control measures have been taken. PPE is considered a last resort because it only protects individual workers, is prone to failure or misuse, such as wearing the wrong RPE for the job, and employees wearing RPE may get a false sense of security when using RPE.

## Seven Elements of a Respiratory Programme

1. A written plan detailing how the programme is managed
2. A complete assessment and knowledge of respiratory hazards that will be encountered in the workplace
3. Procedures and equipment to control respiratory hazards, including the use of engineering controls and work practices designed to limit or reduce employee exposures to such hazards
4. Guidelines for the proper selection of appropriate respiratory protective equipment
5. An employee training program covering hazard recognition, the dangers associated with respiratory hazards, and proper care and use of respiratory protective equipment
6. Inspection, maintenance, and repair of respiratory protective equipment
7. Medical surveillance of employees, where necessary



## Disposable Respirators:



## Reusable Respirators



## Powered Air Purifying Respirators:



## SCBA & ELBA:



# **MLC QEHS Training Including Training Modules** **(Online & Classroom & Corporate).**

## **Types of Fire Alarm System: -**

MLC aim is to offer cutting-edge training and research services to public and private organizations in India. MLC EHS Training's delivers professional training and research programs that are varied in all topics including: - Quality, Environment, Health, Fire & Safety.

We deliver agency-specific training, career development programs, and customized consulting solutions to enrich learning and optimize individual, group and organizational performance.

**Note: For the Topics you can view our website.**

### **Key Goals of MLC QEHS Training's:**

1. Keep student more interested and interactive
2. Make learning enthusiastic and natural.
3. See to be more cooperative with instructor and student
4. Making concepts applicable in to real time
5. Flexible time slots for students
6. Attend through the Phone or PC



## **Supporting in conducting QEHS Studies.** **Safety Studies**

### **Fire Safety**

- Fire & Gas Detection Mapping Study
- Design Adequacy of Fire Protection System
- Business Process Re-Engineering
- Fire Load Calculations
- Fire Risk Assessment /Fire Safety Audit

### **Civil Safety**

- Building Structural Stability Study
- Building Risk Assessment – using Non-Destructive Testing
- PHSER Study
- Project Risk Assessment
- Construction Site Safety Audit

### **ELECTRICAL SAFETY**

- Arc Flash Study
- Lightning Risk Assessment and Design of Lightning Protection System
- Hazardous Area Classification (HAC) – ATEX Study
- Thermography
- Electrical Safety Audit
- E HAZOP
- Inspection of Flameproof Electrical Equipment's
- Static Electricity Study
- Energy Conservation Audit
- Electrical Thermography
- Mechanical Thermography
- Building Thermography
- Thermovision scanning in Cold Storage, Pharmaceuticals
- Medical Thermography
- Thermovision Scanning in Transmission lines
- Thermovision Scanning in Cement Boilers, refinery
- Thermography in Paper, Pulp, Printing, Packing
- Thermography in Hotel, food, beverage, Polymer, fiber, Glass, Milk dairy, Textile
- Power Quality services and Harmonic study
- Power Quality Analysis Audit Services
- Harmonic study
- Energy Audit
- Power Audit
- Power Factor Audit
- Transients Audit
- Load Flow Analysis
- Flicker Study
- UPS & Generator Study
- Earthing Audit and Insulation Resistance Measurement

### **PROCESS SAFETY**

- Chemical Compatibility Study
- Respiratory Fit Testing
- Personal Exposure Study/Workplace Monitoring Study /VOC Study/Chemical Exposure Monitoring Study (IDLH, STEL, TLV)
- Dust Explosion Study
- Dispersion Modeling (Flare, SRV, Dump tanks, Scrubbing Vent Hazards)
- Minimum Ignition Energy Study
- Minimum Ignition Temperature Study
- Bulk Chemical Storage Risk Assessment

## PROCESS SAFETY

- PSM Gap Analysis
- Process Safety Management (PSM) Implementation
- Quantitative Risk Assessment (QRA)
- Safety Integrity Level (SIL) Study/LOPA/Functional Safety
- Hazard Identification and Risk Assessment (HIRA) /HARA / HAZID Study
- Hazard & Operability Study (HAZOP)
- Pre-Startup Review
- Business Process Reengineering
- Business Continuity Plan
- Process Hazard Analysis (PHA Study)
- Job Safety Analysis

## OTHERS

- Human Factor Engineering and Ergonomic Studies
- Emergency Response Disaster Management Plan (ERDMP)
- Statutory Safety Audit/Comprehensive Safety Audit
- Preparation or Vetting of On-Site Emergency Plan
- Preparation or Vetting of Off-Site Emergency Plan
- Incident Investigation
- Pre-Occupancy Audit
- Behavior Based Safety / Safety Culture Survey
- Industrial Hygiene Monitoring Study
- Security Vulnerability Assessment (Security Audit)
- Machinery Risk Assessment
- Logistics Risk Assessment (inside or outside the plant truck movement)
- Marine Loss Minimization Study
- COPE and Probable Maximum Loss Study (PML) Study
- Inspection behalf of insurance & Brokerage firms (for under writing or value addition or safety improvement) Training

## POWER SYSTEM STUDIES

### Power System Study and Analysis

- Power system network modeling
- Load Flow Analysis
- Short Circuit Analysis
- Relay Coordination Analysis
- Arc Flash Analysis
- Power factor Improvement Analysis
- Unit Protection Review
- Reactive Power Compensation
- Cable Ampacity
- Transient Stability Analysis
- Motor Starting Analysis
- Harmonic Analysis

### Technical Audit

- Protection Audits
- Electrical Safety Audit
- Arc Flash Audit
- Earthing Assessment Audit
- Power Quality Audit / Harmonic measurements
- Root Cause Analysis Audit
- Thermography
- Lighting Assessment Audit

### Retrofitting Solutions

- Retrofit solutions of electromechanically relays to numerical relays
- Selection of relay make, type, details model as per application
- Revamping of Switchyard Control Panel, Generator Relay Panels, Switchgears
- Retrofit solutions for Circuit Breakers
- Retrofit solutions for Busbar

### Design Engineering

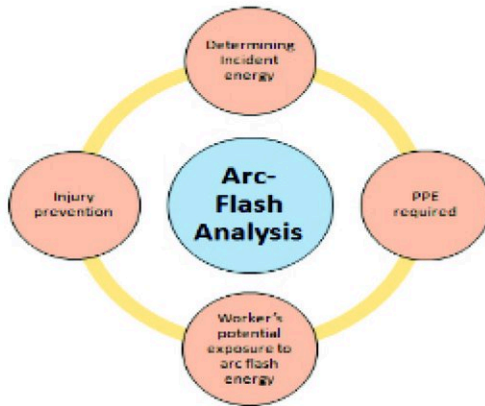
- Conceptual Engineering
- Basic Engineering
- Detail Engineering
- Preparation of Tender Specifications Documents
- Preparation of Design Basis
- Preparation of Load List
- Equipment Sizing Calculations viz. , Transformer, Cable, Switchgear, UPS, Earthing and Lightning
- Preparation of Electrical Layouts
- Technical Bid Evaluation
- Vendor Drawing Review

### Testing and Commissioning

- Testing of Protective Relay
- Commissioning support for Start up
- Routine Testing of Transformers
- Programming and Configuration of Numerical Relays
- Unit Protection scheme testing and Implementation
- Primary Injection Testing for CT
- Circuit Breaker Testing and Servicing
- Testing of Earth pits
- Complete Health Check-up and Maintenance of Indoor & Outdoor Switchgear Panels
- Auto Manual Changeover scheme testing

## What is Arc Flash Analysis?

An arc flash occurs when a fault in an electrical system results in a sudden discharge of energy, causing a sudden burst of heat and light. Arc Flash can disrupt power supplies, damage equipment and, most importantly, may cause serious injury and even fatality. A full arc flash assessment is the only reliable way to determine the possible risks and keep staff and equipment safe.

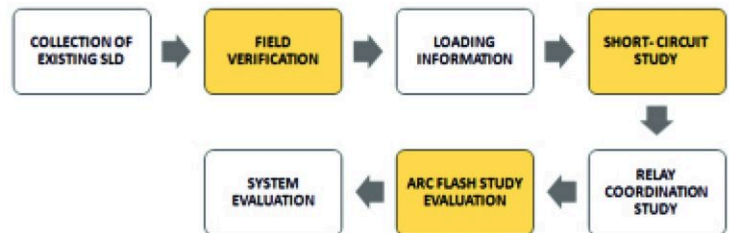


Working on energized system has become common place in continuous running process plant. Numerous works are injured while working on energized system. An Arc Flash Study aims to identify the risks and hazards associated with the possibility and severity of an arc flash occurrence. An arc flash can have a serious negative impact on a power system and pose serious health risks to personnel working in the vicinity. Hence, an arc flash study is an electrical engineering analysis of an electrical distribution system that determines incident energy at various location of electrical network, working distance, various arc flash boundaries, Personal Protective Equipment (PPE) required to carry etc.

## What causes arc faults?

Causes of arc faults include situations as simple as:

- Touching a test probe to the wrong surface
- Loose connections
- Improperly installed parts
- Dust
- Corrosion
- Insulation breakdown



## Why Is an Arc Flash Study Important?

The signification of arc flash event can be severe. Power outages may cause operational interruptions leading to loss of business, and damaged equipment can be expensive to repair or replace. Most importantly it causes serious risks to any workers in the vicinity and may result in serious injury or even death.

## What Steps Are Taken to Undertake an Arc Flash Study?

The general steps undertaken for any arc flash study generally involve:

- **Data Collection:** Collect necessary data about the facility's power distribution system, including transformers KVA and impedance, nameplate specifications, fuses, breakers, along with lengths and sizes of all cables.
- **Engineering Analysis of the Data:** To determine the available fault current at each location.
- **Protective Device Coordination:** To Determine selectivity and sensitivity of the protective device and to decide fault clearing time of Protective device.
- **Arc Flash Calculations:** To determine incident energy levels and flash protection boundaries and complete calculations of all relevant equipment based on IEEE-1584.
- **Arc Flash Study and Analysis Report:** Based on the calculations are completed a comprehensive report will be built based on the findings.
- **Label Creation:** Creation of warning labels showing incident energy and working distance, arc flash boundary, and nominal system voltage. Include Limited, Restricted approach boundaries, date, and recommended personal protection equipment (PPE).
- **Training:** Employees shall be trained to understand the specific electrical hazards associated with electrical system. Employee shall be trained in safety related work practices and procedural requirement to provide protection from electrical hazards associated with their respective task.
- **Review:** 5-year review. The incident energy analysis shall be updated when changes occur in the electrical distribution system that could affect the results of the analysis. The incident energy analysis shall also be reviewed for accuracy at intervals not to exceed 5 years.

## Industrial Hygiene Services

### Industrial Hygiene Program:

Development and implementation of a comprehensive program that ensures routine health hazard evaluation and control in your facility.

### Industrial Hygiene Risk Assessment:

Identification and assessment of health risks and control priorities. The end result is an inventory of health hazards in the workplace and their subsequent controls.

### Noise Monitoring and Control:

Evaluation of personal noise exposure and identification of areas of excessive noise in a facility. Data is used to develop or improve hearing conservation programs.

### Walkthrough Surveys

Walkthrough surveys help to identify unknown health hazards, initiating the process of evaluation and control.

### Ventilation Assessment

An assessment helps to ensure that the important engineering control is performing as expected to protect the health of employees.

### Indoor Air Quality Testing

Identification and resolution of indoor air quality issues.

### Ergonomics Assessment

Evaluation of workstations or tasks to identify ergonomic risks and provides solutions to reduce or control them.

### Asbestos Survey and Program

A survey identifies potential asbestos containing materials (ACM) in a facility. Consequent program development assists in managing ACM and personnel exposure.

### Exposure Monitoring and Assessment

Evaluate the extent of employee exposure to harmful substances such as benzene, toluene, ethyl benzene, xylene, crystalline silica, formaldehyde, welding fume, diesel exhaust, dusts, volatile organic compounds. This ensures compliance to regulatory occupational exposure limits (OEL) and allows employers to assess their existing controls and work practices.

## Industrial Hygiene & Safety Instruments

Air sampling pump & Calibrator



LUX Meter



PPE'S Fit Testing Kit



WBGT Meter



Combustible Gas Detector



Noise Dosimeter



Vibration Meter



Chair Less Chair



Weather Station



Air Particle Counter With Multiple Gas Detector



Sound Level Meter & Calibrator



Anemometer



4 in 1 Environmental Meter



Carbon Monoxide Meter



Multiple Gas Analyzer with Temperature & Humidity



## MLC PHARMA CLEAN ROOM EQUIPMENT'S

MLC Pharma Clean Room Equipment's is one of the leading Manufacturers & Exporters of various kinds of Pharmaceutical Machineries. We are specialized in Containment Equipment (Isolator, Glove box, LAF, Pass Box). We have been in the manufacture industry for the last 3 years and are pioneers for Containment equipment in India. Our company is ISO 9001:2000 certified. Recently, we have started manufacturing Injectable & Packaging Machinery like Pre-fill Syringe machine, Plunger rod inserting, back stop ring and labeling machine, Filling, Sealing, Inspection, Labeling, and Conveyers.

We are in the business of manufacture industry since last 3 years. We are pioneer for Containment equipment's in India.



**Positive Isolator**



**Negative Isolator**



**Dust Collector**



**Laminar Air Flow**



**Flexible Isolators**



**Vibro Sifter Machine**



**Multi Mill Machine**



**Vaccum Tray Dryer**



**Pressure Vessels**

## Conveyor



## Packing Conveyor



## Other Clean Room Accessories



## OTHER SERVICES

1. ESG End to End Solution
2. Supplier Qualification Audit
3. HAZOP Study
4. HAC (Hazardous Area Classification) Services
5. EHS Software
6. IGBC Certification
7. ETP Plant Setup
8. Reactors Supply
9. LOTO Services
10. 5 'S' Implementation

## STATUTORY COMPLIANCE

1. Commercial Compliance
2. Electrical Approvals
3. Environmental Compliance
4. Factory Compliance
5. Fire Compliance
6. Labor Compliance
7. S & E Compliance
8. Vendor Auditing
9. Pharma Compliance
10. Green Building

## Supporting in investigations related to any type of Incidents.

**Why Conduct Incident Investigations?** Here are some other reasons why an incident investigation might benefit your business and protect you from risks in the future:

- It helps you find the root cause of incidents, which helps you create an action plan to prevent the same and similar incidents from happening again.
- It helps you find gaps in any measures you have already taken to control risks to your business.
- It would also bring out any flaws in your health and safety compliance that you may have not known about, enabling you to fix them.
- In case of workers' compensation or any other insurance claim, insurers might require you to present the findings of your investigation.
- In case of any legal liabilities or claims, an incident investigation would demonstrate that you have been proactive in exploring why an incident may have occurred and in taking steps to prevent future incidents. This shows a positive attitude towards occupational safety and health, which would benefit you in any court hearings.

Apart from these important reasons, conducting a thorough investigation into incidents and even near misses also shows your employees and clients that you're committed to ensuring health and safety in your worksite, increasing employee morale.

### 6 Steps of an Incident Investigation Process

An effective incident investigation involves six main steps, which are described in detail below:

1. Secure the Scene
2. Plan the Investigation
3. Collect All Relevant Information
4. Analyze Collected Data to Find the Root Cause
5. Implement Corrective Actions
6. Document and Share the Results

**Note: For the detailed Investigation process of MLC you can visit our Website**

