

# International Journal of Institution of Safety Engineers (India) IJISEI

Volume 4, Issue 4, October-December 21

Published by ZJEW Trust, in association with Institution of Safety Engineers (India) (Govt. Reg. No. 5240)

Available online at www.ijournal.iseindia.in www.iseindia.in

IJISEI

Plan Prevent Protect

PORT OF THE PROPERTY OF THE PR

IJISE

Plan Prevent Protect

International Journal of Institution of Safety Engineers (India)

IJISEI

Available online www.ijourna.iseindia.in

JISE



LIISE

International Journal of Institution of Safety Engineers (India) is Published by ZeenatJhan Educational and Welfare Trust (ZJEWT) in association with its unit Institution of Safety Engineers (India). ZJEWT is Non-Profitable organisation established in year 2012, Govt. Reg. No. 5240 and publishing online Journal since 2018 on name of International Journal of Institution of Safety Engineers (India). Journal publishing in four Issue in every year i.e one issue in every three month. International Journal of Institution of Safety Engineers (India) is also known as IJISEI in short form.

JISE

LJISE

Objective to publish this Journal is to share information, knowledge among researcher, Professional and organization. Such Journal helps to grow their professional carrier, used for research purpose. Safety, Health & Environment related Journal is very helpful for professional, Institutional, organizational to learn and implement effective system to Prevent Accident, Protect environment and minimize losses during Disaster.



Alexent Accident, Aroseg

International Journal of Institution of Safety Engineers (India)



News & Journal Published by ZJEWT in association with Institution of Safety Engineers (India), Govt. Reg. No. 5240 Volume 4, Issue 4, October-December 21 Available online at www.ijournal.iseindiain

### International Journal of Institution of Safety Engineers (India) (IJISEI)

Plan Prevent Protect Volume 4, Issue 4, October-December 21; Available online atwww.ijournal.iseindifferent Protect www.iseindia.in



### **Institution of Safety Engineers (India)**

"Aim to prevent Accident, Protect Environment & Minimises Losses during disaster"

### www.iseindia.in



**About us:** Institution of Safety Engineers (India) is Non - Profitable organization set up in year 2012 under ZJEW Trust, Govt. Reg. No. 5240 and working with objective to prevent accident, protect environment & minimize losses during disaster. Institution of safety engineers (India) imparting safety, health, environment & quality related training to needy & provide similar services to industries, organization, institution to achieve zero harm.



### **TRAINING & SERVICES**



## **EHSQ Taining & Services Conducted**

by Institution of Safety Engineers (India)

### Lead auditor & Short Term Training

### Lead Auditor Training

- > ISO 45001:2018 (OHSMS)
- ➤ ISO 9001:2015 (QMS)
- ISO 14001:2015 (EMS)

### Diploma/ Certificate course

- Safety Mgt.,
- > Fire Safety.
- ➤ Industrial Safety & Fire
- > EHS Mgt.
- Quality Mgt.
- HIRA, HAZOP, BBS, EIA etc.

### International certification course

- ISE-ICCOHSEM (International Certificate Course in Occupational Health Safety & Environmental Mgt.)
- ISE-ICCOHSEM (International Certificate Course in Occupational Health Safety & Environmental Mgt.)
- ➤ ISE-IDOHSEM (International Diploma in Occupational Health Safety & Environmental Mgt.)
- ➤ ISE-SM (Safety Management At workplace)
- ➤ ISE-TQM (Total Quality Mgt.)
- ➤ ISE-EM (Environmental Mgt. at work place)

### **Membership Services**

Join Membership & Entitle with your name as SMISE/MISE/JMISE/CMISE





### Journal Publication

Publish Journal Quartely online on name of IJISEI.

For more Details Visit

www.iseindia.in www.ijournal.iseindia.in



### Safety, Health, Environment Related Training & Services

- Services for Safety Audit, Fire Safety Survey, Lighting Arrestor Survey, Road Safety Audit, HAZOP study, HIRA, EIA, DMP, EMP, EC, Environmental Monitoring etc.
- Consultation Services for EHSQ system implementation as per ISEI standard & Guidelines etc.
- Valuer, Loss Assessor Services etc.

### Services for ISO Consultancy, Auditing & Certification





ISE (I) Award: Reward to Company, Institution, Professional & Author for their outstanding Contribution in field of Safety, Health, Environment & Quality.



For details information visit www.iseindia.in



# International Journal of Institution of Safety Engineers (India) (IJISEI)

Volume 4, Issue 4, October-December 21; Available online at www.ijournal.iseindixinProtect
www.iseindia.in

### This Issue Journal Include:

- IJISEI-V4-I3
   Application of PDCA Cycle in Safety Management System
- IJISEI-V4-I3 <sup>2</sup> Welding Job Safety
- IJISEI-V4-I3 <sup>3</sup> study of Air quality & its Effect of air quality
- IJISEI-V4-I3
   Hierarchy of Hazard/ Risk Control
- IJISEI-V4-I3 <sup>5</sup> Radiation Safety Basic
- IJISEI-V4-I3 <sup>6</sup>Electrical Safety on Job Site
- IJISEI-V4-I3 <sup>7</sup>Steps To machine Safety
- IJISEI-V4-I3 <sup>8</sup>Conveyor Belt Safety





International Journal of Institution of Safety Engineers (India)





News & Journal Published by ZJEWT in association with Institution of Safety Engineers (India), Govt. Reg. No. 5240
Volume 4, Issue 4, October-December 21

Available online at www.ijournal.iseindiaan

### Safety Activity Conducted during 4th Quarter 2021





Plan Prevent Protect







THE SESSOL BELLEVILLE

Plan Prevent Protect

### Application of PDCA Cycle in Safety Management System

Plan Prevent Protect

### TAMANNA AFROZ

Dy. Director (General, Admin. & IT), Institution of Safety Engineers (India) Email id:

Tamanna@iseindia.in

#### **ABSTRACT**

PDCA Cycle is very effective approach that use in management system to get organizational goal. PDCA means Plan, Do, Check, Act and such method is effective to apply in Quality management System, Safety Management System and Other field of management system. This help to identify organization objective, method and resources require for achieving such objective, fulfill compliance obligation and several parameters are to be decided to run organization smoothly and safely for success business. In this Paper PDCA cycle will link with Safety Management System that help to control organizational harm and fulfill Safety related code, Standard & Practices. This Article is very helpful to know effective parameter that will cover under PDCA cycle to control work place risk.

**Keyword:** PDCA, Plan, Do, Check, Act, PDCA approach, Safety Management system (SMS), Risk Control

### **OBJECTIVE:**

This Article is very help to understand application of PDCA cycle in Safety Management system and control work place risk. PDCA approach will help to identify objective, plan to achieve objective, checking & taking needful action for improvement.

### 1. INTRODUCTION

Now a day every organization seeks & applies effective approach to grow their business and organization success. To Success of any organization, several factors require in which one major factor is Safety Management System. Safety Management is effective approach that use to control organization risk in term of prevent to injury, Protect to environment or get protection from any untoward happening. Policy, Planning, Implementations & Operation, Checking & Corrective action and Continual improvement are element of Safety Management System (SMS). These all elements can be align with PDCA cycle to understand easily and implement to Safety Management system in organization effectively. Effective Safety Management System will help to Control potential sources

of harm or situation of organization. Under PDCA approach all element of Safety Management system will be align and sub element of SMS will be decided for understanding effectiveness of such approach.

PDCA help to understand the steps of element of Safety Management system that apply to control organization risk. Effective ways to apply this approach are easy and this can be easily implemented.

### 2. PDCA Cycle:

The Plan, Do, Check, Act approach maintain a balance between the systems and Risk aspect of behaviour of organization people. It interacts and show that health and safety management is an integral part of effective management to control work place Risk.

1Plan: Determine to Safety Policy including Plan for implementation

**2Do:**Profile risks & delegate role and responsibility to implement plan

**3Check:** Measure to organization safety performance (Apply proactive & Reactive approach to control risk)

**4Act:**Review Safety performance, Take needful action on based on finding & Act on lessons Learned





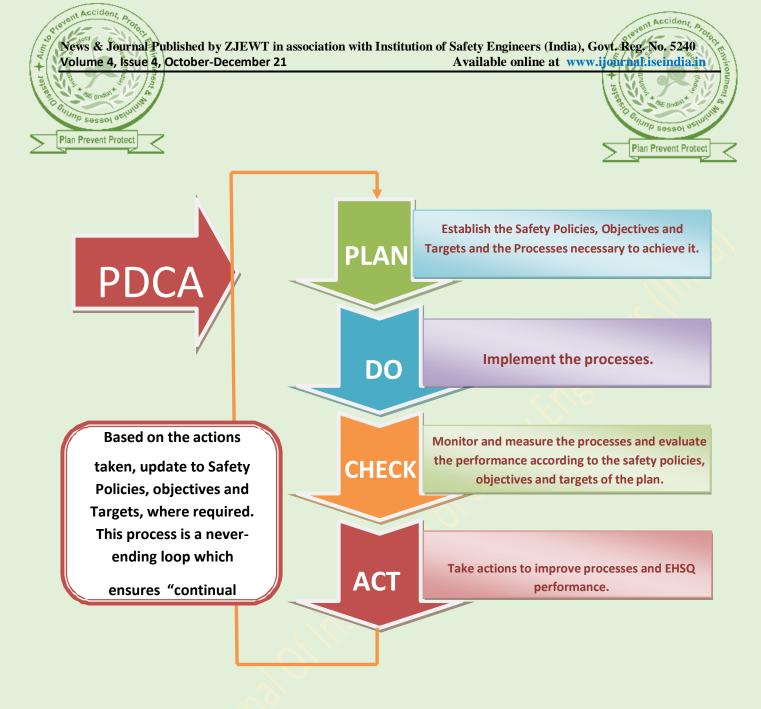


Fig. 1, PDCA Approach





Fig. 2, PDCA Cycle

### 3. Effective Method to apply PDCA Approach

Zero Or less harm in any Organisation can be achieved through below steps:

- Understand to organization, Develop Safety Policy, Decide objective, identify Plan and ensure effective way to achieve such Objective
- Implement to Planned activity including Policy, Procedures, Norms & Codes.
- Check regularly to Implemented Safety management system (SMS) to find status of compliance, Investigate to incident
- Act needful action on based of finding to ensure adequate control measure i.e compliance of Non-Conformance.





PDCA is known as Plan Do Check Act Approach and this is also known as name of PDCA cycle. PDCA Cycle has application in different management system including Safety Management System. This approach gives basic idea and concept to understand parameters of Safety Management system that use to prevent accident and control work place risk. This Approach should be apply in every process of organization to control risk upto tolerable level. Effective Approach will help to control organization harm, Increase organisation reputation and increase profitability. Poor Approach results ineffective implementation of Safety management system and latter this results Accident. This is suitable and easy approach that can be understood by any one and they can apply to this approach in organisation. If all concerns employee will apply this approach then such group effort will be lead to accident free to organization. This Approach is completely based on Practical and practical approach is effective way to decide organization risk, Plan to activity to control such risk, checking to compliance of applicable items and taking needful action on based on review for improvements.

#### References

- ISEI Manual
- IS 18001, ISO 45001:2018
- Safety Management system (SMS) in Construction industries S. RAMPURI, Volume 1, Issue
   1, Jan-Mar. 18, Page 01-06, www.ijournal.iseindia.in
- Need of Behaviour Based Safety in Industries Mr. Alok Pathak, Volume 2, Issue 2, Apr-June
   19, Page 01-05 www.ijournal.iseindia.in
- Google





### <sup>2</sup>Welding Job Safety

### Aftab Alam,

Safety Professional- Volta Limited

Email id: aftabalam@outlook.com



### **ABSTRACT**

Welding is important process used to join two or more metal pieces. In welding several risk associated in which one is concern with safety. Inadequate safety measure always results accident in term of Fatality or injury or fire. This study is carried out to find gaps during welding job that results harm. Sample collected from few industries to know existing measure and gaps. This study is helpful to control risk related to welding job and ensure safety of people.

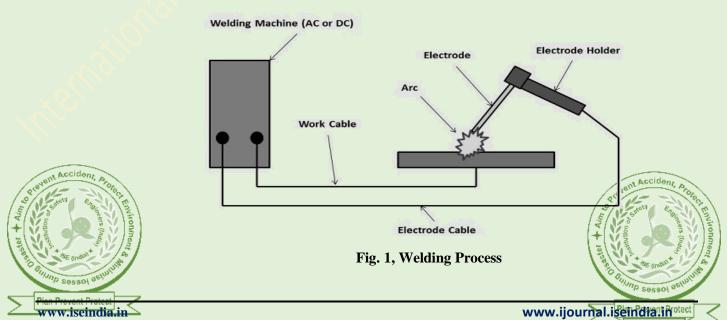
Keyword: Welding Job Safety, Risk Control, Electric shock prevention

### **OBJECTIVE:**

Objective To write &Publish this paper is to know Risk associated with welding Job and control up to tolerable level to avoid any accident, increase employee morale, increase profitability & organization performance in market.

#### 1. INTRODUCTION

Welding is important process use in any organization to join two or more metal pieces or materials. Several factor need to consider for effective welding & complete Task. Safety related risk is also a factor that always require. In simple welding is defined as Joining two or more pieces of metal together by softening with heat and applying pressure. Spot welding, metal inert gas (MIG), Tungsten inert gas, gas metal arc welding, arc welding, and gas welding are few example of welding. Risk varies as per nature of welding job. Different Joints applied as per application (Fig. 2)



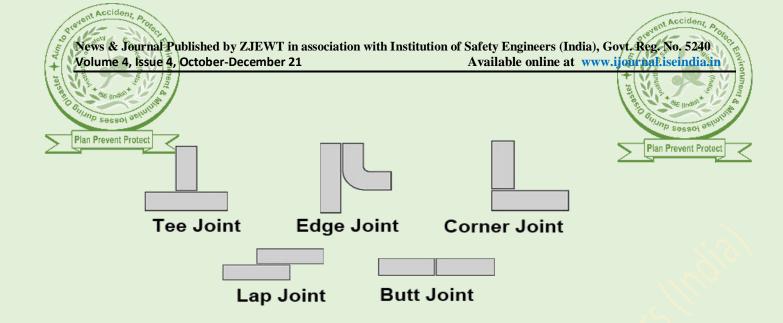
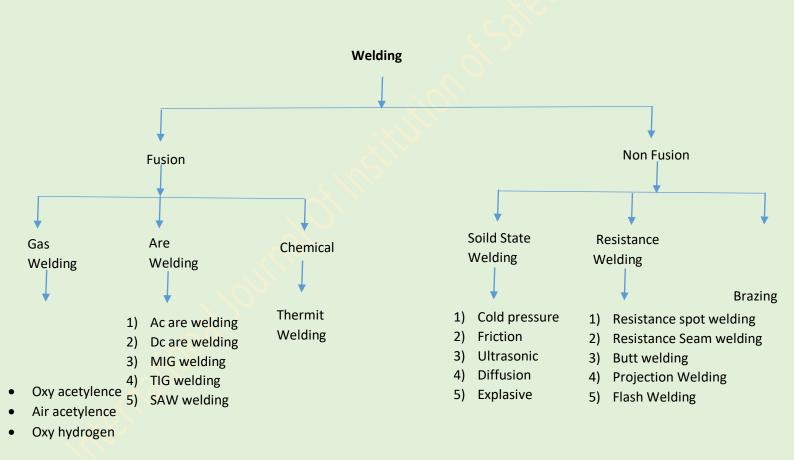
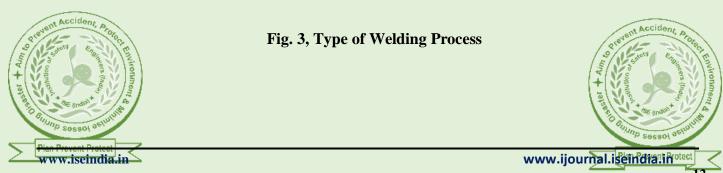


Fig. 2, Types of Joint





### 3. Hazard & Risk control

In welding job hazard varies activities to activities, location where work is running. Hazard means such potential sources that results accident.

### 3.1 Hazard associated with welding Job:

- Electrocution, Person may sustain electrical shock due to defective welding cable, electrode holder & in wet condition.
- Fire & explosion, Leakage in cutting set, Gas cutting job near Flammable material, Non return
  valve not used in cutting set, Gas cylinder kept in direct sunlight area or near ignition sources,
  Gas cylinder used as roller for shifting from one place to other or welding job near flammable
  material.
- UV radiation exposure: Emission of radiation during welding job.
- Fumes & Gases: Exposure and inhalation of fumes & gases that emit during welding job.
- Sparking: it may cause burn injury or fire.
- Fall: Person may fall during working at height when sustained electrical shock



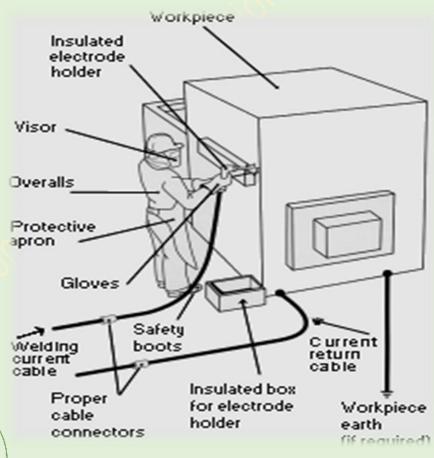
Fig. 4, Welding Activity

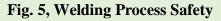




### 3.2 Safety Control measure:

- Plan Prevent Protect Power rooted through ELCB of 30 mA sensitivity or below.
  - No welding activity in wet condition.
  - Replaced all welding lead spliced within 10 feet of holder.
  - Work piece shall be clamped not hold with hand.
  - Ensure suitable body earthing.
  - Avoid loose connection & joints.
  - Welding cable, Holder in good working condition
  - Avoid welding job near Flammable/combustible material.
  - Use Fire retardant cloth for preventing welding spatter falling.
  - Wear suitable PPEs like Apron, welding shield, leather glove.
  - Always take adequate measure as per Job
  - In case gas welding, Keep gas cylinder in upright position, secure to cylinder, Check leak before starting job, Ensure NRV, Protect to gas cylinder from Direct sunlight or heat sources.





Mnp sessol

Plan Prevent Protect

News & Journal Published by ZJEWT in association with Institution of Safety Engineers (India), Goyt. Reg. No. 5240
Volume 4, Issue 4, October-December 21

Available online at <a href="https://www.ijournal.iseindia.in">www.ijournal.iseindia.in</a>

### 4. Conclusion:

Welding is important process that use every where. Industries are main origin where welding job used. Welding has variety of application. Several risk is associated with welding machine and this results accident if not take adequate measure. Electrocution, Fire, Burn injury, smoke & fumes emission, UV radiation are few types of hazard associated with welding job. Such Hazard can be control through take needful action. Always use standard and suitable welding machine and its associated equipments, Ensure body earthing, use suitable personnel Protective equipment, workers must be trained, avoid welding job near flammable material, power routed through ELCB of 30mA or less for welding machine and other applicable safety measure must be ensure.

### **References:**

No any reference





### STUDY OF AIR QUALITY & ITS EFFECT

### Shahnawaz Rampuri

Plan Prevent Protect

Research Scholar (PhD), Arunodya University Arunachal Pardesh

Email id: shahnawaz.rampuri2@gmail.com

### **ABSTRACT**

Plan Prevent Protect

Air quality is important parameter of environment that can effect to life of human and other living thing. Effect of air quality can be Positive or negative. Positive effect is results of pure air quality and it means Air is free from any harmful impurities or substance. Negative effect results from poor air quality and harmful for environment including human. Purpose to conduct this study is know the status of Air in different region of India, Causes of Poor Air quality & effective measure to control to pollution and ensure suitable Air quality. In this study, Indoor & outdoor air quality has been also covered to know its impacts and basically focus to poor air quality.

**Keyword:** Air Quality, Health effect of Air Quality, Preventive measure, PM10, PM2.5, Pollutants, AQI

### **OBJECTIVE:**

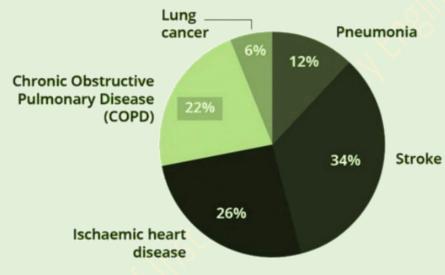
- To know the benefit of good Air quality
- To know impacts of Air quality
- Identification of Air quality status
- Risk minimization method
- Saving Living & human health

#### 1. INTRODUCTION

Suitable Air Quality is very important to keep Safe to environment including Human. Human breathe air and remove Carbon mono-oxide. During breathing two processes occur inhalation & exhalation. Air enters in lungs during breathing, oxygen move from lungs to blood and carbon mono oxide and other waste gases move from blood to lungs and exhaled. Poor air quality always effect to human. They enter in body through inhalation and effect to respirator system and other organ. Exposure of Poor Air quality through inhalation and effect may be Acute or Chronic effect. Acute means person exposed within very short time from Poor Air quality and chronic effect means person has exposed in

of fossil fuels by industrial plants and vehicles. This releases carbon monoxide (CO), sulfur dioxide (SO2), particulate matter (PM), nitrogen oxides (NOx), Sulphur Oxide (SOx), hydrocarbons and other pollutants. AQI is categorise in different country from different way. In United State AQI runs from 0-500, India AQI runs from 0-500. Higher the AQI value then pollution level will be high and this will major concern of heath. On based of AQI value air quality is to be decide.

## **Indoor Air Pollution**



people a year die prematurely globally from illness attributable to the household air pollution caused by the inefficient use of solid fuels for cooking.

Fig. 1, indoor Air pollution consequence, Sources 2012 data WHO

### 2. AQI range & Category

There are six categories of AQI, namely Good, Satisfactory, Moderately polluted, Poor, Very Poor, and Severe. In AQI, Eight pollutants PM10, PM2.5, NO2, SO2, CO, O3, NH3, and Pb has been considered basically for which short term upto average 24-hourly period as per National Ambient Air Quality Standards (NAAQS)



News & Journal Published by ZJEWT in association with Institution of Safety Engineers (India), Goyt. Reg. No. 5240
Volume 4, Issue 4, October-December 21

Available online at <a href="https://www.ijenthaliseindiain">www.ijenthaliseindiain</a>

 Table 1, AQT Range & Category

|   | AQI       | Air quality Type    | Associated Health Impacts   |
|---|-----------|---------------------|---|
| - | 0–50      | Good                | No any health impacts   |
|   | 51–100    | Satisfactory        | Minor breathing discomfort to unhealthy people in few cases   |
|   | 101–200   | Moderately polluted | Breathing discomfort to respiratory illness people, discomfort heart disease people, children and older adults. |
|   | 201–300   | Poor                | Breathing discomfort due to prolonged exposure, discomfort to heart disease person                              |
|   | 301–400   | Very Poor           | Respiratory illness due to long term exposure, Breathing difficulties to heart diseases person                  |
|   | (401-500) | Severe              | Respiratory illness, Serious health impacts   |

Sources: CPCB'

Table 2, AQI Category, Pollutants and Health Breakpoints

| AQI Category, Pollutants and Health Breakpoints |                        |                         |                          |                        |                       |                          |                          |             |
|---|------------------------|-------------------------|--------------------------|------------------------|-----------------------|--------------------------|--------------------------|-------------|
| AQI<br>Category<br>(Range)                      | PM <sub>10</sub> 24-hr | PM <sub>2.5</sub> 24-hr | NO <sub>2</sub><br>24-hr | O <sub>3</sub><br>8-hr | CO<br>8-hr<br>(mg/m³) | SO <sub>2</sub><br>24-hr | NH <sub>3</sub><br>24-hr | Pb<br>24-hr |
| Good (0-50)                                     | 0-50                   | 0-30                    | 0-40                     | 0-50                   | 0-1.0                 | 0-40                     | 0-200                    | 0-0.5       |
| Satisfactory (51-100)                           | 51-100                 | 31-60                   | 41-80                    | 51-100                 | 1.1-2.0               | 41-80                    | 201-<br>400              | 0.5 –1.0    |
| Moderately polluted (101-200)                   | 101-250                | 61-90                   | 81-180                   | 101-<br>168            | 2.1- 10               | 81-380                   | 401-<br>800              | 1.1-2.0     |
| Poor (201-300)                                  | 251-350                | 91-120                  | 181-<br>280              | 169-<br>208            | 10-17                 | 381-800                  | 801-<br>1200             | 2.1-3.0     |
| Very poor (301-400)                             | 351-430                | 121-<br>250             | 281-<br>400              | 209-<br>748            | 17-34                 | 801-1600                 | 1200-<br>1800            | 3.1-3.5     |
| Severe (401-500)                                | 430 +                  | 250+                    | 400+                     | 748+                   | 34+                   | 1600+                    | 1800+                    | 3.5+        |

**Sources: CPCB's** 

Data collected from different region of India from different sources for study to know Air quality status. Majority of city of India found AQI is poor. Few details given in Fig 2

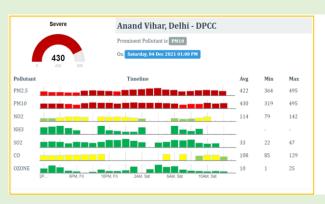
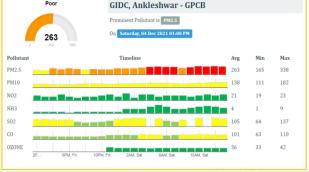




Fig. 2 (a)

Fig. 2 (b) GIDC, Ankleshwar - GPCB



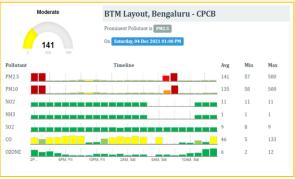
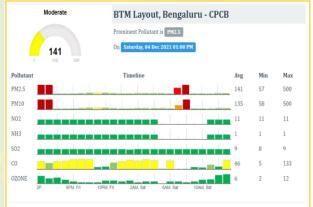


Fig. 2 (c) Fig. 2 (d)

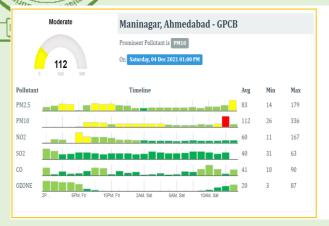




ww.iseindia.in

Fig. 2 (e)

Fig. 2 (f)



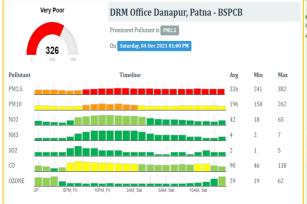


Fig. 2 (g) Fig. 2 (h)





Fig. 2 (i) Fig. 2 (j)

Fig. 2 – Sources: https://app.cpcbccr.com/AQI\_India/Dated 4 dec. 2021

### 4. Causes of Poor Air Quality

There may be several reasons to increase AQI

**The Burning of Fossil Fuels**: Burning of fossil fuels such as coal, oil, gasoline to produce energy release carbon monoxide in high level indicates how much fossil fuel is burned. This also emits other toxic pollutants in the air. Such pollutants effect to air quality.

Industrial Emission: Industries is also source of emission of pollutant such as PM, SOx, NOx, CO & other Pollutants. Such pollutant mix with air and effect to quality

**Poor waste management:** Waste generated from municipal, rural area not dispose properly in many cases increase risk of Poor air quality.

Transportation: Transportation is also major factor to increase AQI. Vehicle emits carbon monoxide, hydrocarbons, nitrogen oxide, and particulate matter. Such pollutants mix in air and pollute them

**Open Burning & Wildfires:** Open Burning emits toxic gases that pollute to environment. Wildfire results PM2.5 in air. It emits chemical gas, smog.

**Construction Work:** Construction activities also increase AIR. Different Pollutants emits and mix in air and pollute them

Microbial decaying process release CO, Hydrocarbons and other Pollutant. Poor method to use of hazardous Chemical, hazardous agents generate during agriculture activities are several reason to increase AQI.

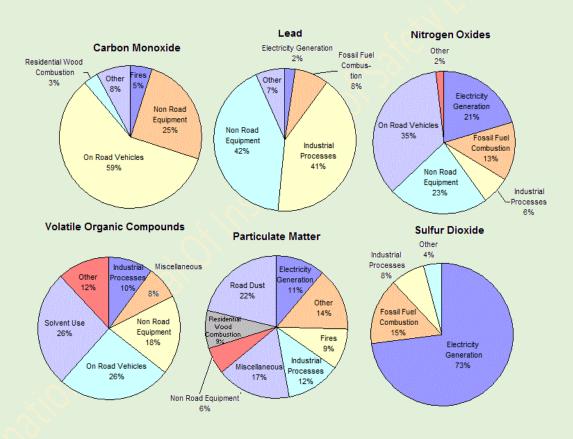


Fig. 3 Sources of Air Pollution, http://www.epa.gov/air/emissions/index.htm



### \* Lase How to know that Air Quality is Poor;

Government has made several station to measure the quality of air to know and aware to us.

This can be also measure through AQI digital meter. Different Software available with play store of mobile and this can be downloaded and measure level of pollution. Mobile Software is also economic tools to know the quality of Air.



Fig. 4, Air Quality Monitor/Detector

### 2. How Poor Air quality effect to human:

Poor air quality exposed to person. This effect to respiratory system illness. Inhalation is main route of exposure of poor air quality. Poor Air Quality expose to eye, Nose, Throat and effect to respiratory system. Effect of respiratory system may be cough, wheezing, shortness of breath, tightness of chest, chest pain, Asthma. Air quality also effect to cardiovascular system. Long Time exposure of Poor Air Quality results serious health issue. Poor quality of air effect to human and other living thing.

Health effect depends on AQI, Duration of exposure, available safety measure & person body susceptibility.

#### 3. How to ensure good Air quality:

- Avoid to use bike, car like vehicle & use Public Transport
- Control Pollutant from source
- Effective waste management must be ensure
- Effective enforcement of Rules
- Dust control during construction activities.
- Impact Assessment & mitigation for construction or any industrial activity must be ensure.
- Avoid to use Fire cracker
  - Increase awareness level among employees

Water sprinkling on dust generation area

Control to forest fire, Plantation, Control emission of pollutant from industries, Avoid open burning of any material must be control to ensure good air quality.

### 4. Conclusion:

Air quality is important parameter to know the status of Air quality. PM10, PM2.5, CO, SOx, NOx like pollutants considered under AQI. AQI range in india is 0-500. 0-50 range is good air quality. Poor air quality always effect to human. To improve air quality always nee to Pollutants that emits from industries, avoid to burning of materials, use less transport, control to construction activity to control dust emission and there are several method to prevent to pollution and increase Air quality status. Basically Poor Air quality exposed to personnel through inhalation and effect to respiratory illness. Long term exposure may be cause of serious injury.

### References

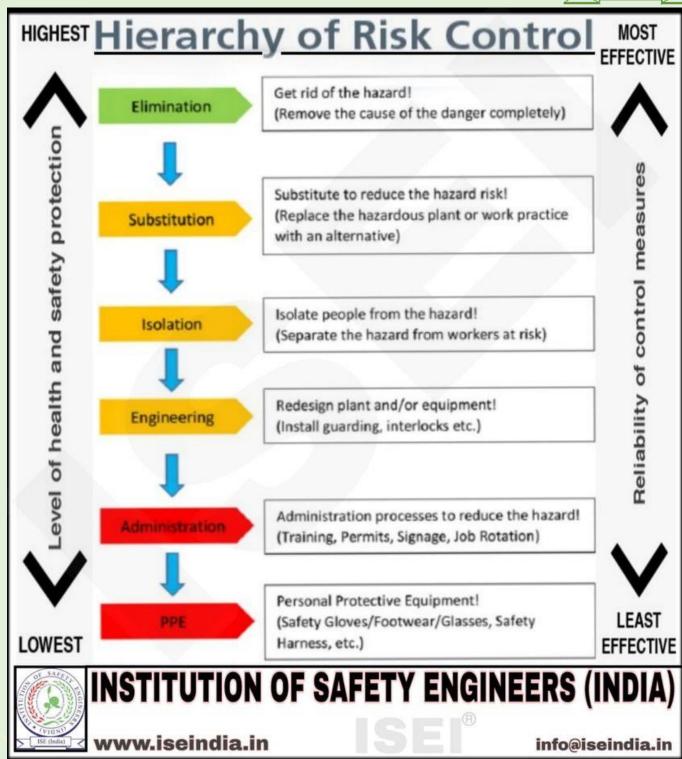
- Sharma, M., Maheswari, M., Sengupta, B., Shukla, B.P., 2003. Design of a website for dissemination of an air quality index in India. Environmental Modelling & software 18, 405-411.
- APHA (American Public Health Association) 1977. Standard methods of air sampling and analysis "Second Edition" Morris Katz. APHA Inter society committee, Eighteenth street NW, Washington D.C.20036.
- CPCB (Central pollution Control Board), 2000. Air quality status and trends in India.
- Goyal.P.2001, Flexibility in Estimating Air Quality Index; A case study of Delhi. Global Journal of Flexible Systems Management July -Sept, 2001
- ISO 14001:2015
- ISEI Manual





### <sup>4</sup>HIERARCHY OF HAZARD CONTROL/RISK CONTROL







Plan Prevent Protect



### <sup>5</sup> RADIATION SAFETY

Plan Prevent Protect

A.

N.

### RADIATION SAFETY

Radiation safety aims is to reduce unnecessary radiation exposure with a goal to minimize the harmful effects of radiation.

Radiation is the emission or transmission of energy in the form of waves or particles through space or through a medium. Ionising Radiation and Non-ionising Radiation are Types of Radiation. Ionizing radiation includes Alpha, beta, and neutron particles, and gamma and X-rays Non-ionizing radiation includes the spectrum of ultraviolet (UV), visible light, infrared (IR), microwave (MW), radio frequency (RF), and extremely low frequency (ELF)

### Routes of Entry/Exposure:

Inhalation

Plan Prevent Protect

N.

N.

N.

A.

A.

h.

L

N.

N.

K

k.

110

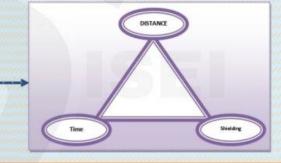
- Ingestion
- Injection
- Absorption

#### Health Effects of Ionisation Radiation:

- Reddening of the skin (Erythema), Blistering and Ulceration
- Cataracts
- Radiation Sickness i.e. Nausea, vomiting, diarrhoea
- Hair loss
- Cell damage (genetic mutation)
- Sterility
- · Leukaemia (white blood cells count abnormal)
- Carcinoma, Convulsions, Death



Radiological Protection Triangle: Reduce Time, Increase distance & ensure shielding will reduce the exposure of Radiation.



### SAFETY CONTROL MEASURE

- Segregate, Enclosure, Shielding, Maintain Distance & Reduce exposure time.
- Use suitable PPE's
- For radiation sources, ensure compliance of sources certificate & source Transfer certificate issue by the respective Govt. authority.
- · Awareness, Training & radiation safety Signage
- Additional Permission from respective authority, if require
- Safe & effective method of Storage (source pits) & Handling
- Hazard identification, Risk Assessment (HIRA) & Risk Control
- · Trained & Certified Radiation Technician
- Ensure all adequate Safety measure to prevent exposure of radiation

## INSTITUTION OF SAFETY ENGINEERS (INDIA

www.iseindia.in

info@iseindia.in

### <sup>6</sup>ELECTRICAL SAFETY ON JOB SITE



## Electrical Safety on the Job Site 11 Ways to Build it Safe.

### Everyone on the job site is at risk.

Electrical currents can cause shocks, fires, explosions, burns, falls which can be fatal or cause serious injury. Most electrical accidents result from one of the following three factors:

- unsafe equipment or installation,
- = unsafe environment, or
- unsafe work practices.



Electrocution is the 3rd leading cause of worker-related death for construction workers.

Gunnp Sessol

Plan Prevent Protect

### **Controlling Top Hazards**

Check your extension cords and plugs—a torn jacket, exposed wire at the plug or missing a "ground" pin are quick checks to ensure that the cord is in good working condition.

Do not overload circuits.

Test your Ground Fault Circuit Interrupter (GFCI) outlet to ensure its proper operation with an approved tester.



Extension cords should be placed where they will not get damaged.

De-energize circuits.
Use effective lockout—tagout procedures.



Test all circuits

to ensure the absence of voltage with the proper meter. Temporary lighting should be elevated and include protective cages around the bulbs.

Stay dry.
Wet conditions – standing in water, wearing wet clothing, working in high humidity, and perspiring can increase electrocution risk.

Stay clear of overhead wires.

Check your

tools for

damaged

ground pin

or exposed

cord, missing

wires.

Close electrical panels – never leave an open panel so that unqualified persons have access.

INSTITUTION OF SAFETY ENGINEERS (INDIA)

www.iseindia.in | info@iseindia.in



A Auguntum Sessol segmination of the Augustum Sesso

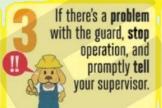


<sup>7</sup>STEPS TO MACHINE SAFETY

# STEPS TO MACHINE SAFETY





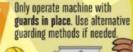








needed, shut down, lockout and keep a safe distance away.















# INSTITUTION OF SAFETY ENGINEERS

www.iseindia.in (INDIA)

info@iseindia.in





<sup>8</sup>Conveyor Belt Safety

Plan I

ent Protect

## Conveyor Belt Safety





Do Not Climb, Sit, Stand, Walk, Ride, or Touch the Conveyor at Any Time



Do Not Perform Maintenance on Conveyor Until Electrical, Air, Hydraulic and Gravity Energy Sources Have Been Locked Out and Blocked



Operate Equipment Only With All Approved Covers and Guards in Place



Do Not Load a Stopped Conveyor or Overload a Running Conveyor



Ensure That All Personnel Are Clear of Equipment Before Starting



Allow Only Authorized Personnel To Operate or Maintain Material Handling Equipment



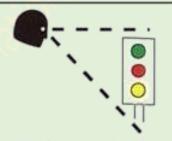
Do Not Modify or Misuse Conveyor Controls



Keep Clothing, Body Parts and Hair Away from Conveyors



Remove Trash, Paperwork and Other Debris Only When Power is Locked Out



Ensure That ALL Controls and Pull Cords are Visible and Accessible



Know the Location and Function of All Stop and Start Controls



Report All Unsafe Conditions

Institution of Safety Engineers (India)

www.iseindia.in







Available online at www.ijournal.iseindiain

### RNSN SERIATE (P) LIMITED

**About Us:** RNSN Seriate (P) Limited is private company limited by share. RNSN Seriate (P) Limited is Engineering, Procurement, Construction, Manpower supply & multi solution Engineering Company. RNSN Seriate (P) Limited is an ISO 9001:2015, ISO 14001:2015 & ISO 45001:2018 certified company. Corporate Identification No. (CIN) of RNSN Seriate (P) Limited is U93090CT2018PTC008917. RNSN Seriate (P) Limited also provides Consultancy, Chartered engineering, ISO Auditing & Certification Services.

RNSN Seriate (P) Limited vision is to deliver world class best services and Products to our customer as per their expectation.

Sustainability: For sustainable business, RNSN Seriate (P) limited is committed to fulfil Social, Economic & Environmental requirements and ensure compliance as per applicable law, norms & codes. RNSN Seriate (P) limited will take all necessary steps to achieve zero harm, save natural resources and protect to environment.





w.iseindia.ir

For any information/ query call +91-7509487141 Or mail Info@rnsnseriate.com For more details visit www.rnsnseriate.com



### TRAINING CALENDER

|   | Training Calendar (January- March 2021)   |                                   |                                      |                   |  |  |  |  |
|---|---|-----------------------------------|--------------------------------------|-------------------|--|--|--|--|
| , | Plan Prevent Protect Training Title/ Course   | Duration                          | Schedule                             | Location          | Plan Remārks   |  |  |  |
|   | Lead Auditor ISO 14001:2015   | 5 day                             | 03/01/2022 to 07/01/2022             | Raipur            | Virtual/ Regular<br>Mode   |  |  |  |
|   | ISE- ICCOHSEM (International<br>Certificate course in Occupational<br>Health Safety & Env. Mgt.)  | Min. 96 hours<br>Training         | 10/01/2022 to 21/01/2022             | Raipur            | E-Learning/<br>Regular mode<br>Exam date<br>22/01/2021           |  |  |  |
|   | First Aid & CPR   | 1 days                            | 25/01/2022                           | Raipur            | Regular/ Class<br>Room   |  |  |  |
|   | ISE-SM (Safety Management at work place)  | 3 day or Min.24<br>hours Training | 27/01/2022 to 29/01/2022             | Raipur            | Virtual/ Regular<br>Mode   |  |  |  |
|   | Lead Auditor ISO 45001:2018   | 5 day                             | 01/02/2022 to 05/02/2022             | Raipur            | Virtual/ Regular<br>Mode   |  |  |  |
|   | ISE-EM (Environmental Management)   | 3 day or Min.24<br>hours Training | 08/02/2022 to 10/02/2022             | Raipur            | Virtual/ Regular<br>Mode   |  |  |  |
|   | ISE-FSM (Fire Safety management in any organization)  | 3 day or Min.24<br>hours Training | 12/02/2022 to 15/02/2022             | Raipur            | Regular/ Class<br>room   |  |  |  |
|   | Integrated Lead Auditor (ISO 45001:2018, ISO 9001:2015, ISO 14001:2015)   | 10 Days                           | 18/02/2022 to 26/02/2022             | Raipur            | Virtual/ Regular<br>Mode   |  |  |  |
|   | ISE-TQM (Total Quality Mgt.)  | 3 day or Min.24<br>hours Training | 03/03/2022 to 05/03/2022             | Raipur            | Virtual/ Regular<br>Mode   |  |  |  |
|   | Lead Auditor ISO 9001:2015  | 5 day                             | 08/03/2022 to 12/03/2022             | Raipur            | Virtual/ Regular<br>Mode   |  |  |  |
|   | ISE-RM (Rescue Operation in any organization)   | 2 Week                            | 15/03/2022 to 28/03/2022             | Raipur            | Regular mode   |  |  |  |
|   | ISE- IDOHSEM (International<br>Diploma in Occupational Health Safety<br>& Env. Mgt.)  | One year                          | Last Date of Registration 14/01/2022 | Raipur            | E-Learning/<br>Regular mode<br>Exam Date Dec.<br>2022 (Proposed) |  |  |  |
|   | Diploma/ Post Diploma in industrial<br>Safety/Industrial Safety & Fire/ Fire<br>Safety/Environmental Management/<br>Industrial Rescue Operation &<br>Management / Disaster Management   | One year                          | Dec. – Jan. (2022-23)                | Raipur/<br>Rampur | Regular  |  |  |  |
|   | Certificate Course in , Industrial Safety, Industrial Safety & Fire, Industrial Rescue Operation & Management, Fire Safety & Security Management, Disaster Management, Environmental Management, Quality Management, Fire Safety Management | 3 Month                           | Jan-March 2022                       | Raipur/<br>Rampur | Regular/ Class<br>room   |  |  |  |

Risk assessment & Control, Behavior based safety, chemical safety in industries, Safety in construction industries, Scaffolding safety, Petroleum & Gas industries safety, Ergonomics, Mock Drill, HAZOR study, Emergency planning, Disaster Mgt., Fire Safety, Hoisting & Rigging Safety, Defensive Driving, Environmental Mgt., EIA, Rescue Operation, Live Saving Procedure, WAH, Confined Space work Safety etc short Term Training also conducted by ISEI time to time.

Three Month Certificate Training course also Conducted by ISEI in Field of Rescue Operation & Management (Organisation), Industrial Safety, Industrial Safety & Fire, Disaster Management, environmental Management, Quality Management, Fire Safety Management, Environmental Management, Safety Management in Chemical Industries, Safety Management in Construction Industries, Security Management, Occupational Health Safety (OHS), Occupation Health & Industrial Hygiene (OHIH), Scaffolding Inspector Training and Safety, Health, Environmental Management.

**Note:** Diploma & ISE-IDOHSEM Courses conducted twice in a year. December-January session known as winter session and June-July session is known as summer session.

For more details visit www.iseindia.in or mail info@iseindia.in Call +91-8720831773





News & Journal Published by ZJEWT in association with Institution of Safety Engineers (India), Govt. Reg. No. 5240 Volume 4, Issue 4, October-December 21 Available online at www.ijournal.iseindiaan

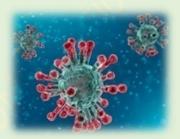
### International Journal of Institution of Safety Engineers (India) IJISEI

Volume 4, Issue 4, October-December 21





For more details visit www.iseindia.in or mail info@iseindia.inCall +91-6266474225, +91-8720831773



"Protect yourself and your family From Novel Corona Virus infection to take adequate precautionary measure"

www.ijournal.iseindia.in



Plan Prevent Protect

