



Industrial disaster harmful for golden future

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Abstract

Industrial development is necessary for a country but it should be done in proper way by taking all rules and conditions of safety measures in mind. Industrial accidents lead to various economical as well as human losses which is very harmful for a country industrial growth. There is a strong need to strictly follow safety norms and other precaution by the industries. There should be some government agencies which take regular inspection and campaign program. In the present research paper there is a table which show the industrial accident which occurs in the different years and also discussed about the causative factors and precautions and prevention from the industrial disaster.

Keywords: industrial development, precautions

Introduction

Industries play a vital role in development of any country. Industry contributes a major part in GDP and provides employment to a large population. Industrial growth of a country converts it from under developing country to developing country with high per capita income. In short, it is the backbone of the country. Hap hazard growth of industries is very harmful for future; it gives only short-term benefits. We need sustainable growth of industries for bright future with calculating all losses and benefits. Accidents disrupt industrial growth and it is preventable up to a limit. Disasters may be occurring at various stages in industrial plant such as storage, transportation, maintenance, manufacturing, disposal etc. Growing up the population density and more residential colonies near industry area makes the situation worst. Mostly peoples leaving near the industry are poor, uneducated, and less knowledgeable which makes them more vulnerable to the disasters. Fire and explosion hazard is the main hazard in industry as well as release of toxic chemical can cause unrecoverable losses to the people and environment whose effects can be seen up to a long duration.

The main difference between fire and explosion is the speed of energy released. Fire occurs due to defaults in industry such

as overheating of machine, short circuits, any mistake of the worker etc. in which energy released slowly. But if fire comes in contact with organic solvent or other explosive source then fire convert into explosion which release energy in large amount. Fire is slowly energy release process which can be control easily in comparison to explosion which is high energy release process. The damage from explosions is depends upon pressure or shock waves, heat, building collapse. Toxic gases release from the fire and explosion causes many respiratory problems in near areas people. Human as well as environment is very adversely affected by these. In Bhopal gas tragedy, the adverse effect from leakage of methyl isocyanate gas can be seen till now after 34 years on incident.

Developed countries have accident investigation agency which is very helpful in collecting database, reasons of failure and other critical factors. All these information help to learn a lesson and reduce the chance of recurrence. In India, there is strong need of such agencies to collects all information about the incident which is helpful sources to prevent the industries mishap. The present research paper also discussed about different industrial disaster which occurs during last year's work discuss. Below there is discussion about the present research.

Result and Discussion

Table 1: Industrial Fires and Explosion in Recent Time

Location	Date	Losses	Reason or Failure
Rae Bareli, U P	1 Nov, 2017	46 killed, 100 injured	Explosion in boiler of state run power company NTPC
Hisar, Haryana	5 Nov, 2017	7 killed, 15 injured	Leakage in boiler that leads to explosion of oil tank
Gopalganj, Bihar	21 Dec, 2017	4 killed, 12 injured	Boiler blast in Sasa sugar mill
Bawana, New Delhi	21 Jan, 2018	17 killed, 30 injured	Short circuit in cracker and rubber factory
Panipat, Haryana	21 Jan, 2018	2 killed, 6 injured	Boiler blast
Sonipat, Haryana	19 March, 2018	3 killed, 16 injured	Due to short circuit
Panipat, Haryana	17 April, 2018	1 killed, 2 injured	Chemical container catch fire due to spark fell down in container

Source: Other Sources

Causative Factors

1. Old age of process plant due to which building does not handle any shock and easily collapse.
2. Inadequate technology to deal with problems such as leakage alarm system, automatic electric cut etc.
3. Don't follow the proper electric guidelines.
4. Fire extinguisher may be not available or not in working condition. Rarely workers know how to use them.
5. Temperature, pressure, light, ventilation etc. conditions not fulfill the set limit of guideline.

One of the main reasons behind industrial accidents is human error; the best example of this is piper alpha accident. In this case a worker accidentally started a pump without checking its safety valve under maintenance which leads to gas leakage and then explosion. Sometime defects in design, non-compliance of standard operating procedure, and poor coordination between different departments may also cause to industrial disasters. Sometimes when equipment is not timely and properly maintained, then it starts malfunctioning which increase temperature and heat which turned into fire and explosion. So proper maintenance as per the schedule mention by the manufacturer should be follow for smoothly working.

From above accidents which occur in recent past some finding are come

1. Command occurrence of boiler blast has been noticed.
2. Safety norms are not followed by mostly operating companies.
3. Unskilled laborers without any personnel training were incumbent to perform the critical operations.
4. Fire brigade and rescue teams comes very late, its means they are not prepared to actions at all times.
5. No emergency warning system.

Precautions

1. An up to date and faithful team of qualified professionals would enable prevent and control of accidents.
2. Vapor and gas detection with alarm should be compulsory
3. Time to time awareness campaign for the workers and local people play vital role in controlling the situation.
4. There should be some agencies which check the conditions of industry and follow strictly the safety norms.

Conclusion

Industrial disasters affected very adversely to economic growth, employment, foreign investment etc. A loss of people which died and injured in accident is unforgettable negative experience. Other from these some intangible losses also occurs such as human feeling, social respect of industry, fear to work in industry next time etc. A lot of economic loss to industry and government compensation to the affected family all are include in post-disaster expenses. Time comes to change our approach if these expenses are utilizing in pre-disaster phase then such accident can be preventing up to a limit. Proper training, campaigning, inspections and strictly apply safety norms leads us to a golden future.

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