SUMMARY

10.1. Today government, private industries, and universities recognize the urgent need for productivity improvement. Every year a large number of employees get injured due to accidents. Therefore, there is a definite need to implement necessary safety measures in the industrial organizations. The safety requirements vary according to the hazard problems. Well-organized safety management is a necessity in any successful industrial establishment. Therefore industrial safety is an important subject, which needs to be studied in depth and given due importance in any industrial organization. In earlier days the accidents were said to be the outcome of workman’s carelessness, with management sharing little responsibility. Subsequently through appropriate labour legislations like Factories Act 1948, ESI Act 1948, Workman’s Compensation Act 1923, duly amended from time to time the companies set up and introduced many corrections and preventive steps. Safety has been recognized as an integral part of the normal operating procedures and a definite responsibility of all supervisory personnel along with the employees. Interaction between worker and the environment leads to occupational health hazards. To minimize health hazards, there is a need to monitor the worker’s health and also working environment. Extensive statutory provisions have been made in India for prevention of industrial accidents and thus enhancing safety of industrial workers. With the large-scale industrialization, the hazards faced by the industrial worker have increased manifold. Therefore the subject of industrial safety has assumed quite an importance. Absence of proper safety measures would invariably lead to avoidable accidents resulting into injuries to persons, damage to equipment and machinery, financial losses both to employers and employees. The human angle for providing safety to the industrial workers is no less important, in fact in the present industrial environment; it is one of the major reasons for the management to undertake effective safety programs in their organizations,
concerns, and factories. Industrial safety involves not only elimination of agents of injury, but also a reliable control of harm to employees. A good safety program can reduce occupational injury/illness and the operating costs, which in turn contributes substantially towards increased productivity and improved profits. In view of the foregoing, it is imperative that the subject of industrial safety is given due care and a proper safety program be evolved and implemented to ensure the safety of workers. Industrial safety is that condition of enterprise operation in which, by controlling hazards, accident free production is achieved. It is not necessary that all accidents should result in personal injury. In fact, the accidents without personal injury outnumber those, which have resulted in an injury. Industrial safety has been described as the only aspect of industrial relations where there is no advantage to either side at the expense of the other. Industrial safety of an organization is its prime responsibility, because workers are the soul of any progressive organization. Safety and health have great importance in industrial development and productivity. Therefore utmost attention needs to be given to maintain excellent safety and health standards at the places of work of the employees and also off the work. A safety policy is governed by certain principles. Safety training is essential at all levels, If a company cannot afford safety; it cannot afford to be in business, Lethargy in implementing safety procedures and using protective equipment’s increases chances of industrial accidents. Nature of an accident may vary from industry to industry. Accidents can be prevented . The term cost of accidents is a misnomer. The proposed research work is with the aim of analyzing the procedures adopted by industries and factories, measures both statutory and non statutory provide by the government and efficacy of the controlling authorities. The research topic relates to industrial safety management, which is dynamic and alive. The paper will also analyze industrial safety thinking over the years including the psyche right from ancient times and discuss future options. The study encompasses the safety management at both macro level as well as micro level.
10.2. The country faces an unacceptable performance-potential gap in the industrial development. The recent spate of industrial development has brought new issues like competitive conduct of the business houses and industrial safety into limelight. The industrial safety movement in India is of a very recent origin. So, the industrial workers in India are more vulnerable to unethical practices by owners and management. Contrary to the early stage of development of industrial safety issues in India, the developed economies have a well-debated and structural legal system for right conduct and safety system for companies. Public policy intersects the field of industrial safety when public policy makers believe that intervention in the process or outcome of industrial policy exchanges between management and workers will benefit the society as a whole. New labour policy and technological as well as industrial development that affect the industrial safety are outgrowth of management abuses brought to the attention of policy makers through the media, consumer advocacy groups or by consumers themselves and an overall public recognition of the need for economic and social welfare. Industrial safety doctrine rests on the concept of safety consciousness and safe working environment. Industrial safety in acceptable terms is the ability of a firm to increase productivity without increasing industrial accident. There are no economic interpretations of industrial safety in Indian context. Mostly industrial safety is conceived in terms of economic efficiency with laws on workers’ safety largely interpreted through a concise economic thought. Maximisation of industrial safety standards and avoidance of accidents is considered the dominant goal of industrial safety norms, with safety system striving to achieve the highest practical level of safety norms. The current debate in industrial safety globally centers on the pollution and environmental hazards, both natural and artificial. Through regulations, policy makers attempt to prohibit certain types of practices like unsafe conditions, unsafe working environment. Regulations also influence the compensation packages. Through worker education government may cultivate desired worker response on industrial safety. Many government and non-government agencies offer workers education
programs and disseminate information. There is an increased cost resulting from regulations. Industrial development is sometimes taken as a productivity increase concept. This is the generalized view, which hampers industrial safety. If the industrial society takes this as a process development, with, both technological development of the plants and technical expertise improvement of the worker, then there is a room for industrial safety aspects being in-tune with the industrial development. In India, what we generally find is that most of the industries or factories move in to production without incorporating all safety measures. This only shows that the industrial safety arrangements are not keeping pace with the industrial development.

10.3. Labour legislation is based on certain fundamental principles. The terms Industrial law and Labour law are considered as synonymous in our country. The scope of the term industrial law is however much wider. Broadly speaking, industrial law covers all the statutes and case laws pertaining to the industry. Labour law covers aspects covering laws, which are primarily concerned with labour. Before the passing of the Worker's Compensation Act any workmen, who received any injury in the course of employment had to seek the help of the court for determination of the compensation. Originally the Act was applicable to workers of certain prescribed industries wherein the workmen were entitled compensation from the employer in case of personal injury caused by accident arising out of and in the course of employment with certain reservations relating to the duration of incapacity and negligence of workman himself. The theory of workmen's compensation is that “the cost of product should bear the blood of workmen.” Compensation is also given for certain occupational diseases. The Act thus provides social security to workmen and is a humanitarian measure. Working conditions in factories are regulated by the Factories Act 1948, which provides for the health, safety and welfare of workers and precautions to be taken in case of hazardous process. The State Government through their factory inspectors enforces the Act. This brought along with it the problems of industrial
safety and occupational hazards. Provision has also been made for the workers' participation in safety management. It governs the working conditions of workmen in the factories. The Act aims to protect workers employed in factories against industrial and occupational hazards and to ensure safe and healthy conditions of life and work. The Factory Act by itself contains adequate provisions to safeguard the safety of workplace and workers. The Employees' State Insurance Act, 1948, is applicable to all factories including those belonging to the Government other than seasonal factories. The Employees' State Insurance Act, 1948 with its amendments including Amendment rules 1991, is a social security legislation aimed at introducing social insurance by providing certain benefits for employees in case of sickness, maternity and employment injury. The scope of coverage under the Employees' State Insurance Act, 1948 is much wider than under the Workmen's Compensation Act, 1923.

10.4. With the technological advancements and development of complex and hazardous processes, the management of Industrial Safety and Health has become a vital issue. The Directorate General Factory Advice Service and Labour Institutes (DGFASLI) are relied upon by Central and State Governments for a variety of information pertaining to occupational safety and health. The Ministry of Labour has been deeply concerned over the non-availability of occupational safety and health information for policy planning. Most of the technological advancement contributes towards industrial safety. Many studies have found that safe industrial environment and absence of industrial accidents can help to enhance the survivability of the firms. Furthermore, there is extensive evidence of a robust and positive relationship between industrial safety, productivity and innovation. Finally, national cooperation appears to be more common than international cooperation in industrial safety. From the industrial safety point of view, ideally, equipment design should start with the operator.
10.5. The research topic relates to industrial safety management, which is dynamic and alive. The study encompasses the safety management at both macro level as well as micro level. By formulating a working hypothesis considerable data can be collected. The task of research is to test and establish such hypothesis. After analyzing the data the researcher was in a position to test the hypothesis statistically. The research is inductive and deductive. The study is being made to analyze the industrial safety in the current perspective so as to reduce industrial accidents. The study was carried out in selected industries, which are major industrial units in India. The data required is in the form of primary as well as secondary data. The required data can be found in journals, magazines, previous research work, industrial analysis, workshops, factory floors, labour tribunals, ESI courts, trade union circulation etc. Interval scale has been used for measurement. Analysis of data in this case involves estimating the values of unknown parameters of the population and testing of hypothesis for drawing inferences.

10.6. A safety policy should be governed by the principles that; it is essential to respect human life, all the accidents and risks to health are preventable, safe working conditions is the right and obligation of each worker, safety training is essential at all levels. Interaction between worker and work environment leads to occupational health hazards. To minimize health hazards there is a need to monitor the workers health and also working environment. Some theorists complain that industrial development enables management to exploit workers in a more professional way. For the accident analysis the industries selected were Indian tools manufacturers, Zenith Ltd of Birla Group of Industries, Satpur, Aurangabad. The industrial regions chosen for the industrial safety analysis were Uttar Pradesh, Maharashtra and NCT of Delhi. For a wider analysis the countrywide data pertaining to India as a whole was taken. A protracted analysis of average number of accidents in the last seven years in the factory ITM, Nashik was carried out. The total accident investigation report shows that the accidents
were due to unsafe acts and unsafe conditions. In comparison lesser number of accidents occurred due to unsafe physical conditions. Accident reporting and accident investigation is useful for the analysis of accidents. In order to carry out the analysis of impact of industrial development on industrial safety, an in-depth study was carried out at BHEL, Jhansi. The compiled data shows that the industrial development process carried out in 1997 was able to bring down the industrial accidents in the subsequent two years, but this pattern did not continue for long. Statistical analysis of data collected reveal that the industrial development coupled with a good safety policy has in fact ensured low industrial accident rate at BHEL Jhansi. This as a sample can lead us to a possibility that industrial development and good industrial safety policy can reduce industrial accidents. During the interaction with MECON Ltd, being a large consultant firm, dealing with heavy industries certain aspects about industrial safety policy was analysed. A safety policy should include aspects about creating awareness about safe design and practices follow all statutory regulation, prevention of damages to the plant and equipment, injuries to employees at the project site, adherence to all acts, laws, rules and regulations of the state and the central Government and impart training in safety. For making analysis of industrial safety in the context of Indian industries, more effective, two industrialised areas with substantial diversity were chosen namely; Uttar Pradesh Region and NCT of Delhi. Industrial development and technological development caused by the modern technology is also bringing with it associated problems. The problems are more complex when the issue of management of safety, health and environment is concerned. A national inventory on capabilities and management of occupational safety and health will be of great help for designing and implementing various instruments to protect the safety and health of the large work force working in various sectors of the economy. In this regard as a part of this research work the state of Uttar Pradesh was chosen with the objective to collect and compile various information on occupational safety and health and information regarding extent of compliance with the important provisions under
The Factories Act, 1948 (Amended 1987) and the rules framed there under including system of recording and notification of occupational accidents and diseases as per the ILO Code of Practice at the unit and the state level. It is strongly recommended that the Factory Directorate of state of Uttar Pradesh must be equipped with IT update for effective data collection and data analysis in respect of health and safety. In NCT of Delhi there are about 46,000 industrial units; 77 percent with less than 10 workers, and 16 per cent with workers 10 to 20. By 2004 the number of industrial units increased about 93,000. In total there are total number of 221050 number of workers are working in the 6496 different factories working in the city of Delhi. Management of safety and health at the state level is more complex than at the unit level. However at the state level the management of safety and health is not unit or industry specific and the instruments such as policies, legislation, etc. are required to be more comprehensive to take care of safety and health issues in all type of occupations. National Capital Territory of Delhi enforces the legislation’s pertaining to occupational safety, health, welfare, working hours etc. of workers working in factories covered under the Factories Act, 1948 and located within the N.C.T. of Delhi.

10.7. In the present industrial scenario, the management of industrial organisation have realised the importance of safety and are paying much more attention to industrial safety than ever before. The statutory provisions made by the government, awareness of the workers and the employers about the advantages of a good safety programme have improved the safety of the employees of industrial organisations. Safety is a joint responsibility in which employers and the employees both have their respective roles to play. Unsafe conditions should be removed and unsafe act avoided. This would prevent accidents and ensure safety of the employees and that of the plant and machinery. Involving public in industrial safety will be a right step to address this aspect in the correct direction. It is necessary to recognize the role of safety
management in bringing about organizational effectiveness. Safety management is only a tool to assist the organization with its primary objectives. It is also necessary to maintain the safety department's contribution at a level appropriate to the organisation's needs. While taking on industrial safety, human resource safety must be efficient if workers are to be maintained, retained and motivated. The efforts of any industrial unit should be concentrated to raise productivity and reduce industrial accident and loss through it. When considering about work design, it is a combination of man, machine and the factory environment. Work problems usually originate within the individual workstation. As productivity and profitability are key issues in industrial circles, work system design is in fact the key element of industrial safety. To prevent industrial accident and occupational diseases as a result of noise, management should take certain steps. In the field of industrial safety social decisions play an important part. The top management should determine the safety policies of the company and it must be continuously involved in monitoring safety performance and in ensuring that corrective action is taken when needed. Managers can decide to use the safety of workers as a marketing tool for the company. Causes related to working conditions are, severity of work, working hours too long resulting in tiredness, weak health, fatigue and exertion of work. Risk management team should be established in industrial areas/zones, it should comprise of medical staff and safety staff. Safety posters with poignant illustrations and punching slogans may be put on walls near work places to arouse safety awareness among the workers. Studies have revealed that a small proportion of the workers in the industry receives a large proportion of injuries, workers in this group are said to be accident-prone. Transfer the accident-prone workers to less dangerous job situations. The problems are more complex when the issue of management of safety, health and environment is concerned. This requires an assessment of the present status of occupational safety and health in the country. A national inventory on capabilities and management of occupational safety and health will be of great help for designing and implementing various instruments to protect the safety and health
of the large work force working in various sectors of the economy. During the study, it was necessary for me to visit departments and organizations dealing with industrial safety and health in the manufacturing sector with a view to establish inventory of industrial safety and health information in the state of Uttar Pradesh. The activities of these departments, resources available at their disposal were examined to determine the problems faced by the organizations in the matters of safety and health and further resources needed in order to effectively manage occupational safety and health at the state level. Central Board for Workers Education under Ministry of Labour, Govt. of India should conduct their awareness programme in collaboration with Directorate of Factories and Regional Labour Institute. During the year 2000, 156 fatal accidents were occurred in the factories situated in NCT of Delhi. The severity rate of electrical accident is very high. This indicates inadequacy of attention paid to safety while working with electrical energy. As regards to preparation of safety policy and constitution of safety committees, the level of compliance with these provisions is very low. I, devoted some of my time to observe in detail, all aspects of safety management in ITM, Nashik. Safety of the employees is one of the major concerns of the company. Consequently it is paying adequate attention to the aspect of industrial safety and hygiene. Even though no major accident have taken place in the factory during the last five years, the management of ITM, Nashik is very alert and has kept all options of improving industrial safety in place. In the present industrial scenario, the management of industrial organisation have realised the importance of safety and are paying much more attention to industrial safety than ever before. The statutory provisions made by the government, awareness of the workers and the employers about the advantages of a good safety programme have improved the safety of the employees of industrial organisations.

10.8. In the 21st century, what we must try to do is to prevent accidents as much as possible and encourage education in industrial safety. Our vision for the
industrial safety needs in the 21st century centers around four key issues. As the scope of what our industry does has broadened, management’s concerns have grown closer to safety concerns. Consider expenditure on safety as an investment. The human angle for providing safety to industrial workers is equally important. Awareness of industrial hazards is equally important. When safety planning and safety measures are lacking, industrial operations may not remain under full control, schedules may get disrupted and cost may increase. Any industry with strong self-awareness will prevent manufacturing process outside the true safety standards. Cost of accident in industrial circles is associated with the financial loss to the management arising out of accidents at work place. Today concept of industrial safety and social responsibility of managers in India is a beleaguered one. There is little expectation that industry will whole-heartedly invest in industrial safety, or safety inspectors will be taken seriously as the custodians of safety legislations. Most of the Indian industries do not appreciate the importance of industrial safety and linking with the rest of the society. In the initial years of independence, when worker safety enjoyed a certain degree prestige in the country, trade union activists did not pay any attention to the industrial safety and instead aimed for political positions. Indeed, without an appreciative audience, it is impossible to raise resources for industrial safety. Management must recognize that their core competence in industrial safety management is by advancing knowledge through critical research. Further by accepting that the public has an integral role to play in the industrial safety, there is a constant pressure to upgrade the safety system, research and awareness standards. The present Plan Scheme “Development of Safety & Health Information System and Data Bank” being operated during the 10th Plan envisages creation of the National Inventory on Occupational Safety and Health Information to widen the information base and making available the information at one source to help in the activities specially those related to policy planning directed at improving the occupational safety and health of the workers. All employees are individually and collectively responsible for safety. Safety posters
and notices should be displayed to caution workers against possible hazards. In gas hazard areas, necessary gas safety precautions should be followed. Workers going into the inspection chamber shall have gas masks, gumboots, and rubber gloves while working inside. The management profession must note that the industrial safety management problems present some of the most challenging frontiers of development. The future scenario for industrial safety calls for a major reorientation of philosophy, policy and practices. It is the responsibility of every manager to ensure that safety health and hygiene in industrial society are not compromised.