

UE8076  
UE6705

Professional Ethics in Engineering

Unit - IV

1. Discuss the importance of collective Bargaining.

- ⇒ Collective bargaining develops a sense of self respect and responsibility among the employees.
- ⇒ It increases the strength of the workforce, thereby, ↑ing their bargaining capacity as a group.
- ⇒ Collective bargaining ↑s the morale and productivity of employees.
- ⇒ It restrict management's freedom for arbitrary action against the employee. Moreover, unilateral actions by the employer are also discouraged.
- ⇒ Effective collective bargaining machinery strengthens the trade unions movement.
- ⇒ It becomes easier for the management to resolve issues at the bargaining level rather than taking up complaints of individual workers.
- ⇒ It tends to promote a sense of job security among employees and thereby tends to reduce the cost of labor turnover to management.
- ⇒ It opens up the channel of communication b/w the workers and the management and ↑s workers participation in decision making.
- ⇒ Collective bargaining plays a vital role in settling and preventing industrial disputes.

⇒ It leads to Industrial place in the country.

⇒ It results in establishment of a harmonious industrial climate which supports which helps the pace of a nation's efforts towards economic and social development since the obstacles to such a development can be reduced considerably.

⇒ The discrimination and exploitation of workers is constantly being checked.

⇒ It provides a method of the regulation of the conditions of employment of those who are directly concerned about them.

2. Explain "Employee Rights" and its role in a Business Organisation.

Employee rights are moral and legal rights <sup>that</sup> are obtained by the status of being an employee.

⇒ The provisions made to the employees under this category are:

- 1. Professional rights.
- 2. Basic Human rights
- 3. Institutional rights / Contractual employee rights.
- 4. Non contractual employee rights

The non contractual employee rights include:

1. Right to privacy:

⇒ It is the right to control the access and use of one's information. only authorized persons can get the personal information

2. Right to choose outside activities

⇒ It is the right to have a private life outside the job. There are some situations in which this right can be curbed eg.,

- when those activities lead to violation.
- when the activities of the employees form a conflict of interest.
- when the interest of the employees is getting damaged.

3. Rights to due process from Employer:

⇒ It is the right to fair process or procedures in firing, promotion and in taking any disciplinary actions against the employees.

4. Right to equal opportunity - Non discrimination:

⇒ Discrimination because of caste, sex, religion, creed, and language are regressive actions. Discrimination which means a morally unjust treatment of people in the workplace is damaging to the human dignity.

5. Right to equal opportunity - Sexual Harassment in the workplace.

6. Right to equal opportunity - Affirmative Action or preferential Treatment.

3. Explain the procedure in risk benefit analysis and discuss its role in reducing risks with suitable examples.

⇒ The major reasons for the analysis of the risk benefit are:

1. To know risks and benefits and weigh them each
2. To decide on designs, advisability of product/project
3. To suggest and modify the design so that the risks are eliminated or reduced.

#### ① Personal Risk:

⇒ Assessing the involuntary personal risks is a difficult task.

⇒ For example, a group residing near the cement plant is exposed to a lot of risk. If suppose a cement plant or refinery was to come up in the area where this group already reside, they will object the proposal.

#### ② Public Risk:

⇒ Assessing the public risk is relatively easy, as in society the cost of disability can be calculated as an average value. To assess the public risk, the loss of assets and the correction costs are estimated.

#### REDUCING RISK (IMPROVING SAFETY)

⇒ Several techniques have been adopted to reduce

the risk and to improve safety in a product or project development, as follows :

1. An application with inherent safety while designing eg. ; LPG cylinder is provided with a protective frame, the valve handle that avoid the gas leakage.
2. Use of redundancy principle in instrument protection / design . for eg. ; use of standby device backup for computer storage .
3. Periodical / monitoring (inspection) and testing of safety system to ensure reliability eg. ; Fire extinguishers ; earth' system in electric circuits are checked periodically.
4. Issue of operation manuals , training of the operating personnel and regular audits are adopted to ensure that the procedures are understood, followed and the systems are kept in working condition.
5. Development of well-designed emergency evacuation plan and regular rehearsal / drills to ensure preparedness , in case of emergency .

4. What is meant by conflict of interest? Distinguish between general and professional conflict of interest and discuss the various types of conflicts of interest.

⇒ Conflict of interests is a situation in which two or more interests are not simultaneously realizable . It is the disagreement b/w public obligation and self-interest of an official .

Personal conflicts :

⇒ It involves a conflict b/w two people, most often from a mutual dislike or personality clash.

⇒ According to Boston University FSAO, " Causes for workplace conflict can be personality or style difference and personal problems such as substance abuse, childcare issues, and family problems .

Professional conflicts :

⇒ It is a state of discord caused by the actual or perceived opposition of needs, values and interests b/w people working together. Conflicts takes many forms in profession.

⇒ Types of conflicts of interest :

- 1. Actual conflicts of interest
- 2. Apparent conflicts of interest
- 3. Potential conflicts of interest.

1. Actual conflicts of interest : This refers to the situation where the objectivity is lost while making a decision, and the inability to discharge the duty to the employer. It is the result of weaker judgement and service.

2. Apparent conflicts of interest : Consider a situation like; an engineer is making more expensive designs to get more commission. This leads to the engineers interest and ability for professional attitude.

3. Potential conflict of interest: There may be situations like; the interest of an employee extend beyond the employer. The interest changes into intimacy, and non-moral judgments against the interest of the employer, and in favor of the outside potential competitor.

It includes:

- a) Favorable contact
- b) Bribe and gift
- c) Moonlighting
- d) Insider information.

5. What are intellectual property rights? Explain the elements of intellectual property rights in detail and benefits of IPRs.

⇒ It is the information and the original expression that derives its original value from creative ideas, and is with a commercial values. IP permits people to have fully independent ownership for their inventions and creativity, like that of own physical property.

⇒ The agreements with World Trade Organization (WTO) and Trade-Related aspects of Intellectual Property system (TRIPS) have been adopted effective from January 2005. Besides the minimum standards set for protection of IP rights, appropriate laws framed by the member countries are expected to reduce distortions and barriers for and promote the international trade.

Need for protection of IP:

⇒ IP plays an essential role to stabilize and develop the economy of a nation. This protection actually



simulates creativity, research, and innovation by ensuring freedom to individuals and organizations to benefit from their creative intellectual investments.

⇒ The IP serves many purpose, namely

- a) It prevents others using it;
- b) prevent using it for financial gain,
- c) prevent plagiarism,
- d) fulfill obligation to funding agency.
- e) provides a strategy to generate steady income.

Some of the challenge in the acquisition of IP are:

1. Shortage of manpower in the industry. Educational institutions can play a vital role in providing the same.
2. High cost of patenting and lengthy procedure. This was being considered by the Government and a simpler and faster procedure is expected and
3. Lack of strong enforcement mechanism.

Intellectual properties :

- a) Patents
- b) Copyright
- c) Trademark
- d) Trade Secret.

a) Patents : It is a contract b/w the individual and the society.

⇒ Types of patent

- a) Utility patent
- b) Industrial Design patent.



## 2. Copyright :

⇒ It is a specific and exclusive right, describing rights given to creators for their literary and artistic works.

Copyright is effective in,

- a) preventing others from copying or reproducing or storing the work
- b) publishing and selling the copies
- c) performing the works in public, commercially
- d) to make film.
- e) to make translation of the work,
- f) to make any adaptation of the work.

⇒ Copying the idea is called 'plagiarism' and it is dealt with separately.

## 3. Trade mark :

⇒ Trade mark is a wide identity of specific good and services, permitting differences to be made among different trades.

⇒ It is a territorial right, which needs registration.

⇒ Registration is valid initially for 10 years and renewable.

4. Trade Secret : A trade secret is the information which is kept confidential as a secret. This information is not access by the any other competitor.

6. Explain the Bhopal gas tragedy: Discuss the violation of moral, ethical and professional codes of standards. In it. write a conclusion to avoid such disaster in future.

⇒ It is also known as Bhopal disaster was a gas leak accident in India, considered one of the world's worst Industrial catastrophes. It occurred on the night of Dec. 2-3, 1984 at the Union Carbide India Limited (UCIL) pesticide plant in Bhopal, Madhya Pradesh, India.

⇒ A leak of methyl isocyanate gas and other chemicals from the plant resulted in the exposure of hundreds of thousands of people. Estimates vary on the death toll. The official immediate death toll was 2259 and the government of Madhya Pradesh has confirmed a total of 3787 deaths related to the gas release. Other estimate, 3000 died within weeks and another 8000 have since died from gas-related diseases.

⇒ A government affidavit in 2006 stated the leak caused 558125 injuries including 38,478 temporary partial and approximately 3,900 severely and permanently disabling injuries.

## Equipments and safety Regulations

1. The MIC tank alarms had not worked for four years
2. There was only one manual back-up system, compared to a four-stage system used in the US.
3. The flare tower and the vent gas scrubber had been out of service for five months before the disaster. The gas scrubber therefore did not treat escaping gases with sodium hydroxide, which might have brought the concentration down to a safe level.
4. The maximum pressure the scrubber could handle, provided it had been operating, was only a quarter of the pressure during the leak.
5. The flare tower could only hold a quarter of the gas that leaked in 1984. To reduce energy costs, the refrigeration system was idle. The MIC was kept at 20 degree Celsius not the  $-5^{\circ}$  advised by the manual.
6. The steam boiler, intended to clean the pipes, was out of action for unknown reasons.
7. Slip-blind plates that would have prevented water from leaking into the MIC tanks through faulty valves were not installed. Their installation had been omitted from the cleaning checklist.

8. The water pressure was too weak to spray the escaping gas from the stack. They could not spray high enough to reduce the concentration of escaping gas.

9. According to the operators the MIC tank pressure gauge had been malfunctioning for roughly a week. Other tanks were used rather than repairing the gauge. The build up in temperature and pressure is believed to have affected the magnitude of the gas release. UCC Investigation Studies have disputed this hypothesis.

10. Carbon steel valves were used at the factory even though they corrode when exposed to acid. UCC admitted in their own investigation report that most of the safety systems were not functioning on the night of Dec. 3 1984.

11. The design of the MIC plant, following government guidelines was "Indiarized" by UCC engineers to maximize the use of indigenous materials and products.

7. Write a short note on

(i) Institutional authority :

⇒ It is the authority exercised within the organization with in the organization.

⇒ It is the right given to the employee

- to exercise power
- to complete the task and
- force them to achieve their goals.

Eg. Line manager and Project Managers have the institutional duty to make sure that the products / projects are completed successfully.

## ii) Expert Authority :

⇒ On the other hand, the Expert Authority is

- a) the possession of special knowledge, skill and competence to perform a job thoroughly (expertise)
- b) the advice on jobs, and
- c) is a staff function.

⇒ It also known as 'authority of leadership'.

These experts direct others in effective manner.

Eg. advisers, experts and consultants are engaged in an organization for a specific term.

## iii) Discrimination.

⇒ Discrimination means morally unjustified treatment of people on arbitrary or irrelevant grounds.

⇒ Discrimination is not always against a disadvantaged group. When a majority group is discriminated against because they are a member of this group this is usually called reverse discrimination.

Types :

- 1) Racial Discrimination
- 2) Ethnic Discrimination -