Unit IV

Risk Assessment

Safety and risk - assessment of safety and risk - Riysis - Risk benefit analysis and reducing risk - Govt. Regulator's approach to risks - the three mile island and Chernobyl case studies & Bhopal Threat of Nuclear Power - depletion of ozone - greenery effects - Collegiality and loyalty - respect for authority - collective bargaining - Confidentiality - conflicts of interest - occupation crime - professional rights - employees' rights - Intellectual Property Rights (IPR) - discrimination.

Bhopal Gas Tragedy Case Study

- The night of 2-3 December 1984, was the most unfortunate night for the Bhopal, in fact not only for Bhopal but for the whole world. Thousands of people lost their lives that night and many are suffering the consequences of the tragedy even now. The incident was caused because of the leakage of Methyl Isocyanate (MiC) gas from the Union Carbide India Ltd (UCIL) plant.

Bhopal Gas Tragedy Case Study

- Background

The Union Carbide Corporation, an American enterprise established a pesticide plant in India because of its central location. The plant was supposed to produce Sevin, a pesticide. Union Carbide and the Indian Government had a deal, and under this idea, the Union Carbide had a 50.9% share and the Indian Investors had a 40.1% share. The plant was named as The Union Carbide India Limited (UCIL).

- UCIL started its production of pesticide in 1979. While this pesticide was produced, a toxic liquid was also produced i.e., Methyl Isocyanate (MIC). Since MIC is a very toxic chemical it required great maintenance.
- Around 1:00 a.m on 4th December 1984, when the MIC gas started swallowing up the whole of Bhopal people who were sleeping peacefully started feeling the change in the air. They ran for their lives but couldn't escape their death. Some who were able to save their lives weren't able to save themselves from the coming disabilities. All this happened because of leakage of the MIC gas from the tank E106.
- Earlier, too, complaints were being made about the maintainability of the plant, of how MIC was leaking in small amounts. The previous incidents of leakage had also caused the death of some people and left others severely injured. But, the authorities paid no attention to it. The machines were worn out but **no replacement was there.**

- Around midnight on 3-4 December 1984, the MIC gas got leaked from the plant and got mixed with the fresh air in Bhopal. Suddenly, people started feeling uneasy, started vomiting, were having **trouble while breathing, people started dying within a few minutes of inhaling the toxic gas.** It was not only the human beings that suffered but animals, too, suffered and lost their lives.
- People, in large numbers, were rushed to the hospital but at that time no doctor knew about the actual cause of death. No one knew about the leakage of the MIC. They just had a hunch about some leakage but exactly didn't know about the leakage of MIC gas. Since doctors couldn't operate properly without knowing the exact cause of the accident, so many people lost their lives.
- It was reported that nearly **3000 people lost their lives and more than 6 lacs were severely injured**. The survivors survived with permanent respiratory problems, and other complications. Children who weren't even born at that time were born with some health issues.

- Finally, in the year 1993 International Medical Commission on Bhopal (IMCB) was organized to provide medical assistance to the survivors of the Bhopal tragedy of 1984. IMCB was a constitution of 15 professionals from 12 countries having expertise in the field of:
- Environmental health
- Respiratory medicine
- Toxicology
- Immunology
- IMCB had co-chairpersons and they were, Dr. Rosalie Bertell and Gianni Tognoni. The main aim of the International Medical Commission on Bhopal was to provide some relief to the victims and to suggest some ways to prevent such disasters in the future.

- The work was divided into 8 areas, and they are:
- Clinical
- Family Life
- Epidemiology
- Medical care
- Drug Therapies
- Accident Analysis
- Claims
- Review of published literature

- A plan was laid out for investigation to know the actual cause of the exposure. This plan has three phases.
- First Phase – In this phase, the symptom report was analyzed and distance was used as a substitute for exposure. It stated that respiratory and neurologic problems were the aftermath health effects of the exposure.
- Second Phase – Lung function and respiratory organs were assessed. According to the report, there were excessive respiratory issues and the functioning capability of the lungs was reduced with each passing minute.
- It was noticed that to know the exact level of risk factors involved it was necessary to analyze the exposure accurately. Also, to provide long-term care and medical aid it was mandatory for them to know exactly what they were dealing with.
- Third Phase – This was the last phase of the process. In this phase, the victims were assessed individually based on exposure time, location and distance. Finally, the reports were compared to the findings from the distance surrogate to determine whether their association is better than that of distance alone.

Following are the reasons that, too, have contributed to the Bhopal tragedy:

- An inspection team came from Danbury, the United States to the Bhopal plant and found 61 safety problems. Out of these 61 problems 31 were major.
- Main refrigeration and cooling system were closed down before 150 days of the accident
- To lower the cost number of workers working were reduced.
- Also, the specialized training was not given to the unskilled workers so that they could at least have an idea about the consequences of their actions.
- As already mentioned, before this major tragedy there had already been minor leakages which cost the life of one worker and others were injured.
- No supervisor was there for his night shift.
- The pressure control valve of the tank E610 had not been working properly for over a month.
- Negligence on the part of the maintenance authorities.
- There was no backup plan in case of emergencies.

Litigation (The process of taking legal action in a court of law.)

- These cases were filed against UCC in Bhopal as well as in the USA. An effort was also made to settle the matter outside of the court but it wasn't successful.
- Then, after some time passed, the Indian Parliament passed The Bhopal Gas Leak Disaster (Processing of Claims) Act, 1985. According to Section 3 of the Act, the government of India had the power to file cases on behalf of every citizen who was entitled to claim the compensation. The government by Section 9 of the Act introduced "The Bhopal Gas Leak Disaster (Registration And Processing of Claims) Scheme, 1985".

- Finally, after the propagation of the rule of Absolute liability, the Court held UCC liable for the Bhopal tragedy. Though people had their doubts that the Indian Judiciary won't be able to handle the situation. They thought that the wrongdoers would escape from their liability under the rule of Strict liability but it didn't happen. The Indian Judiciary brought fair justice to the victims.
- On 14th and 15th February 1989, the Supreme Court in *Union Carbide Corporation v. Union of India* [1] ordered UCC to pay a sum of $470 million (Rs 750 crores) to the victims.

Principle of Absolute Liability

- This liability is also known as “No-Fault Liability”.
- Absolute liability is a liability where the accused is held liable but without any exception of getting excused from the liability. Normally, a person can be held liable only when he had mens rea (guilty mind) but in the case of absolute liability, a person can be held liable even if he had no intention of committing the offense.
- The principle of absolute liability is similar to strict liability. In the case of strict liability, a person keeps something dangerous with him, and he knows that even the slightest mistake would cause a release of that thing resulting in the death of human beings. So, even if he took proper care and caution but still the thing escaped resulting in the death of a man, he can be held liable under strict liability.
- The principle of strict and absolute liability differ only at one point. While on one hand under strict liability, a person is having options to escape the lability so arisen but, on the other hand under absolute liability a person has no such options available.

IPR at Glance

- The Office of the Controller General of Patents, Designs & Trade Marks (CGPDTM) is located at Mumbai. The Head Office of the Patent office is at Kolkata and its Branch offices are located at Chennai, New Delhi and Mumbai.

- The Trade Marks registry is at Mumbai and its Branches are located in Kolkata, Chennai, Ahmedabad and New Delhi. The Design Office is located at Kolkata in the Patent Office.

- The Offices of The Patent Information System (PIS) and National Institute of Intellectual Property Management (NIIPM) are at Nagpur. The Controller General supervises the working of the Patents Act, 1970, as amended, the Designs Act, 2000 and the Trade Marks Act, 1999 and also renders advice to the Government on matters relating to these subjects.

- In order to protect the Geographical Indications of goods a Geographical Indications Registry has been established in Chennai to administer the Geographical Indications of Goods (Registration and Protection) Act, 1999 under the CGPDTM.

Patent Information System (PIS)

- **Objectives:** Government of India, Ministry of Commerce and Industry, Department of Industrial Policy and Promotion established Patent Information System (PIS), in the year 1980 with the following objectives.
- To obtain and maintain a comprehensive collection of patent specification and patent related literature on a world wide basis to meet the needs for technological information, of various users in R&D establishments, Government Organizations, Industries, Business, Inventors and other users.
- To provide technological information contained in patents through, search services and patent copy supply service;
- **Functions:** The PIS caters to user needs on the basis of patent documentation and computerized system for retrieval and dissemination of patent information.

Trends in last five years with respect to filing of IP applications:

Application	2017-18	2018-19	2019-20	2020-21	2021-22
Patent	47854	50659	56267	58503	**66440**
Design	11837	12585	14290	14241	**22699**
Trade mark	272974	323798	334805	431213	**447805**
Geographical Indication	38	32	42	58	**116**
Copyrights	17841	18250	21905	24451	**30988**
Semiconductor Integrated Layout Designs (SCILD)	02	NIL	Nil	05	**01**
Total	**350546**	**405324**	**427309**	**528471**	**568049**

GI Tag

- Geographical Indications of Goods are defined as that aspect of industrial property which refer to the geographical indication referring to a country or to a place situated therein as being the country or place of origin of that product. Typically, such a name conveys an assurance of quality and distinctiveness which is essentially attributable to the fact of its origin in that defined geographical locality, region or country. Under Articles 1 (2) and 10 of the Paris Convention for the Protection of Industrial Property, geographical indications are covered as an element of IPRs. They are also covered under Articles 22 to 24 of the Trade Related Aspects of Intellectual Property Rights (TRIPS) Agreement, which was part of the Agreements concluding the Uruguay Round of GATT negotiations.

Trade Marks

- The Trade Marks Registry was established in India in 1940 and presently it administers the Trade Marks Act, 1999 and the rules thereunder. It acts as a resource and information centre and is a facilitator in matters relating to trade marks in the country. The objective of the Trade Marks Act, 1999 is to register trade marks applied for in the country and to provide for better protection of trade mark for goods and services and also to prevent fraudulent use of the mark. The main function of the Registry is to register trade marks which qualifies for registration under the Act and Rules.

Design

- Design' means only the features of shape, configuration, pattern or ornament or composition of lines or colour or combination thereof applied to any article whether two dimensional or three dimensional or in both forms, by any industrial process or means, whether manual, mechanical or chemical, separate or combined, which in the finished article appeal to and are judged solely by the eye, but does not include any mode or principle or construction or anything which is in substance a mere mechanical device, and does not include any trade mark, as define in clause (v) of sub-section of Section 2 of the Trade and Merchandise Marks Act, 1958, property mark or artistic works as defined under Section 2(c) of the Copyright Act, 1957.
- The registration and protection of industrial designs in India is administered by the Designs Act , 2000 and corresponding Designs Rules , 2001 which came into force on 11th May 2001 repealing the earlier Act of 1911. The Design Rules, 2001 was further amended by Designs (Amendment) Rules 2008 and Designs (Amendment) Rules 2014. The last amendment in Designs Rules came in to force from 30th December, 2014, which incorporates a new category of applicant as small entity in addition to natural person and other than small entity.

Brief about Indian Patent System

- The first legislation in India relating to patents was the Act VI of 1856. The objective of this legislation was to encourage inventions of new and useful manufactures and to induce inventors to disclose secret of their inventions. The Act was subsequently repealed by Act IX of 1857 since it had been enacted without the approval of the British Crown.
- Under the provisions of section 159 of the Patents Act, 1970 the Central Government is empowered to make rules for implementing the Act and regulating patent administration. Accordingly, the Patents Rules, 1972 were notified and brought into force w.e.f. 20.4.1972. These Rules were amended from time to time till 20 May 2003 when new Patents Rules, 2003 were brought into force by replacing the 1972 rules. These rules were further amended by the Patents (Amendment) Rules, 2005 and the Patents (Amendment) Rules, 2006. The last amendments are made effective from 5 th May 2006.

Rajiv Gandhi National Institute of Intellectual Property Management

- The Rajiv Gandhi National Institute of Intellectual Property Management has been established at **Nagpur** as a National center of excellence for training, management, research, education in the field of Intellectual Property (IP) Rights.

- The main objectives of this institute is to cater to the need of training of Examiners of Patents, Designs, Trademarks and Geographical Indications, IP professionals, IP managers, imparting basic education to user communities, government functionaries and stake holders involved in creation, commercialization and management of intellectual property rights, facilitate research on IP related issues including preparation of study reports and policy analysis of relevance to Government.