Introduction:

Health and safety has assumed much importance today as a determining factor for the success of oil and gas industry. Because of the hazardous nature of offshore exploration of hydrocarbon resources, successful health and safety management becomes a significant issue of top priority for all involved.

The Bhopal disaster at the Union Carbide Plant on December 3rd 1984 began a new era of safety consciousness around the world. The incident sent shock waves internationally questioning the practice of chemical safety. The reaction to this disaster was the headline and leading story on National Television and Radio Broadcast of many nations, causing public outcry. In the United States Congress convened several hearings and investigations into the causes of the disaster.
The human cost (estimates)

- Up to 10,000 deaths in first three days
- Additional 25,000 people died of related injuries by 1994

December 3, 1984
A cloud of toxic gas leaks from the Union Carbide pesticide plant

Source: AFP/EPA/AI/ICMR
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international organization are working together like World Health Organization (WHO), U.N. Environmental Program (UNEP), etc. to promote and assure a safe and healthy environment.

**Response of Industry:**

Bhopal Tragedy was like a wakeup call for the chemical industry that questioned itself whether their safety provisions were adequate. There was an immediate response on the part of the industry following Bhopal incident to place additional safety precautions and re-enforce the existing ones.

Industry Associations and Trade Organizations introduced guidelines.

Several individual industries taking the tips from the Bhopal disaster significantly reduced on its storage concept. Smaller sector volumes were being used in plants contributions to the new development of Process Intensification discipline.

In 1980 the program known as Responsible Care was developed by CCPA (Canadian Chemical Producers Associations) and began to be adopted world-wide. In 1988 the American Chemistry Council (ACC) took ones the implementation of “Responsible Care” in the U.S.A (Chemical and Engineering News, January 12, 1998).

In 1991, the International Council of Chemical Trade Associations (ICCTA) (http://www.iccta.org) was formed, with its main aim being to encourage members to follow Joint Distributions, Joint Responsible Care Program and the Product Stewardship program. The Council aimed that national and international safety policies are followed and potential risks for employees are reduced. More than 85% of the world accepted “Responsible Care Program”.

In the United States, the American Chemical Council (ACC) (http://www.americanchemistry.com) and National Association of Chemical Distribution (NACD) (http://www.nacd.com) incorporated the fundamental values while others like American Petroleum Institute (API) (http://www.api.ec.api.org). Environmental Health & Safety (EHS) Manpower system the National Petroleum Refiners Associations (NPRA) and the Synthetic Organic Chemical Manufacturers Associations (SOCMA) (http://www.socma.org/responsiblecare/index.htm) modified their standards and regulations.

**Legislation in the UK:**

The various tragedies that took place on and off in the United Kingdom had already begun to influence legislation in the UK. Several acts had been enacted and modified with time. Without doubt Bhopal tragedy however led to a fresh awakening for stricter implementations of legislations that had come in pre Bhopal time. Some of the important measures taken were CIMAH to implement Seveso 1 and COMAH to implement Seveso 2 also NIHHS. DSEAR (Dangerous Substances and Explosives Atmospheres Regulations) and MGHSWR (Management of Health and Safety Regulations) are some of the later laws (Etchells, 2002)

**Step Change in Safety:**
Source: Oil and Gas UK Health and Safety Report 2012

Oil and Gas UK Health, Safety and Employment issues directorate has influence over other industries and external stakeholder groups as shown in the Figure 9

Figure 9: Representative bodies in the Oil and Gas Health and Safety Employment Issues Directorate.