

Theme Write-up of 44th Engineers' Day September 15, 2011

Theme : "Engineering Preparedness for Disaster Mitigation"

September 15 is celebrated every year in the country as "Engineers' Day" to commemorate the birthday of the legendary engineer Sir Mokshagundam Visvesvaraya. Sir Visvesvaraya, an eminent Indian engineer and statesman was born in a remote village of Karnataka, the State that is incidentally now the Hi-tech State of the country. Due to his outstanding contribution to the society, Government of India conferred "Bharat Ratna" on this legend in the year 1955. He was also called the precursor of economic planning in India. His learned discourse on economic planning in India, *Planned Economy for India and Reconstructing India*, was the first available document on the planning effort of the country and it is still held as the parent source matter for economic planners. A theme of national importance is chosen every year by the National Council of the Institution and deliberated at its various State/Local Centres to educate the engineering fraternity in general and the society in particular. This year the National Council of the Institution has selected the theme as "**Engineering Preparedness for Disaster Mitigation**".

The world is facing an increasing frequency and intensity of natural disasters that has devastating impacts on the society. As per International Strategy for Disaster Reduction (ISDR), it has been observed that over 5 million people were killed or affected in the last 10 years and a huge amount of economic losses occurred due to the natural disaster.

The recent incident in Japan showed a tremendous technological effect to the society. More than 25000 lives have been lost, infrastructure in the North East devastated apart from acute shortage of availability of food and water. The damage to nuclear power stations has severely affected the nearby populace and marine life. The power of this natural disaster shook the foundation of a nation like Japan, which is technologically quite advanced and developed. It is anybody's guess as to what would have happened if a natural calamity of such magnitude strikes our nation. It is therefore a call before the engineering fraternity to plan for engineering and technical solutions in case such an eventuality takes place.

During such serious disaster situations, the major challenges are the protection of human beings, animal's lives, properties and the vital life-supporting infrastructure necessary for disaster mitigation. It has now come to realization that taking care of the natural resources and managing them wisely not only assures the survival of future generations, but also reduces the risks that natural and man-made hazards pose to people living today. Advanced disaster management technology could provide a critical support system to disaster management authorities during the situation of disaster

related crises. Such technology also provides the important inputs for any disaster management plan of action in recent times. In the pre-disaster evaluation, fixed satellite communication terminals would typically be installed by a qualified technical team in cases where the equipment may be required for longer than a week, for environmental monitoring, communications redundancy etc so that post-disaster recovery operations may be carried out properly. Post-disaster assessments have clearly illustrated that, along with disaster preparedness, proper management of the environmental features like air, land, water, forests, wastes and many more may be set up in reducing the risks and hazards. The term mitigation means taking actions to reduce the effects of a hazard before it occurs and it applies to a wide range of activities and protection measures that might be instigated in all aspects of disasters. Traditionally, disaster management makes use of indigenous and locally developed appropriate technologies to a greater extent. People in disaster-prone areas have developed, over generations the traditional technologies as efficient solutions to many of their disaster-related problems. However, many of these technologies and methodologies have only restricted applicability and possess limited potential to reduce the impact of disasters. Hence, the need arises for the application of modern technologies in disaster management, wherever and whenever possible. Many frontier areas of technologies such as space technology, modern information and communication systems, renewable energy, advanced medical diagnostics, remotely operated robotic systems for rescue and relief operations may be utilized. A number of advanced technologies and equipments have entered into the marketplace in recent years, which can provide the vital support to disaster management programmes.

Early warning, information of temporary shelters, effects of incoming disaster, evacuation plans and implementation through the use of modern communication system and network coupled with the application of modern technologies in disaster preparedness, search & rescue of disaster survivors, energy & power supply, food supply, storage & safety, water supply, purification & treatment and many more, could act as important and timely disaster mitigation tools.

To conquer the abnormal disaster based situation, a lot of awareness programme need to be organized nationwide so that the engineers can equip themselves with the knowledge and source of disaster mitigation techniques & tools and educate the common masses in the society about the same. This discussion attempts to enlighten the preparatory tasks of engineers on the area of disaster mitigation during the auspicious occasion of 44th Engineers' Day on 15 September, 2011.