Course Content & Tentative Agenda

Course Introduction:

The course titled **'Radiation Safety and Beneficial Applications of Radiation Technology'** is designed to generate awareness, beneficial effects, radiological safety & protection and overcome any threat of malicious use of radiation technology among stake holders, in general – across South East Asian/ITEC Countries with likely use of radiation technology. Participant agencies may be with little awareness on radiation technology, safety aspects available during the usage of radiation technology gadgets.

Objectives of this course is to provide an overview of radiation safety, detection, protection and beneficial uses of radiation technology cum nuclear programme for peaceful uses. Benefits of Radiation Technology is wide with applications in Industry, Medicines, Agriculture, Environment, Water Purification, Nuclear Power generation etc. Radiation technologies are used to support food / nutritional and agricultural programmes. Thus, Radiation / Nuclear technologies on judicious utilization, help to ensure progress of humankind.

Course content:

Introduction to Nuclear Science, Radioactivity, Ionizing Radiation, Radiation Sources, Radiation Units, Effects of Radiation, Naturally Occurring Radioactive Materials, Natural Background Radiation, Radiation Exposure and types, Governing International Guidelines, Radiation Protection Principles, Regulatory Framework, Radiation Monitoring Aspects, Environmental Monitoring, Nuclear Energy, Nuclear Power Plants, Applications of Radiation Technology, Radioactive Waste Management.

Tentative Agenda:

DAYS	PRE-LUNCH SESSION		POST LUNCH SESSION	
Day 1	Inauguration & Interaction with participants		Brief Introduction to fundamental concepts of Radiation / Radioactivity	Types of radiation sources with suitable monitoring gadgets and protective equipment
Day 2	Radiation Units, Effects of Ionizing Radiation in human / environmental matrices	Demonstration on Sampling and Counting Systems	Assessment of Natural Radiation / Radioactivity	Assessment of Natural Radiation / Radioactivity
Day 3	Types of Radiation Exposure and Control Measures	Guidelines on Radiation Safety	Monitoring Methodologies	Demonstration of Exposure Control aspects: Shielding, Distance
Day 4	Introduction to Nuclear Energy	Introduction to Radiation Technology, Nuclear Medicine	Applications of Radiation Technology	Demonstration of – Safety Protocols in Radiation Technology Applications
Day 5	Radiation Safety / Protection Officers	Regulatory Framework	Radioactive Waste Management	Evaluation on Course study, Certification