Scopes:

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Introduction

• Since ionizing radiation was discovered by Wilhelm Rontgen in 1895, nuclear technology has been widely used, especially in power generation, industry and medicine

• What makes nuclear useful? :
  – nuclear fission produces energy
  – nuclear radiation can interact with the atoms of a material
  – nuclear radiation can penetrate materials
Benefit and Risk

- Today most people are aware of the important contribution nuclear energy makes in cleanly providing a significant proportion of the world's electricity.
- Radioisotopes and radiation have many applications in agriculture, medicine, industry and research. They greatly improve the day to day quality of our lives.
- Accident of nuclear powers (Chernobyl, Fukushima etc)
- Increase of Radioactive waste generation
- The international community has well developed technologies to develop safe and secure solution to overcome risk.
Energy

- 437 NPPs in operation
- 70 under construction
- 374,504 MWe Total Net Installed Capacity
- Over 12 percent of the world's electricity production
Industry

- Irradiator
- Gauging Devices
- Radiography
- Portal Monitor
- Well Logging
- Tracer
Irradiator

For food preservation, sterilization, polymerization
Gauging Devices

- Level Switch
- Continuous Level
- Bulk Flow
- Neutron Source
- Moisture
- Density
- Thickness
Well Logging
Radiography

For Non Destructive Test
Medicine

- Diagnostic Radiology
- Radiotherapy
- Nuclear Medicine, etc.

Brachytherapy (seed implant)

Teletherapy
Research & Development

- Research reactor
- Neutron Activation Analysis (NAA)
- New material technology
Mutation Breeding in Crop Improvement

- Rice
- Shorgum
- Bean, etc.
Radioactive Waste Management

• The use of nuclear technologies/nuclear applications generate radioactive waste
• The waste is required to be managed to ensure the protection of human health and the environment now and in the future, and without imposing undue burdens on future generations
Conclusion

- Nuclear is useful for human welfare and its use will increase with the development of science
- Use of nuclear technologies generate radioactive waste that shall be managed well, so it does not burden future generations
Thank you for your attention