



International Atomic Energy Agency

**IAEA Education and Training in Radiation  
Protection, Transport and Waste Safety-  
New developments and challenges  
towards sustainability.**

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ETRAP 2005

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## **GC RESOLUTIONS**

- **Since 2000, Agency has reoriented its education and training programs.**
  - **In response to GC(44)/RES/13 in 2000, a 'Strategic Approach to Education and Training in Radiation Protection and Waste Safety' was proposed.**
- GC(45)/RES/10C in 2001 endorsed the Strategic Plan.**

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## TRAINING STRATEGY

### OBJECTIVES

To establish a **Steering Committee** – to advise, guide and monitor the strategy.

To **create a network** of national, regional and collaborating centres to become point of reference for radiation protection.

To formulate and implement the procedure for **development of trainers**.

To establish a mechanism for **feedback from training centres** on training activities and their improvement.

To **develop**, standardize and **disseminate** training material.

## Implementation of Strategy (cont'd)

### **Create a network of training centres:**

**Inter Centre Network (ICN) between IAEA, regional, collaborating and national training centres established.**

**Used as a tool for exchanging E & T documents**

## Implementation of Strategy- (cont'd)

### Facilitate development of Trainers:

- Radiation Protection in Medicine - Regional (Czech Republic)
- Radiation Protection in Industry- Regional (NRPB- U.K.)
- Radiation Protection in Medicine – Inter regional (Turkey)
- Radiation Protection in Medicine- Regional in Spanish(Argentina)
- Radiation Protection in Medicine- Regional (Thailand)
- Radiation Protection in Industry- National (Lithuania)
- In addition – Training offered by Emergency preparedness and response unit.



## Implementation of Strategy- (cont'd)

### Annual feedback from Training Centres:

- Description of Training Centre
- Summary of Training activities
- Summary of performance
  - Feedback from attendees
- Future training activities planned
- Additional relevant information



## Implementation of Strategy- (cont'd)

### Develop, standardize and disseminate training material:

- PGEC –11 parts completed
- Specialized training > 25 training packages completed
- Distance Learning > 23 lessons completed
- E-learning > 2 interactive modules completed

### IAEA Training for Regulators on

Authorization & Inspection of Radiation Sources in Nuclear Medicine	Authorization & Inspection of Radiation Sources in Nuclear Gauges and Well Logging
Authorization & Inspection of Radiation Sources in Industrial Radiography	Authorization & Inspection of Radiation Sources in Radiotherapy
Authorization & Inspection of Radiation Sources in Industrial Irradiators	Authorization & Inspection of Radiation Sources in Diagnostic & Interventional Radiology
Authorization and Inspection of Cyclotron Facilities	Customs Radiation

## **IAEA Training Material on Occupational Radiation Protection**

- **Assessment of Occupational Exposure due to Intakes of Radionuclides**
- **Assessment of Occupational Exposure due to External Radiation Sources**
- **Occupational Radiation Protection**
- **Radiation Protection and the Management of**
- **Radioactive Waste in the Oil and Gas Industry**

## **IAEA Training Material on Medical Exposures**

- **Radiation Protection in Diagnostic and Interventional Radiology**
- **Radiation Protection in Nuclear Medicine**
- **Radiation Protection in Radiotherapy**
- **Radiation Protection in Cardiology**
- **Prevention of Accidental Exposures in Radiotherapy.**

## **IAEA Training Material on Source Safety & Security**

- **Radiation Protection and Safety in Industrial Radiography**
- **Radiation Protection and Safety at Industrial Irradiation Facilities**
- **Concepts of Radiation Protection and the Safety of Sources**



## **IAEA Training Material on Emergency Preparedness and Response**

- **Classification of Reactor Emergency**
- **Medical Response**
- **Monitoring in a Nuclear or Radiological Emergency**
- **Nuclear Exercise**
- **Public Information**
- **Radiological Medical Exercise**
- **Radiological Response**
- **Research Reactors**
- **Response to Nuclear Accidents**
- **Response to Malicious Acts**
- **Medical Preparedness and Response**



## Other Thematic Areas

### **Quality Management:**

Quality Management Systems for Technical Services in Radiation Safety

### **Waste Management :**

Safety Assessment of Near Surface Low and Intermediate Level Radioactive Waste Disposal Facilities

### **Transport Safety :**

Safe Transport of Radioactive Material – Third Edition - Training Course Series 1-2002

## New Challenges

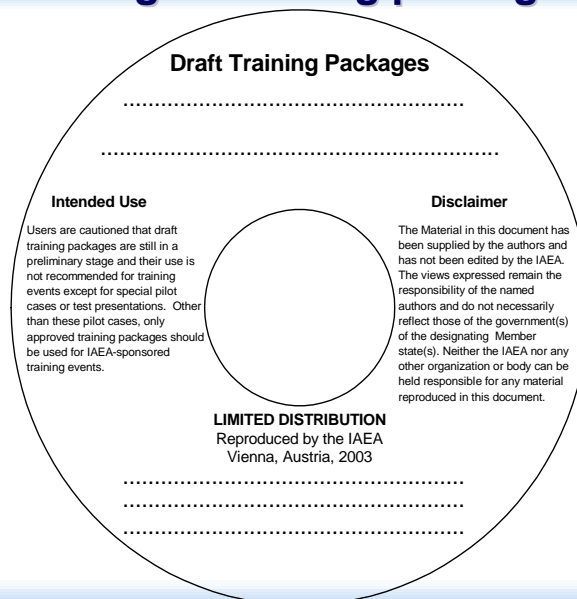
- **Harmonization**
  - Training events
  - Training materials
    - Structure
    - Labelling
- **Assistance**
- **Tools and Techniques**

## Harmonisation of Training Materials

### Training packages structured

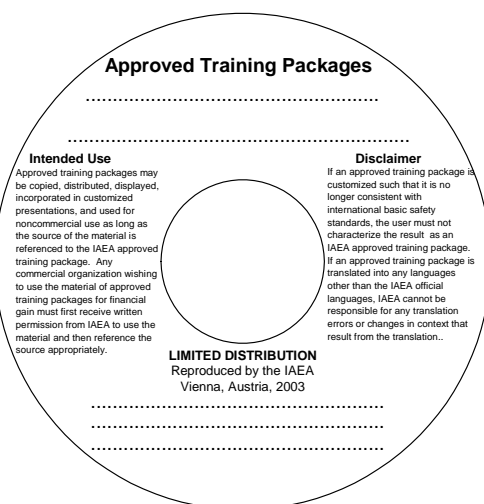
- Learning Objective
- Lesson Plan- specifying contents
- Type of activity (Lecture, demonstration, laboratory exercise..)
- Duration of Session
- Reference publications
- Written questions and answers

## Labelling of training package CDs





## Labelling of training package CDs- (cont'd)



## Postgraduate Education Course (PGEC)

### **Aimed at young professionals**

- **Argentina- Spanish**
- **Belarus - Russian**
- **Greece – English**
- **Malaysia – English**
- **Morocco- French**
- **Syria – Arabic**

## Templates for Lectures

- **Visual aids are to be in Power Point**
  - **Title of the session**
  - **General content, learning objectives**
  - **Introduction to the subject**
  - **Overview**
  - **Individual Topics**
  - **Summary**
- **There will also be short lecture notes**
- **Other sources of reference**



## Harmonization – contd...

### **PGEC in all the training centres**

- **Meeting of the course directors**
    - **Prospectus**
    - **Selection criteria**
    - **Duration of training**
    - **IAEA documents**
    - **Examination**
    - **Certificate**
- Report prepared- welcomed by the steering committee**



## Harmonization – contd...

### On the Job Training

*Working material – Steering Committee, elaborates:*

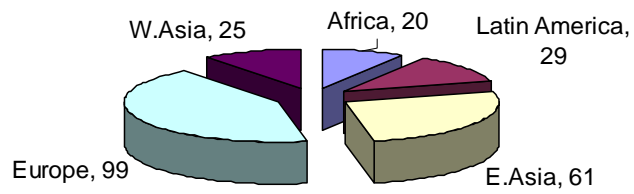
- Duration
- Selection criteria of host organisation
- Responsibilities
  - Technical Officer
  - Host Organisation

## Assistance Provided

- Template for use by Member States to determine the training needs and establish a National Training Program – reviewed by steering committee
- **Dissemination of training packages as requested**
- Fellowships/scientific visits

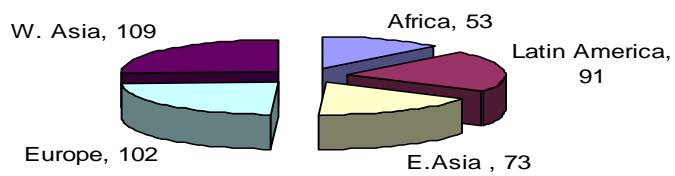
## Assistance Provided- contd

### Scientific Visits by Region, 2001-2004



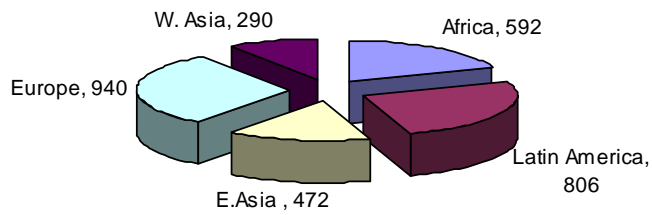
## Assistance Provided- contd

### Fellowships by Region, 2001-2004



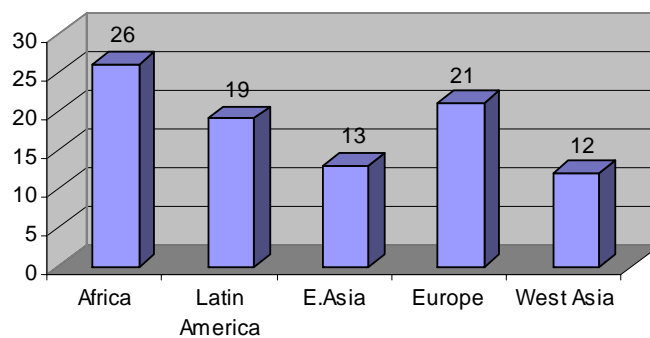
## Assistance Provided- contd

Training Course Participants by Region, 2001-2004



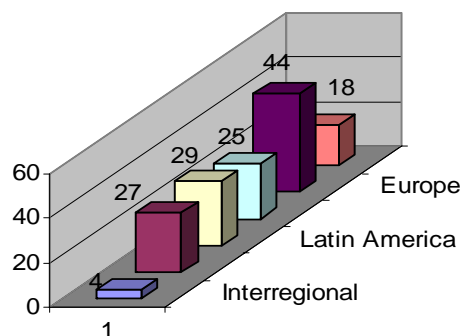
## Assistance Provided- contd

Beneficiary Countries for Fellowships and Scientific Visits 2001-2004



## Assistance Provided- contd

**Radiation Safety Training Courses by Region, 2001-2004**



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## CAPACITY BUILDING FOR RADIATION AND WASTE SAFETY INFRASTRUCTURE

2001- 2004

Region	Training course participants *)	Fellows	Scientific visits
Africa	592	53	20
East Asia and the Pacific	472	73	61
Europe	940	102	99
Latin America	806	91	29
West Asia	290	109	25
<b>TOTAL</b>	<b>3100</b>	<b>428</b>	<b>234</b>

\*) Regional training courses

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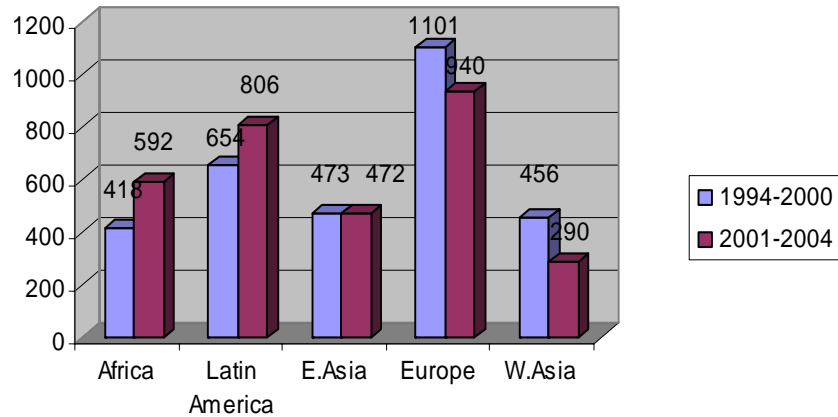
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## Assistance Provided- contd

### Training Course participants



## Sustainability

### To be achieved:

- **Through implementation of strategic plan**
  - Training events
  - Training materials
  - Train the Trainers Workshops
  - Networking
- **Continue the harmonization**
- **Good practices**



