



# **EU ACTIVITIES FOR TRAINING AND TUTORING OF NUCLEAR REGULATORY AUTHORITIES AND TECHNICAL SUPPORT ORGANISATIONS OUTSIDE EU**

**Henri Pauwels<sup>1</sup>, Pascal Daures<sup>1</sup>, Ynte Stockmann<sup>2</sup>**

<sup>1</sup> European Commission, EuropeAid

<sup>2</sup>European Commission, Joint Research Centre, Institute for Energy and Transport,

# Disclaimer

- *Facts are represented as accurately as possible.*
- *Opinions and interpretations are those of the presenter(s) and may not be taken as official opinion of the European Commission*

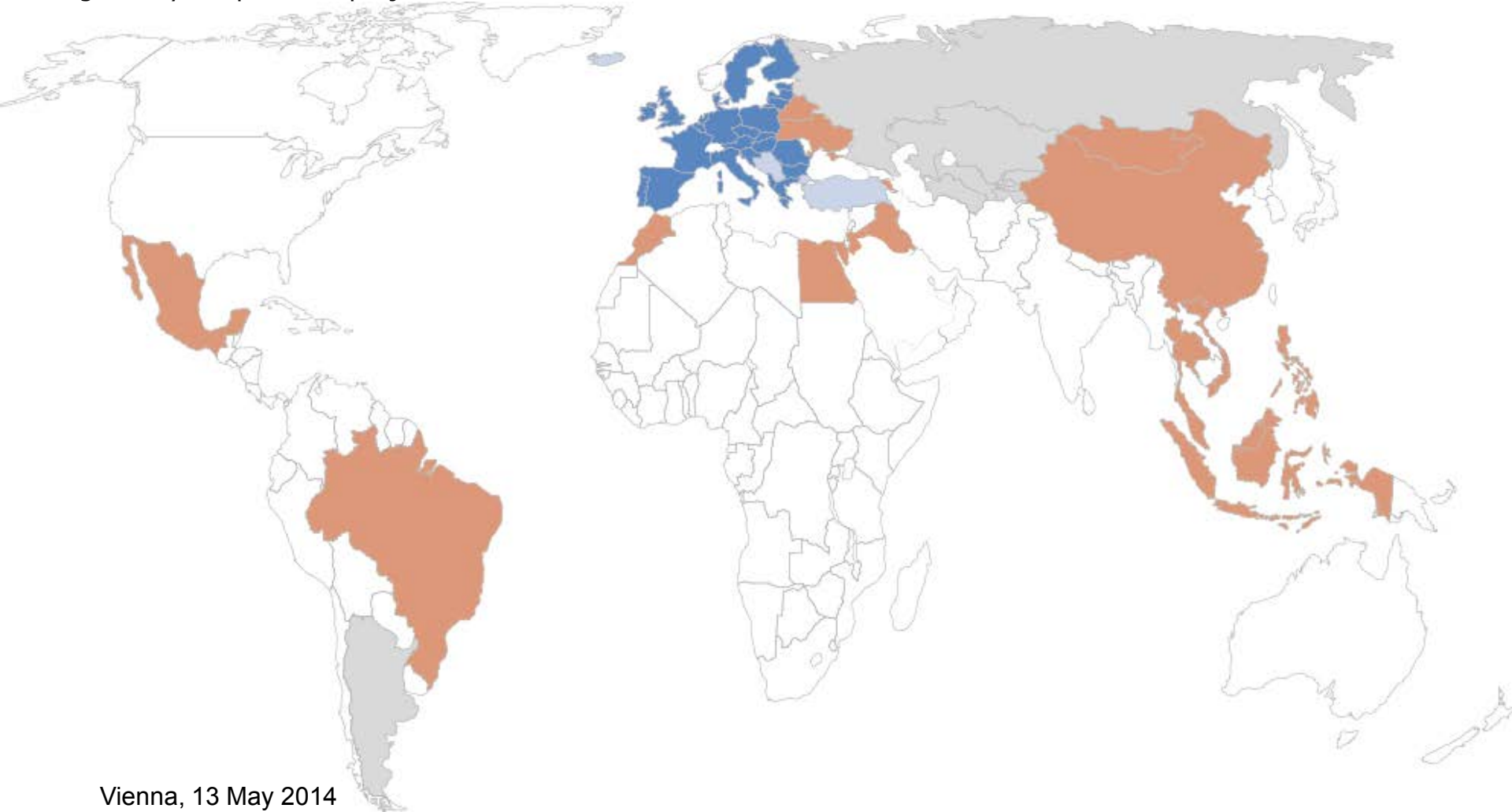
# EU Nuclear Safety Cooperation Programmes

*TACIS 1992-2006: budget about 1400 million for NS*  
*INSC 2007-2013: budget 543 million*  
*INSC 2014-2020: budget to be determined.*

*Support to the regulators remains a priority (reinforced).*

*Regulatory Support: Strengthening the regulators is used as a systematic way to improve nuclear safety worldwide.*

Ongoing and approved INSC  
regulatory cooperation projects:



Vienna, 13 May 2014

Pauwels, Daures, Stockmann

# Training and Tutoring projects

## *Ongoing:*

- *MC3.01/10.1: Nuclear Safety Regulation, Licensing and Enforcement*
- *MC3.01/10.2: Nuclear Safety Assessment and Inspection*
- *MC3.01/11.1: Nuclear Safety Regulation, Licensing, Inspection and Enforcement*
- *MC3.01/11.2: Nuclear Safety Assessment and Inspection*

## *Approved:*

- *MC3.01/13*

*3 times 3 million Euro for a total of 9 million Euro*

# Implementation of Regulatory Projects

- *Implementation by European Union regulatory experts, both regulators and technical support organisations*
- *Strong requirements on expertise*



# Aim of Training and Tutoring Projects

***Transfer of European Union nuclear safety regulatory experience and best practices***

# Courses in Nuclear Safety Regulation, Licensing and Enforcement

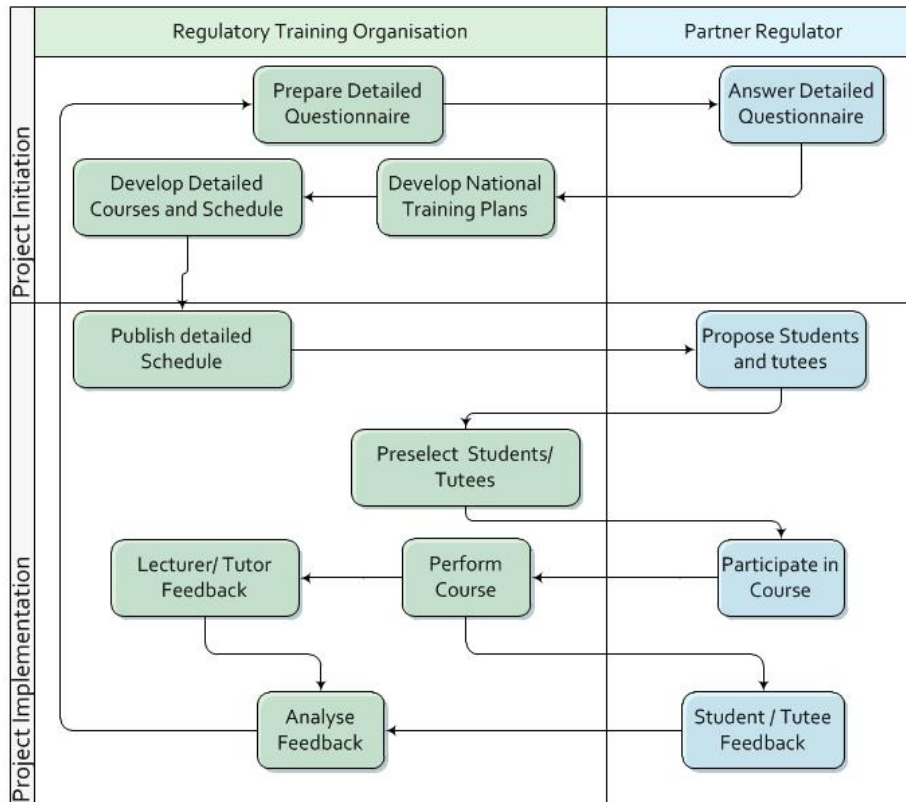
<i>EU Acquis and Radiation Protection, laws and regulation, RB functions, licensing and enforcement</i>	<i>Assessment of Operating limits and Conditions for nuclear installations</i>
<i>Management of licensing, safety focused analytical techniques, decision making</i>	<i>Assessment of Safety Assessment Reports of RRs and other nuclear installations</i>
<i>Basic Nuclear Safety Concepts</i>	<i>Assessment of criticality control</i>
<i>Site Inspection</i>	<i>Assessment of Safety Assessment Reports and PSA of NPPs</i>
<i>Inspection of I&amp;C</i>	<i>Public Information</i>
<i>Inspection of safety systems and structures</i>	<i>Assessment of safety of RW and Decommissioning activity</i>
<i>Inspecting of safety culture and Q.A.</i>	<i>Emergency Preparedness and Response of the Regulator</i>
<i>Inspection of radiation protection for the environment for nuclear reactors</i>	<i>Investigation of Operation Events</i>
<i>Inspection of occupational radiation protection</i>	<i>Periodic safety review and use of inspection reports in regulatory decision making</i>
<i>Assessment of design concepts</i>	



# Courses: Nuclear Safety Assessment and Inspection

<i>Induction to nuclear safety</i>	<i>Nuclear Security</i>
<i>Criticality Safety and Thermohydraulics</i>	<i>Decommissioning Safety</i>
<i>Ageing and Mechanical Analysis</i>	<i>Safety Management for NRA</i>
<i>Nuclear Reactor Safety I</i>	<i>Nuclear Fuel Cycle Safety</i>
<i>Nuclear Reactor Safety II</i>	<i>Operating Experience Evaluation</i>
<i>Fire Protection</i>	<i>Site Evaluation</i>
<i>Radiation Protection</i>	<i>Instrumentation &amp; Control (I&amp;C) and Electric Systems</i>
<i>Safety Assessment 1</i>	<i>Human Factors</i>
<i>Safety Assessment 2</i>	<i>Final Disposal Safety</i>

# Training and Tutoring Process



# Trainees and Tutees

*Participants' country of origin January 2012 - July 2013 and number of students and tutees.*

<i>Armenia</i>	<i>18</i>	<i>Morocco</i>	<i>12</i>
<i>Belarus</i>	<i>20</i>	<i>Libya*</i>	<i>3</i>
<i>Brazil</i>	<i>25</i>	<i>Mauretania*</i>	<i>1</i>
<i>Egypt</i>	<i>17</i>	<i>Philippines</i>	<i>11</i>
<i>Indonesia</i>	<i>10</i>	<i>Sudan*</i>	<i>4</i>
<i>Iraq*</i>	<i>1</i>	<i>Tunisia*</i>	<i>3</i>
<i>Jordan</i>	<i>24</i>	<i>Ukraine</i>	<i>30</i>
<i>Malaysia</i>	<i>17</i>	<i>Vietnam</i>	<i>32</i>
<i>Mexico</i>	<i>17</i>	<i>Yemen*</i>	<i>4</i>

*\* through ANNuR*

# Contact

- *Project overview:*  
<http://nuclear.jrc.ec.europa.eu/europeaid-safety-training/>
- *Training and Tutoring Organisations:*
  - ITER- CONSULT: <http://www.iter-consult.eu/>  
2010 project
  - ENSTTI: <http://www.enstti.eu/index.php/devco>,  
2010 and 2011 project.