In collaboration with:

TRASNUSAFE
Training Schemes On Nuclear Safety Culture

EuroCourse 3

Economic Relevance of Safety Culture in Medical Applications
A course for senior and safety managers of medical radiation facilities

Madrid, April 28-30, 2014

Organisation: Universidad Politécnica de Madrid (UPM, Spain)

In collaboration with: Spanish Society for Radiological Protection (SEPR).

Languages: The language of the training course will be English.

Main objective:

The primary objective of this course is to make senior and safety managers of medical radiation facilities aware of the economic impact of lack of safety culture, and thus the need to follow the road to accident prevention.

Learning outcomes:

- Knowledge and understanding of essential responsibilities, accountability and the role of management in building, promoting and encouraging safety culture;
- General knowledge of the context of organisational systems for Radiation Protection, Safety and Safety Culture;
- Understanding the economic impact of accidents and unplanned losses; developing or enhancing the current safety culture as a necessary task if an organisation wants the stay in business;
- Understanding the importance of management's attitude toward workers for safety.

Training methodology:

The course will be facilitated in a **highly interactive manner**.

The first day of this three-day training course consists in a condensed version of the generic training module, providing managers with the appropriate fundamentals in view of improving the safety culture in their organisations and developing excellence in human performance to proactively prevent events triggered by human error.

This part can be skipped by those having already followed the full two-day training on "Managerial competences and leadership for safety culture".

Pre-course: Before the training sessions, all registered participants will receive some suggested pre-course reading and a quiz for self-evaluation.

Post-course: Participants interested in getting a certificate of achievement will be requested to elaborate a report in the following two months after the EuroCourse with a description on how the concepts introduced during the course have been applied in their facilities.

Course Fee

Option A: ~~**1200**~~ **600 €,** including three nights accommodation, high quality menu choices and coffee breaks.

Option B: ~~**900**~~ **300 €,** including high quality menu choices and coffee breaks.

A social event – dinner for the course participants and lecturers is foreseen on Tuesday 29 April.

Personalised mentoring and course materials will be provided.

Registration and payment

Fill and submit the Registration Sheet to: sec@din.upm.es ; with copy to: eduardo.gallego@upm.es

Clearly specify the option you have chosen. In case of option A, clearly indicate your arrival and departure dates for the hotel accommodation.

Deadline for registration is April 18, 2014!

Training contents / detailed programme

Sessions **Day 1**	Facilitator / instructor	Time distribution (in h)	Schedule
1. Introduction: Objectives of the Generic and the Specific Module. – Why is Safety so important; hazards. – Examples of accidents in nuclear industrial and medical sectors	Emilio Mínguez, Eduardo Gallego, Mario González	0.5	10:00 – 10:30
2. The need for Radiological Protection. – Radioactivity, radiation and effects of ionizing radiation on health – Roles of the international organizations in the construction of the national legal frameworks. – The definition of the system of Radiological Protection, the three basic principles with emphasis on the optimization principle. – The use of dose constraints and reference levels.	Eduardo Gallego	1	10:30 – 11:30
		Coffee break (15 min)	
3. The case of the nuclear sector: The need for Nuclear Safety. Defence in depth. – Why nuclear technology is unique and special? – What is the "defence in depth" concept? – How this concept has evolved during the last years? And in this 21st Century? – What is a safety analysis? – What should I know about this?	Mario González	1	11:45 – 12:45
4. Safety Culture definition. – Definition and basis – How to work on culture – Models – Safety Culture Measurement – Safety Culture Improvement	Mario González	1	12:45 – 13:45
		Lunch break (1h)	13:45 – 14:45

Sessions **Day 1**	Facilitator / instructor	Time distribution (in h)	Schedule
5. Excellence in Human Performance (Human Performance Fundamentals). – What is Human Performance/Human Error/Principles of Excellence – Definitions /Individual Behaviour/Key Leadership Practices – Anatomy of an Event/Error Precursors/Fallibility and Vulnerability – Traps of Human Nature/Performance Modes/Leadership Skills – Blame Cycle/Team Skills Ladder/Reinforcement and Coaching – Human Performance System/Organization – Summary and Conclusions	Mario González	2	14:45 – 16:45
		Coffee break (15 min)	
6. Case studies – Exercise to show the influence of Error Precursors – Determine the different "subcultures in your organization"	Mario González	1	17:00 – 18:00

Sessions **Day 2**	**Facilitator / instructor**	**Time distribution (in h)**	**Schedule**
7. Introduction to specific module. *Economic relevance of Safety Culture in medical applications of radiation sources*	E. Mínguez/ Eduardo Gallego / F. González	0.5	9:00 – 9:30
8. The ICRP recommendations for radiological protection in medicine.	Eliseo Vañó	0.75	9:30 – 10:15
9. Case studies (including interaction): – General overview of some major accidental medical exposures in radiotherapy. Problems identified. Patterns in the lessons learned.	F. González Pierre Scalliet	1	10:15 – 11:15
		Coffee break (15 min)	
– Presentation of full case studies: Accident occurred in the linear electron accelerator at the University Hospital in Zaragoza, Spain, December, 7 – 9, 1990.	Montserrat Ribas	0.5	11:30 – 12:00
– Radiotherapy accident at the Hospital Jean Monnet in Épinal, France (2004-2005)	Jean-Marc Simon	0.5	12:00 – 12:30
– Study of the cases presented in working groups / Conclusions	Fernando González / Pierre Scaliet / Montserrat Ribas/ Jean-Marc Simon	1	12.30 – 13.30
		Lunch break (1h)	13.30 – 14:30
10. Economic impacts of lack of safety culture. Round Table: – Relationship between safety and production. – The cost of accidents and the effect of unplanned losses on the company. – The development of safety culture as a way to accident prevention. – Benefits of developing a strong safety culture: – Logical prioritization of safety needs – Compliance with legal safety responsibilities – More efficient maintenance scheduling and resource utilization – Continuous improvement of operational processes – Improved employee morale and productivity – Establishing a marketable safety record – Reduction of direct and indirect costs of accidents – Avoiding incident investigation costs and operational disruptions – …	Eliseo Vañó / Christian Lefaure / Pierre Scalliet / Montserrat Ribas/ Jean-Marc Simon Fernando González	1.5	14:30 – 16:00
		Coffee break (15 min)	

Sessions **Day 2**	**Facilitator / instructor**	**Time distribution (in h)**	**Schedule**
11. Economic benefits of good organization in medical radiology, nuclear medicine and radiotherapy services, including examples. Stimulated discussion. - Included example: Optimization analysis on the use of F-18 for PET studies.	Eliseo Vañó / Pierre Scalliet / Jean-Marc Simon Fernando González Christian Lefaure	2 (0.5)	16:15 - 18:15
Social act – Dinner			20:00 – 22:30

Sessions **Day 3**	Facilitator / instructor	Time distribution (in h)	Schedule
12. Safety culture needs with regard to the use of new advanced technologies in radiodiagnostics, radiotherapy and nuclear medicine.	Andrea Pola	1	9:30 – 10:30
13. The industry perspective and experience with regard to safety improvement (1h): – Radiological Protection and safety in minimally invasive image guided surgery procedures	F. Millás	1	10:30 – 11:30
		Coffee break (15 min)	
14. Final reflection exercises: the trainees will be invited to present some improvement opportunities related to their own expertise	F. González / All	1	11:45 – 12:45
15. Course feedback	F. González / All	0.5	12:45 – 13:15
16. Closure and adjourn		0.25	13:15 – 13:30

TOTAL DURATION: 18.5 h

Abbreviated Generic Module: 6.5 h

Specific Module: 12 h

Training team

Coordinators:

Emilio Mínguez.
Professor of Nuclear Technology. Member of the Nuclear Engineering Department of UPM.

Eduardo Gallego
Professor and Director of the Nuclear Engineering Department of UPM.

Facilitator:

Mario Gonzalez Álvarez
Tecnatom staff member; Safety Culture expert; Certified INPO-WANO facilitator. Safety Management Advisor and Human Performance Project Manager.

Mentor:

Fernando González.
Tecnatom staff member; Safety Culture expert. Executive Coach. Head of Leadership and Safety Culture at Tecnatom. Leader of the task group of the Spanish Society of Radiological Protection on Radiological Protection Culture, in cooperation with IRPA.

Expert Lecturer:

Eduardo Gallego
Professor and Director of the Nuclear Engineering Department of UPM. President of the Spanish Radiation Protection Society. Member of the Executive Council of the International Radiation Protection Association. Member of the Committee 4 of the International Commission of Radiological Protection.

Expert Lecturer:

Eliseo Vañó
Full Professor of Medical Physics at the Faculty of Medicine of the Complutense University in Madrid. Head of the Medical Physics Service at the San Carlos University Hospital. Chairman of the Medical Working Party on Medical Exposures of the Article 31 Group of Experts of the EURATOM Treaty. Chairman of the Committee on Protection in Medicine of the International Commission on Radiological Protection (ICRP).

Expert Lecturer:

Pierre Scalliet
Professor in oncology at the medical faculty and head of the Radiation Oncology department of Cliniques Universitaires Saint Luc. He was secretary of ESTRO (1992-97), then administrator (1997-99). During his term he coordinated the establishment of European norms for quality assurance in the EU. He is also an expert at IAEA in several issues regarding Quality Assurance, and specifically of the Clinical audit part (QUATRO). Prof. Scalliet is frequent lecturer at national and international meetings, as well as the coordinator of the yearly ESTRO teaching course "quality and safety". He is author or co-author of over 120 publications and about 10 textbooks. He published with Canadian and American colleagues "Quality and Safety in Radiotherapy" in 2012.

Besides his teaching and academic activities, P Scalliet is a busy MD, with important clinical responsibilities (breast cancer, digestive cancers, brachytherapy). He is a relentless supporter of multidisciplinary medicine, a founding member and one of the directors of the Cancer Centre at UCL. Finally, P Scalliet is a member of Committee 3 of ICRP since 2013.

Expert Lecturer:

Jean-Marc Simon
M.D., Radiation oncologist at Pitié Salpetrière Hospital in Paris, France. In 2007, he was commissioned by the French Ministry of Health to come at Épinal Hospital to organize the management of patients overexposed during the most serious radiation accident occurred in France between 2004 and 2005. During his mission, other malfunctions were discovered, which occurred during the past twenty years. Overall, more than 5,500 patients were overexposed between 1986 and 2006. Among the 24 most seriously overexposed patients, ten died from radiation related injuries.
Jean-Marc Simon leads a program research to improve scientific understanding of iatrogenic effects associated with overexposure to ionizing radiation.

Expert Lecturer:

Christian Lefaure. Senior Consultant in Radiological Protection, National Coordinator of the French regional Radiological Protection officers and Qualified Expert networks, Chair of the IAEA-ISEMIR (International System on Occupational Exposure in Medicine, Research and Industry).

Expert Lecturer:

Montserrat Ribas
Medical physicist. Head of Medical Physics Department (Servei de Radiofísica I Radioproteccio) Hospital de la Santa Creu i Sant Pau (HSCSP), Barcelona (Spain).
Chair of National Commission of Hospital Radiophysics (consulting body of Ministry of Health). Spain

Expert Lecturer:

Andrea Pola
Professor of the courses "Radioactivity" and "Laboratory of Physics of the Nucleus" at Politecnico di Milano, Italy. His research activities mainly concern the analysis of population risk in radiodiagnostics and the development of novel systems for the radiation protection in medical facilities.

Expert Lecturer:

Francisco Millás
Product manager for Image Guided Surgery, since 1991 in Philips.
His career has always been linked to Electro-medicine equipment. First as a coach and participating in the development of equipment and finally in the areas of marketing and product support. The areas of medical application in which he has worked include: Diagnosis of Pulmonary Mass, Critical Care, Laboratory, Sports Medicine, Neurophysiology, Analysis and study of sleep function, and today, Image-guided Minimally Invasive Surgery.

Venue: Madrid, Spain

NH Zurbano Hotel

Zurbano, 79-81.
28003 Madrid (Spain):
Tel. +34.91.4414500
Email: nhzurbano@nh-hotels.com

Website: http://www.nh-hotels.com/nh/en/hotels/spain/madrid/nh-zurbano.html

Closest Metro station: “Gregorio Marañón” (exit: Museo Ciencias Naturales)

Also very close: “Nuevos Ministerios” (direct line to the Airport)

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A course for senior and safety managers of medical radiation facilities

Registration Form

Please fill and submit this Registration Form to: sec@din.upm.es ; with copy to: eduardo.gallego@upm.es or by fax to +34 91 336 3002

Name: .....

First name: .....

Nationality: .....

Passport Number: .....

Organization and Department: .....

.....

Address: .....

.....

Phone: ---------- Fax: ----------

E-mail: ----------

Registration option and Course Fee Clearly specify the option (A or B) you have chosen

Personalised mentoring and course materials will be provided for all participants.

☐ **Option A:** ~~1200~~ 600 €, including three nights accommodation, high quality menu choices social dinner and coffee breaks.

For option A, please provide the following details for the hotel:

Arrival date: ---------- Departure date: ----------

NH Zurbano Hotel

Zurbano, 79-81.
28003 Madrid (Spain):

Tel. +34.91.4414500
Email: nhzurbano@nh-hotels.com

Website: http://www.nh-hotels.com/nh/en/hotels/spain/madrid/nh-zurbano.html

☐ **Option B:** ~~900~~ 300 €, including high quality menu choices, social dinner and coffee breaks.

A confirmation with payment instructions will be sent upon receiving your registration form

Deadline for registration is April 18, 2014!