



Questionnaire no. 1
for the Advisory Board and the End-User Group Members
of the ANNETTE Project
November 22nd, 2016

FOREWORD

This short questionnaire is linked to the .ppt presentation of the ANNETTE Project for Stakeholders and in particular of the courses to be set up in the frame of WP2. It is assumed that the Members of the Advisory Board and the End-User Group of the ANNETTE project, after considering the presentation or the related videoclip, will answer to our questions, providing the project with their qualified feedback. The European Nuclear Education Network (ENEN), as promoter and Coordinator of the ANNETTE Project, thanks you in advance for your valuable contribution.

For your convenience, please, consider the list of courses in ANNEX I.

Suggested Comments

1. Please, comment about the general plan of ANNETTE in setting up and coordinating existing courses for Continuous Professional Development

- **What do you most appreciate of it?**

(...)

- **What do you find risky or difficult to achieve?**

(...)

- **What do you suggest as possible improvement(s)?**

(...)

- **Rate your expectations in terms of possible attendance to the proposed courses in the future in general terms (low, medium, high; use any adjective you find appropriate or an extended sentence)?**

(...)

- **How do you think we could be able to better stimulate attractiveness for possible learners?**

(...)

- **In particular, how effective do you think can be the use of e-learning tools in stimulating attractiveness?**

(...)

- **Could your Organisation be involved in any way in promoting attendance to courses, e.g., by advertising them, supporting attendance or giving to their participants a special value in view of job placement?**

(...)



2. Please, comment on the range of courses collected up to now within ANNETTE, the suitability for maintaining nuclear experts (roughly 16% of nuclear workforce), for nuclearizing specialists in other matters (74%), for providing nuclear aware personnel (10%). As mentioned in the presentation, there is no real attempt to be exhaustive at this stage, but we can start with better bases, if possible, following your suggestions.

- Which courses do you find more necessary / relevant in the present situation for keeping the needed core of nuclear experts?

(...)

- Which courses do you find more necessary / relevant in the present situation for keeping the needed learning opportunities for nuclearization of specialists in non-nuclear disciplines?

(...)

- Which courses do you find more necessary / relevant in the present situation for keeping the needed learning opportunities for nuclear aware personnel?

(...)

- Which gaps do you identify in the presently offered courses?

(...)

- Can you suggest possible course providers to be approached in order to fill the identified gaps?

(...)

Free Comments

Please, add any comment or remark that you believe may be useful for successfully running ANNETTE, with main regard to the delivery of Courses for the Master and the Summer School

(...)

Date,

Name and Surname:

PLEASE RETURN THIS FORM TO walter.ambrosini@ing.unipi.it

THANK YOU FOR YOUR CONTRIBUTION!



ANNEX I

Tables of courses

		ECTS	
ESARDA Courses	“Nuclear Safeguards” Course in Advanced Master/VET	6	
	Workshop on Safeguarding NFC	1	
	Workshop on Proliferation Resistance	1	
	Workshop on State-level Safeguards Concept	1	
	Workshop on Safeguards-relevant Open Source Information	1	10
in kind	MOOC: Course “Introduction to Safeguards” (for students in Nuclear Engineering, Nuclear Energy etc.)		
	ESARDA Course on Nuclear Safeguards	3	

		ECTS	
KIT (IFRT+INE+ANPS)	Fuel Cycles, Decommissioning, Waste Disposal and Safeguards	3	
	Reactor Exercises	2	
	Design Basis Accidents and its Simulation Tools	3	
	Computational fluid dynamics with OpenFOAM	3	
	Design of Pipelines against Earthquake Loads	3	14



			ECTS
KIT (IFRT+INE+ANPS)	1) Flow modelling in Fuel Assemblies		3
offered in-kind:	2) Monte Carlo criticality and shielding calculations (http://www.anps.kit.edu/307.php)		3
1/3 of the price	3) Reactor physics calculations with deterministic methods (http://www.anps.kit.edu/309.php)		3
for ANNETTE attendants	4) Beyond-design accidents, core-melt accidents (http://www.anps.kit.edu/311.php)		3
Information available on indicated website	5) Coupled Neutron Kinetics /Thermal Hydraulic Codes for Safety Assessment of Nuclear Power Plants (http://www.anps.kit.edu/313.php)		3
	6) Thermohydraulic Stability Analysis (http://www.anps.kit.edu/319.php)		3
	7) Technology and Management of the Decommissioning of Nuclear Facilities (http://www.anps.kit.edu/321.php)		3
	8) Containment thermohydraulics and hydrogen behavior		3
	9) Stress Analysis (http://www.anps.kit.edu/327.php)		3
	10) Light Water Reactor (LWR) core design and fuel management (http://www.anps.kit.edu/331.php)		3
	11) Light Water Reactor (LWR) core feedback and transient response (http://www.anps.kit.edu/333.php)		3
	12) Severe Accident Simulation in Liquid Metal Reactors (http://www.anps.kit.edu/293.php)		3
			36

			ECTS
JRC-ITU	(1) Nuclear Fuels (including severe accident conditions); (as part of a master – contact person D. Manara)		3
	(2) Back end of the nuclear fuel cycle (as part of a master – contact person S. Van Winckel)		3
	(3) Spent fuel and radioactive waste management (including legal basis, ethical aspects, the role of storage, establishing national programs); (as contribution to a summer-school – contact persons G. Buckau and A. Van Kalleveen)		1
	(5) Hands-on training in the area of radiation protection (as part of a master – N. Rausch)		3
	(6) Contribution to preparation of the safeguard module (through ESARDA consortium – contact person K. Abbas)		9

In kind

(4) Physics and chemistry of actinides (to be discussed)

International School on Decommissioning and Waste Management (to be discussed)



		ECTS	
CVUT	Experimentation in Josef Underground Facility	4	
UL	Site selection for radioactive waste disposal	4	
UL+UPM	Radioactive waste disposal	4	12

		ECTS	
IFIN-HH	Radon and its radiological impact	2	
	Principles of Radiation Protection and International Framework. Regulatory Control	2	4
In kind	•Sealed and Unsealed Radioactive Sources. Classification. Characterization. Performance requirements. Associated risks.		
	or		
	•Particle accelerators and related radiation protection issues		

UPC	Operation of Nuclear Power Plants. Practices with nuclear power plant conceptual simulator at UPC: 1 week (30 h - 6h/day) including 2 practical sessions each day. Power plant conceptual simulator : SIREP-1300		
		ECTS	

		3	
CVUT	Advanced training course at VR-1 reactor		3

		ECTS	
UCL	Nuclear Thermal-hydraulics	6	6

Single/two-phase choked flow applicable to the LOCA (for a Summer Course)

ECTS

BNEN Courses (60 ECTS) are also offered



		ECTS	
UMAN	NTEC N03 Radiation & Radiological Protection	3.5	
	NTEC N06 Reactor Materials And Lifetime Behaviour	3.5	
	NTEC N09 Policy, Regulation & Licensing	3.5	
	NTEC N23 Radiological Environmental Impact Assessment	3.5	14

		ECTS	
INSTN	Basic operation of nuclear reactors	3	
	Neutronics for light water reactors	6	
	Thermal Hydraulics of light water reactors	6	
	Safety and operation of PWRs	6	21

		ECTS	
UPM	1.Nuclear waste management course (6 ECTS)	6	
	2.Radiological protection course (3 ECTS)	3	
	3.Nuclear technology course (3 ECTS)	3	12

		ECTS	
CIRTEN	Single and Two-Phase Thermal-hydraulics (for nuclear reactors)	6	
(all in kind)	Structural design for Safety of Nuclear Reactors	6	12
	<i>more to come</i>		

UCLAN	Nuclear Safety, Security and Safeguards (MSc)	90	
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