



JRC TRAINING REPORTS

Training Catalogue 2018 / 2019

Joint Research Centre – JRC. G – Directorate for Nuclear Safety and Security

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May, F

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Abstract

This training catalogue presents the trainings given in 2018 and the trainings planned for the year 2019 by the Joint Research Centre – Directorate for Nuclear Safety and Security.

1 Introduction

Context

The mission of the JRC Directorate G for Nuclear Safety and Security is the implementation of the JRC Euratom Research and Training Programme, the maintenance and dissemination of nuclear competences in Europe to serve both "nuclear" and "non-nuclear" Member States.

Knowledge sharing and mobilisation of skills are key to the successful implementation of JRC.G's mission and to achieving EU's policy objectives. Education and Training (E&T) form important parts of solution to societal challenges and are an obvious avenue for dissemination of new ideas.

For this reason the scientific units of JRC.G organise and execute E&T activities in the area of nuclear safety and security, management of nuclear materials and safeguards and crisis management in nuclear. These trainings are an integral part of the JRC.G core business who offers added value E&T supporting the implementation of EU policies at EU, national and regional levels. In 2019 JRC.G plans to organise or co-organises various short courses, summer schools and lectures. The Directorate also provides "hands-on" trainings in the fields of radioprotection and nuclear security.

When this training catalogue was established (February 2019), the JRC Work Programme 2019 was not yet approved. Therefore the list of E&T activities may not be complete. In particular the trainings which will be organised on demand during the current year are missing.

Objective

The aim of this catalogue is to provide an overview of all trainings delivered by the JRC.G in 2018, and planned to be delivered in 2019. It provides for transparency and visibility of the JRC training activities in the field of nuclear safety, security and safeguards. It is also a useful tool in view of integrating all JRC trainings into the JRC Academy. The JRC Academy concept was designed in order to increase the coordination of E&T activities across the JRC which should focus on science-to-policy courses, scientific and technical capacity building, and on-the job training. In addition, this catalogue is a support to a better coherent approach when it comes to developing and implementing JRC.G's E&T activities.

Methodology

Information was extracted from the European Commission's Publication Management System (PUBSY) where trainings should be introduced and approved before they are delivered. For on demand trainings that cannot be planned and do not appear in PUBSY, information was collected in writing from the Heads of Unit. All information retrieved from PUBSY was eventually reviewed by the units in order to ensure that the results were correct.

Analysis

The education and training activities of JRC.G are mainly individually organised at the request of a client/stakeholder or executed in collaboration with a stakeholder. Some technical units, e.g. JRC.G.2 – Standards for Nuclear Safety, Security and Safeguards, give their training activities mostly on demand. As a result, they vary in number and content according to the request and the nature of the audience.

The information collected showed that:

- in 2018 seventy-three (73) trainings were given by five units; and
- in 2019 sixty-nine (69) trainings are planned by six units.

There are two main limitations:

- there is no information on trainings that will be organised on demand; and
- there is no information on the total number of participants.

As regards the nature of trainings delivered, it varies from workshops, summer/winter schools, hands-on-training, lectures, to short courses. It came out that most of the trainings are short courses.

An analysis of the results also showed that courses were mostly given:

- to other Directorate-Generals (e.g. DG for Energy),
- at the request of other Directorate-Generals (DG for Migration and Home Affairs and DG Taxation and Customs Union), or
- in the framework of a collaboration with international organisations like the International Atomic Energy Agency (IAEA).

As for the Summer and Winter Schools, they were mostly dedicated to students.

Outlook

It is expected that a Training catalogue for JRC.G be published yearly from 2019 onwards. Additionally future catalogues should provide information on the number of participants and on the learning outcomes of the trainings offered.

2 JRC.G Trainings per Unit

2.1 JRC.G.2 – Standards for Nuclear Safety, Security and Safeguards

JRC.G.2 provides high-quality reference nuclear data, measurement standards, science-based policy advice and training in support of EU policies related to nuclear safety, security and safeguards.

Unit G.2 operates two accelerator-based nuclear data facilities, an underground laboratory, radionuclide metrology and nuclear reference materials laboratories based in Geel, Netherlands.

The unit cooperates closely with international organisations and offers relevance-driven open access to its nuclear facilities for external researchers from EU Member States and countries associated to the Euratom Research Programme.

Training activities are mostly given on demand and vary in number and detailed content according to the request and the nature of the audience. They are updated with timely examples from ongoing works and interests. The themes and domains of competence for which training activities are given vary much less.

Contact for training and education activities of JRC.G.2:
Arjan Plompen (Mr), Head of Unit (Arjan.Plompen@ec.europa.eu)

2.1.1 2018

Table 1. Training given by JRC.G.2 in 2018

Title of Training	Event	When	Where	For whom
Neutron induced reactions: from experimental observables to model parameters in the resonance region	3 rd n_TOF Winter School	15. –19. 01.2018	Zermatt, Switzerland	n_TOF PhD students
Adjustment of model parameters by a fit to experimental data				
RadioNuclide Metrology - Introduction	AEOI Winter School of "Particle detection, Dosimetry and Shielding"	12. – 16. 02.2018	Tehran, Iran	Students and Scientists
PomPlot & Power-Moderated Mean (PMM)				
Traceability to the Becquerel				
Is decay constant?				
4pi beta-gamma coincidence counting				
Counting at a defined solid angle				
The half-life and its uncertainty				

Introduction to standards	Workshop for the participants of the 2017 EC Proficiency Test on measurement of gamma-ray emitting radionuclides in food and feed	30.01. – 01.02 2018	JRC Geel	Gamma-spectrometry practitioners
Mass measurements				
Advanced mass measurements				
Scope, legislation and organisation of intercomparisons				
Draft of CEN standard: Animal feed Determination of the radionuclides ^{131}I , ^{134}Cs and ^{137}Cs				
Reference material preparation				
Evaluation of EC Proficiency Test (PT) 2017 results				
European legislation				
Introduction to the Course and the RadioNuclide Metrology Laboratories of JRC-Geel				
The basic equation for gamma-ray spectrometry				
Instrumentation				
Gamma-ray Spectrometry-2: Decay chains and branching				
Full Energy Peak Efficiency				
Monte Carlo simulations				
Ultra low-level gamma-ray spectrometry - The underground laboratory HADES				
Underground science applications - Part 1				
Underground science applications - Part 2: Rare decays				
Aspects of gamma-ray spectrometry - 1				
Aspects of gamma-ray spectrometry - 2: Ways to obtain the full energy peak efficiency of a HPGe-detector				
Reference values				

Destructive' Sample Analysis for Nuclear Safeguards	17th ESARDA COURSE on Nuclear Safeguards and Non Proliferation	09. – 13. 04.2018	JRC Ispra	Students and Scientists
Scientific Workshop on NU-BALL 2	NU-BALL 2: Results from the first experimental campaign and prospects for future exploitation		JRC Geel	Students and Scientists
CEA course on gamma-ray spectrometry		12. – 13. 06.2018		CEA
Hands-on training to CEA staff on the use of a conversion electron suppression magnet system for alpha spectrometry.				
Neutron induced interaction cross section experiments	Frederic Jolio & Otto Hahn, Summer School on Nuclear Reactor, "Physics, Fuels and Systems"	22. – 23. 08.2018	Aix-en-Provence, France	Students
Training course on gamma-ray spectrometry		13. – 15. 11.2018	Luxembourg, Luxembourg	DG ENER
Workshop on underground science applications		05. – 07. 12.2018	IAEA Environment Laboratories, Monaco	Staff of Under - ground laboratories

2.1.2 2019

Table 2. Training planed by JRC.G.2 for 2019.

Title of Training	Event	When	Where	For whom
Training course on standards in support of nuclear decommissioning	ELINDER training course on decommissioning metrology	tbc		ELINDER
Training course on method validation and intercomparisons				
Training course on uncertainties and gamma-ray spectrometry				
Training on analytical techniques under EC B 1752: Training on Mass Spectrometry and other Analytical Techniques		tbc	JRC Geel	Scientists
Tutorial on the Monte Carlo code FLUKA		tbc	JRC Geel	SCK-CEN
Training in NDA, DA, IDMS and uncertainty estimation		04. – 07. 02.2019	JRC Geel	IAEA
Training on PU destructive and non-destructive measurements (Hands-on Training)		04. – 06. 02.2019	JRC Geel	SCK-CEN and IAEA
Training course in mass metrology and associated uncertainty evaluation		15.03. 2019	JRC Karlsruhe	internal JRC
Workshop on EC REM Radon-in-Water Proficiency Test & Training course on measurement of radon and radioactivity in water	Scientific Workshop	26. – 29. 03.2019	JRC Geel	Scientists
ANNETTE course on Nuclear Lifecycle		08. – 12. 07.2019	Karlsruhe Institute for Technology / JRC Karlsruhe	Scientists
Training in Nuclear Safety and Science Applications		22. – 27. 09.2019	Ecole Joliot Curie, Caes d'Oleron, France	Students
Nuclear Fission Dynamics and the Emission of Prompt Neutrons and Gamma Rays		24. – 26. 09.2019	JRC Geel	Scientists
Gammy-ray spectrometry course		November 2019	JRC Geel	SCK-CEN + internal JRC

2.2 JRC.G.I.4 – Nuclear Reactor Safety and Emergency Preparedness

JRC.G.4's mission is to provide fundamental knowledge, scientific and technological data for materials innovation, physical model development and numerical simulations.

The unit also contributes to the development of nuclear codes & standards with the aim to add to the safe operation of current and future innovative and advanced nuclear reactor systems.

Contact for training and education activities of JRC.G.I.4:
Concetta Fazio (Ms), Head of Unit (Concetta.Fazio@ec.europa.eu)

2.2.1 2018

Table 3 Training given by JRC.G.I.4 in 2018.

The High Temperature Reactor	Seminar Austrian Nuclear Society	30.11. 2018	Technical University Vienna, Atominstitut	Members of Austrian Nuclear Society, ENS Young Generation, Students
Liquid Metal facilities; focus on sodium facilities design & safe operation	ESFR-SMART European workshop	22. -24. 05.2018	Roma & La Casaccia, Italy	Master and PhD students + young professionals

Source: JRC.

2.2.2 2019

Table 4. Training planed by JRC.G.I.4 for 2019.

Title of Training	Event	When	Where	For whom
"Safety of Gen-IV Reactors"	Generation IV International Forum	19.02. 2019	Online	Members of the Gen.V Internat. Forum
Lecture "Databases of Thermalhydraulic Experimental Facilities"		April 2019	University of Catalonia, Spain	Master students of Nuclear Engineering EMINE
Instrumentation for the Safety of Liquid Metal Facilities	ESFR-SMART Project	10. – 12. 04.2019	Dresden, Germany	Master and PhD students + young professionals
European Sodium Fast Reactor: an Introduction	GEN IV webinar	15.04. 2019	online	Policy makers, managers, regulators, students, general public
Course on Deterministic Modelling of Nuclear Systems	ESFR-SMART Project	09. – 13. 09.2019	Göteborg , Sweden	Master and PhD students
Potential impact of nuclear cogeneration on economy, energy policy and climate change mitigation	Generation IV International Forum webinar	November 2019 (tbc)	online	Policy makers, GIF members, students
Data management training courses in the scope of GEMMA, MEACTOS and M4F projects		tbc	online	

Source: JRC.

2.3 JRC.G.I.5 – Advanced Nuclear Knowledge

The mission of unit JRC.G.I.5 is to retain expertise and increase awareness in basic nuclear materials science, build the scientific reputation of JRC as a trustworthy body for policy advice, and promote the integration of basic nuclear research at European level.

The unit 'Advanced Nuclear Knowledge' performs basic and applied research on actinide elements and compounds, exploring physics and chemistry issues relevant for understanding the behaviour of nuclear materials at the most fundamental level. It develops non-energy applications of nuclear materials, such as radioisotope thermoelectric generators for space explorations and target alpha-immunotherapy techniques to fight cancer and other diseases. The unit develops and maintains numerical codes for performing thermal, mechanical, and neutron-physical analysis of cylindrical fuel rods in nuclear reactors.

Being a European centre of excellence in actinide research, and one of the leading actors in the field worldwide, the JRC.G.I.5 unit supports the community of scientists who use the JRC facilities for research on actinides, offering educational opportunities and promoting the integration of basic nuclear research at European level.

Contact for training and education activities of JRC.G.I.5:
Roberto Caciuffo (Mr), Head of Unit (Roberto.Caciuffo@ec.europa.eu)

2.3.1 2018

Table 5. Training given by JRC.G.I.5 in 2018.

Title of Training	Event	When	Where	For whom
Fuel performance modelling by means of TRANSURANUS: Transuranus training course 2018		22. – 26. 01.2018	JRC Karlsruhe	Young researchers from Technical safety organisations, research centres, universities and industry.
Standard procedure for synthesis and quality control of ²²⁵ Actinium-PSMA-617 – Hands on training		20. – 22. 03.2018	Steve Biko Academic Hospital, Pretoria, South Africa	IAEA
Regional Workshop on Preparation and Clinical Utilization of Radiolabelled Therapeutic Peptides		04. – 08. 6.2018	Warsaw, Poland	IAEA, POLATOM

Source: JRC.

2.3.2 2019

Table 6. Training planed by JRC.G.I.5 for 2019.

Title of Training	Event	When	Where	For whom
Training on safe handling of alpha emitters		tbc	Debrecen University, Hungary	IAEA
Fuel performance modelling by means of TRANSURANUS: Transuranus training course 2019		04. – 08. 02 2019	JRC Karlsruhe	Users of TRANS-URANUS
Training on safe handling of alpha emitters and standard procedure for synthesis and quality control of Ac-PSMA617		18. – 19. 02.2019	Yeditepe University, Istanbul, Turkey	IAEA
Fuel performance modelling by means of TRANSURANUS: Transuranus training course 2019		13. – 17. 05. 2019	JRC Karlsruhe	Users of TRANS-URANUS
Technical Meeting on the Preparation and Quality Control of Alpha/Beta Emitter Labelled Peptides		June 2019	Instituto Nacional de Investigaciones Nucleares, La Marquesa Ocoyoacac, Mexiko	IAEA
Neutrons and Muons for Magnetism	Summer school of the Società Italiana di Spettroscopia Neutronica	02. – 06. 09.2019	JRC Ispra	Open to PhD students, post-doctoral research associates and early-career scientists

2.4 JRC.G.II.6 – Nuclear Safeguards and Forensics

The mission of the 'Nuclear Safeguards and Forensics' unit is the development of techniques and methodologies to ensure efficient and effective safeguards of nuclear materials, detection of clandestine nuclear activities and to provide means to detect and combat illicit trafficking.

The unit carries out R&D activities in direct scientific and operational support to the Directorate Generals of the European Commission, the EU Member States authorities and the IAEA. It operates on behalf of the Commission the Euratom On-Site Laboratories at large EU nuclear reprocessing plants.

Contact for training and education activities of JRC.G.II.6:

Klaus Lützenkirchen (Mr), Head of Unit (Klaus-Richard.Luetzenkirchen@ec.europa.eu)

2.4.1 2018

Table 7. Training given by JRC.G.II.6 in 2018.

Title of Training	Event	When	Where	For whom
Sustaining and Exercising Existing Nuclear Forensic Capabilities	Workshop on Applications of Existing Capabilities to a Nuclear Forensics Investigation	30.01. – 02.02. 2018	Tbilisi, Georgia	DoE
ITDB POC Roles, Responsibilities and Best Practices	Workshop on IAEA's Incident and Trafficking Database (ITDB)	27. – 28. 02.2018	Karlsruhe, Germany	IAEA
Complementary Access Exercise		12. – 16. 03.2018	JRC Karlsruhe	IAEA
Introduction to Response of a Nuclear Security Event	Workshop on IAEA's Incident and Trafficking Database (ITDB)	13. – 14. 03.2018	Karlsruhe, Germany	IAEA
Front Line Officers Training Course on Radiation Detection Techniques		19. – 23. 03.2018	JRC Karlsruhe	DG TAXUD
Front Line Officers Training Course on Radiation Detection Techniques		23. – 27. 04.2018	JRC Karlsruhe	DG TAXUD
Counter Nuclear Smuggling	Counter Nuclear Smuggling Workshop 2018	15. – 17. 05.2018	JRC Karlsruhe	US DoE

Front Line Officers Training Course on Radiation Detection Techniques		04. – 08. 06.2019	JRC Karlsruhe	DG TAXUD
Messübungen für die allgemeine Gamma Spektrometrie – Hands on Training		18. – 22. 06.2018	JRC Karlsruhe	BfS
Front Line Officers Training Course on Radiation Detection Techniques		02. – 06. 07.2018	JRC Karlsruhe	US DoE
Front Line Officers Training Course on Radiation Detection Techniques		03. – 07. 09.2018	JRC Karlsruhe	US DoE
ITDB POC - Roles & Responsibilities, National Network and Best Practices		05. – 06. 09.2018	JRC Karlsruhe	EU Member States
Comprehensive Refresher Course in NDA Techniques		17. – 21 09.2018	Vienna, Austria and JRC Karlsruhe	IAEA
Messübungen für die allgemeine Gamma Spektrometrie – Hands on Training		08. – 11. 10.2018	JRC Karlsruhe	BfS
Front Line Officers Training Course on Radiation Detection Techniques		05. – 09. 11.2018	JRC Karlsruhe	DG TAXUD

Source: JRC.

2.4.2 2019

Table 8. Training planed by JRC.G.II.6 for 2019.

Title of Training	Event	When	Where	For whom
Nuclear Forensics	Regional Training Course on Nuclear Forensics	28. – 31. 01.2019	Tokai, Japan	IAEA
GICNT Workshop on Reachback		12. – 14. 02.2019	JRC Karlsruhe	for Third countries and IAEA
Front Line Officers Training Course on Radiation Detection Techniques		18. – 22. 02.2019	JRC Karlsruhe	DG TAXUD
Applications of Existing Capabilities to a Nuclear Forensics Investigation		25.02.- 01.03. 2019	Dushanbe, Tajikistan	US DoE
Train the Trainers Course on Radiation Detection Techniques		18. – 22. 03.2019	JRC Karlsruhe	DG TAXUD
Complementary Access Exercise		25. – 29. 03.2019	JRC Karlsruhe	IAEA + DG ENER
RADAR Course		01. – 05. 04.2019	JRC Karlsruhe	DG ENER
Messübungen für die allgemeine Gamma Spektrometrie – Hands on Training		02. – 04. 04.2019	JRC Karlsruhe	BfS
DG HOME Training n°1		13 – 17. 05.2019	JRC Karlsruhe	DG HOME
NL FLO Training		20. – 24. 05.2019	JRC Karlsruhe	the Netherlands
WS home 1 - Securing Measures Public Workshop		03. – 07. 06.2019	JRC Karlsruhe	EU Member States
DG HOME Training n°2		24. – 28. 06.2019	JRC Karlsruhe	DG HOME
NSDD Training n°1 Pakistan IDEA Ops		01. – 05. 07.2019	JRC Jspra	Pakistan Border controll
NSDD Training n°2 FLO		08. – 12. 07.2019	JRC Karlsruhe	US Doe
NSDD Training n°3		09. – 13. 09.2019	JRC Karlsruhe	US DoE
NDA Refresher Course		16. – 20. 09.2019	JRC Karlsruhe	IAEA + DG ENER

DG HOME Training n°3		23. – 27. 09.2019	JRC Karlsruhe	DG HOME
Messübungen für die allgemeine Gamma Spektrometrie – Hands on Training		08. – 10. 10.2019	JRC Karlsruhe	BfS
IAEA Nuclear Forensics Methodologies		14. – 25. 10.2019	JRC Karlsruhe	IAEA + U.S. Department of Energy
Complementary Access Exercise		11. – 15. 11.2019	JRC Karlsruhe	IAEA + DG ENER
AWCC		18. – 22. 11.2019	JRC Karlsruhe	DG ENER
DG HOME Training n°4		25. – 29. 11.2019	JRC Karlsruhe	DG HOME

Source: JRC.

2.5 JRC.G.II.7 – Nuclear Security

The 'Nuclear Security' unit focusses on state of the art enabling research, the use of specific technology, development of instruments and methods, delivering technical services and training in the domain of nuclear safeguards, non-proliferation and nuclear security. In this way, the unit supports the verification of international treaties and agreements related to nuclear safeguards and non-proliferation. The main stakeholders and clients of the unit are safeguards inspection agencies, States, operators and Commission Services.

At the center of the unit's activities there are nuclear non-destructive detection methods, process monitoring and containment & surveillance technology and methods. These core-activities are complemented with proliferation assessment of new reactor systems, specialist analysis and use of open-source data including satellite imagery analysis, trade data analysis, strategic trade control and monitoring the dual use regulation, and last but not least border monitoring and the design of protocols to be used in the field of detection of nuclear materials outside regulatory control.

Contact for training and education activities of JRC.G.II.7:
Stefan Nonneman (Mr), Head of Unit (Stefan.Nonneman@ec.europa.eu)

2.5.1 2018

Table 9. Training given by JRC.G.II.7 in 2018.

Title of Training	Event	When	Where	For whom
Non Destructive Assay (NDA) follow-up training in collaboration with the JAEA and the IAEA		29.01.– 02.02. 2018	JRC Ispra	S.East Asian experts
Passive Neutron Assay		05. – 09. 02.2018	JRC Ispra	Students + Scientists
Safeguards and Non-Proliferation training for South Africa Region Outreach nuclear safeguards course		12. – 16. 02.2018	Centurion, Republic of South Africa	Students + Scientists
Passive Neutron Assay		21. – 25. 02.2018	JRC Ispra	Students + Scientists
EU in-reach training – Export Control Licensing		06. – 07. 03.2018	JRC Ispra	Students + Scientists
3D Laser scanning – Training in the use of 3D Laser scanning for nuclear verifications (3D-LVS)		13. – 15. 03.2018	JRC Ispra	Euratom + IAEA inspectors

ESARDA course	17 th edition of ESARDA Course on Nuclear Safeguards and Non-Proliferation	09. – 13. 04.2019	JRC Ispra	Students, Scientists + young professionals
JRC Ultrasonic Seals (CANDU) – Training on handling of JRC Ultrasonic Seals		10. – 11. 04.2018	JRC Ispra	EURATOM + IAEA Inspectors
Uranium Enrichment Verification Training		28.05. – 01.06. 2018	JRC Ispra	EURATOM Inspectors
Summer University on Strategic Trade Controls and Non-Proliferation		09. – 13. 07.2018	Baden, Austria	Students + Scientists
Training Safeguards & Security		09. – 13. 07.2018	West Point, USA	Cadets West Point
Training on Prospective 2018 changes to the EU dual-use control list	7th Annual Commodity Identification Peer Review Meeting	28. – 30. 08.2018	Rotterdam, the Netherlands	Dutch Custom Officers + US DoE
JRC Ultrasonic Seals (CANDU) - Training on handling of JRC Ultrasonic Seals (CANDU)		16. – 17. 10.2018	JRC Ispra	EURATOM Inspectors + IAEA
Safeguards and Non-Proliferation training for North Africa Region Outreach nuclear safeguards course		21. – 25. 10.2018	Algier, Algeria	Students + Scientists
Plutonium isotopic Composition		22. – 26. 10.2018	JRC Ispra	EURATOM Inspectors
Training on Nuclear Security: detection of Special Nuclear Materials		08.11. 2018	University of Rome, Italy	Students + Scientists

Source: JRC.

2.5.2 2019

Table 10. Training planed by JRC.G.II.7 for 2019.

Title of Training	Event	When	Where	For whom
Non Destructive Assay (NDA) follow-up training in collaboration with the JAEA and the IAEA		25.01. - 01.02. 2019	JRC Ispra	S.East Asian experts
NDA by SCK-CEN for IAEA hosted by JRC.G.2 Geel		February 2019	JRC Geel	IAEA
Passive neutron assay		18. – 22. 02.2019	JRC Ispra	EURATOM inspectors
3D Laser Based Verification System Training on the use of 3D Laser scanning for nuclear verification (3D – LVS)		12. – 14. 03.2019	JRC Ispra	EURATOM + IAEA inspectors
Uranium enrichment determination		25. – 29. 03.2019	JRC Ispra	EURATOM inspectors
ESARDA course	18th edition of ESARDA Course on Nuclear Safeguards and Non-Proliferation	01. – 05. 04.2019	JRC Ispra	Students and Scientists
Training on the use of JRC ultrasonic seals for underwater and dry storage		16. – 17. 04.2019	JRC Ispra	EURATOM + IAEA inspectors
Tank calibration course		08. – 12. 04.2019	JRC Ispra	EURATOM + IAEA inspectors
41st Annual Meeting and Symposium ESARDA on Safeguards and Nuclear Non-Proliferation		13. - 16. 05.2019	JRC Ispra	ESARDA
12th JRC - US DoE NNSA seminar on Export Control technical issues		09. - 11. 09.2019	JRC Ispra	US DoE
Commodity Identification Training progress Review Meeting		11. - 14. 09.2019	JRC Ispra	Users of the system
Plutonium isotopic composition determination		23. - 27. 09.2019	JRC Ispra	EURATOM inspectors

Nuclear Security Detection Architecture - EUSECTRA		23. - 27. 09.2019	JRC Ispra	Experts from English Speaking African countries (IAEA)
Regional School on Nuclear Security		01. - 03. 10.2019	University of Kenitra, Morocco	Experts from French Speaking African countries (IAEA)
Training on the use of JRC ultrasonic seals for underwater and dry storage		15. - 16. 10.2019	JRC Ispra	EURATOM + IAEA inspectors
Passive neutron assay		21. - 25. 10.2019	JRC Ispra	EURATOM inspectors
Training or Workshop for First Line Officers in nuclear security.		tbc	PNNL, USA.	IAEA
Summer university on export control compliance		tbc	JRC Ispra	Students and Scientists

Source: JRC.

2.6 JRC.G.10 – Knowledge for Nuclear Safety, Security and Safeguards

The mission of unit JRC.G10 is to manage and disseminate knowledge generated by the scientific units of Directorate Nuclear Safety and Security (Dir. G) of the Joint Research Centre (JRC) by mapping, collating, analysing, quality checking and communicating in a systematic and digestible way all the relevant scientific data, methods, tools and to monitor knowledge available worldwide.

Attention is given to anticipating knowledge needs, mapping knowledge gaps and suggesting research topics to be carried out in the JRC. The unit also facilitates open access to JRC nuclear facilities including training and education.

Contact for training and education activities of JRC.G.10:
Franck Wastin (Mr), Head of Unit (Franck.Wastin@ec.europa.eu)

2.6.1 2018

Table 11. Training given by JRC.G.10 in 2018.

Title of Training	Event	When	Where	For whom
Root Cause analysis and event investigation		14. – 18. 05.2018	JRC Petten	Nuclear Safety authorities and TSO's
Summer School on Nuclear Decommissioning and Waste Management	Summer School	09 – 13. 07.2018	JRC Ispra	Students and Scientists
REM Data Submission Training Course		13. – 14. 11.2018	JRC Ispra	DG ENER
Probabilistic Safety Assessment for Nuclear Regulators		20. – 24. 11.2018	JRC Petten	Nuclear Safety authorities and TSO's

Source: JRC.

2.6.2 2019

Table 12. Training planed by JRC.G.10 for 2019.

Title of Training	Event	When	Where	For whom
Root Cause Analysis and Event Investigation		20. – 24. 05.2019	JRC Petten	Nuclear Safety authorities and TSO's
REM Data Submission Training Course		03. – 04. 06.2019	JRC Ispra	Students and Scientists
REM Data Submission Training Course		06. – 07. 06.2019	JRC Ispra	Students and Scientists
Summer School on Nuclear Decommissioning and Waste Management	Summer School	08. – 12. 07.2019	JRC Ispra	Students and Scientists
REM Data Submission Training Course		Oct./Nov. 2019	JRC Ispra	W. Balkan countries
Conducting Regulatory inspection on Operating Experience and Evaluation Root Cause Analysis Reports		18. – 22. 11.2019	Madrid, Spain	Nuclear Safety authorities and TSO's

List of abbreviations and definitions

BfS	Bundesamt für Strahlenschutz
DG DEVCO	European Commission, Directorate General for International Cooperation and Development
DG ENER	European Commission, Directorate General for Energy
DG HOME	European Commission, Directorate General for Migration and Home Affairs
DG TAXUD	European Commission, Directorate General for Taxation and Customs Union
EEAS	European External Action Service
ESARDA	European Safeguards Research & Development Association
EURATOM	European Atomic Energy Community
IAEA	International Atomic Energy Agency
IAEA	Japanese Atomic Energy Agency
JRC	European Commission, Joint Research Centre
JRC-Geel	Joint Research Centre site in Geel, Belgium
JRC-Ispira	Joint Research Centre site in Ispira, Italy
JRC-Karlsruhe	Joint Research Centre site in Karlsruhe, Germany
JRC-Petten	Joint Research Centre site in Petten, the Netherlands
NRC	US Nuclear Regulatory Commission
OECD	Organisation for Economic Co-operation and Development
POLATOM	Polish Institute of Atomic Energy
TSO	EU Nuclear Safety Regulators and Technical Support Organisation
US DoE	US State Department of Energy

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