AREVA NP TRAINING OPPORTUNITIES

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Training Opportunities

- AREVA NP Reactor Training Centre

- ‘On the Job’ Training

- Other Opportunities in collaboration with French and/or Foreign Partners
Training Opportunities

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- ‘On the Job’ Training
- Other Opportunities in collaboration with French and/or Foreign Partners
10,000 training hours

15,000 trainees

- France
  - EDF – AREVA – WEIR – SWAGELOK
- United Kingdom
- Switzerland
  - VAT
- Sweden
  - SSM - Vattenfall
- Netherlands
  - DELTA
- China
  - CNNC – CNPE - CGNPC
- Republic of South Africa
  - ESKOM - ONR
- Saudi Arabia
  - SEC

250 trainers (France & Germany)

- Generalists
- Specialists
- Experts

400 hours of simulation
Instrumentation & Control programs

Codes & Standards programs

General Knowledge – Technology of Reactors

Design, Operation, Commissioning of Reactors
  ◆ EPR Reactor
  ◆ ATMEA1 Reactor

Specific training programs, implemented upon request
Training Opportunities

- AREVA NP Reactor Training Centre

- ‘On the Job’ Training

- Other Opportunities in collaboration with French and/or Foreign Partners
‘On the Job’ Training

▶ Trainees are Professionals with a minimum experience
▶ Trainees are included in our teams
  ◆ Work on real projects with a mentor

▶ Trainees join us for several months
  ◆ Training programmes can be planned for several years with trainees returning in their home organization in between fellowship periods with us, for sharing the acquired knowledge
  ◆ Follow-up by the mentor in between fellowship periods
    • Home work, Preparation of the next period, Workshop at the home organization with active participation of the trainee and of the mentor

▶ Recently
  ◆ VARANS (Regulatory Body, Vietnam) : Radiation Protection (with EDF) and Thermalhydraulics
  ◆ EVN/NPB (Operator, Vietnam) : Quality Management System
  ◆ COMENA (Algeria) : I&C
  ◆ Under the aegis of French Governmental Framework (I2EN) and IAEA Technical Cooperation
Training Opportunities

- AREVA NP Reactor Training Centre
- ‘On the Job’ Training
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Other Opportunities

- Partnership with other French Stakeholders
- For example EDF Nuclear Academy

EDF NUCLEAR PERFORMANCE MODEL

NUCLEAR SAFETY TRAINING OFFER FOR ENGINEERING AND GENERATION PERSONNEL

**Nuclear safety familiarisation**
- for every workers, apprentices in a nuclear power plant

**Nuclear safety in operation** (part 1 & 2)
- for operation management, safety engineers in a PWR nuclear power plant

**Nuclear safety during outage**
- for every one concerned by the outage project in a PWR nuclear power plant

**Nuclear safety process for maintenance engineers**
- for maintenance management and engineers in a PWR nuclear power plant

**Nuclear safety process for engineering support**
- for corporate engineers working for a PWR fleet
Partnerships with Universities
Other Opportunities

Specific Events - Upon request

AFCEN MEETINGS
Shaping the Rules for a Sustainable Nuclear Technology
June 23 - 25, 2015 - EDF Cogeneration plant, Krakow

AGENDA - RCC-M Mechanical Components Code & EN Standards Workshop
Tuesday June 23, Plenary Session - Nuclear Codes and EN Standards
BACK-UP Slides
Instrumentation & Control programs

◆ I&C DESIGN - 2,5 days
   
   This training, implemented by AREVA specialists, provides the attendees with an overview of I&C Nuclear Power Plant, from design to implementation on site

◆ TELEPERM XS in a Nutshell – 1 day
   
   This training describes TELEPERM XS specificities and its integration into EPR reactor Instrumentation & Control architecture

◆ TELEPERM® XS-Fundamentals Including practicals – 5 days
Codes & Standards programs

◆ Introduction to the ASME Code – 4 days
  *This training provides the basic knowledge of the ASME code (ASME Boiler and Pressure Vessel Code). It is dedicated to a large public who needs to use the code.*

◆ Introduction to the RCC-M code – 4 days
  *This training provides the basic knowledge of the RCC-M code (Design and Conception Rules for Mechanical Components of PWR Nuclear Islands). It is dedicated to a large public who needs to use the code.*

◆ Introduction to the RCC-MRx code – 3 days
  *This training provides the basic knowledge of the RCC-MRx code (Design and Construction Rules for mechanical components of nuclear installations applicable for high temperature structures and ITER vacuum vessel). It is dedicated to a large public who needs to use the code.*

◆ RCC-E (Codes and Standards for Electrical Equipments) – 1 day
  *This 1-day training describes the different chapter of RCC-E and highlights its specificities*

◆ Introduction to the RSE-M code – 2,5 days
  *This training provides the basic knowledge of the RSE-M code. It is dedicated to a large public who needs to use the code.*
General Knowledge technology of reactors

- **Nuclear Power Plant Basics – 4 days**
  
  *This training is the first step to understand Pressurized Water Reactor concept. It is illustrated on EPR Technology*

- **PWR fundamentals using simulator – 3 days**
  
  *Pressurized Water reactor design principle presentation and knowledge acquisition, sustained by lab work by running reactor normal operation on C-PWR training simulator.*

- **Simulator training - PWR normal operation**
  
  *This training has been developed and implemented by AREVA mechanical specialists to allow a good understanding of technical requirements link to the design, the manufacturing and control of Pressurized Water Reactor components.*
General Knowledge technology of reactors

- The materials on Pressurized Water Reactor
  
  This training has been developed and implemented by AREVA mechanical specialists to allow a good understanding of technical requirements link to the design, the manufacturing and control of Pressurized Water Reactor components.

- Probabilistic Safety Assessment Training – 4 days
  
  This training has been developed and implemented by AREVA Safety specialists to allow a good understanding of Probabilistic Safety Approach requirements, development and application in Nuclear Facilities.

- Technical Nuclear Safety – 1 days

- Nuclear Learning Tour reactor – 8 days + pre elearning
  
  e-learning
  Interactive classroom modules
  Balanced and progressive learning program
  Practical and guided exercises
  Operation demonstration with simulator
  Practical site visits: research centre, Nuclear Power Plant, fuel manufacturing plant, training & maintenance centre, EPR new build construction, recycling plant & waste management
  Conferences by top-level experts
Design, operation, commissioning EPR

◆ SYSTEMA EPR Technology – 5 days
  This training provides the basic knowledge of principal systems of the EPR. It is dedicated to a large public who need a global knowledge of the EPR.

◆ ELECTRA EPR Technology – 4 days
  This training provides a good knowledge of EPR operation in case of normal and abnormal condition.

◆ PHYSICA EPR Technology – 3 days
  This training provides a good knowledge of the physical phenomena during the accidental transients of the EPR reactor.

◆ EPR Technology Advanced course – 5 days
  This training provides EPR reactor features. It is dedicated to a large public who has a basic knowledge on PWR and interested by new build projects.

◆ EPR Reactor Design & Operation – 30 days
  This training provides the large knowledge of the EPR. It is dedicated to design, safety and control engineers.
Design, operation, commissioning EPR

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To adapt current courses to customer’s needs and specificities

► EDF Energy
  ◆ PHYSICA EPR Technology – 2016
    To take into account HPC project and EDF Energy special requests – Severe accident analysis

► SSM
  ◆ EPR Technology - 2015
    2,5 days focused on EPR reactor technical specificities + 2,5 days of workshops animated by AREVA experts on specific topics

► ENGIE
  ◆ Nuclear Training Program - Major 2014 - 2016
    2 X 3 weeks implemented by AREVA and ENGIE experts covering all aspects of nuclear industry
To propose learning solutions to customer’s development objectives

- **Vattenfall**
  - EPR Technology Advanced course - 2013
    
    *This training has been design according to Vattenfall’s requirements.*

- **CNPE**
  - Project Management knowledge program - 2013
    
    *2 X 6 weeks sessions including experts presentations, case studies and site visits*

- **SEC**
  - Nuclear power plant basics - 2015
    
    *In partnership with EDF and EDF Energy: 10 trainers for 1000 trainees on 8 industrial sites in Saoudi Arabia*

- **Polish Universities**
  - Fuel cycle training program - 2015
    
    *In partnership with INSTN (refereed by I2EN) involvement of different AREVA experts in a 12week session including magisterial presentations, site visits and special training tools (virtual reality, simulators)*