Electricité de France

Attracting, Training and Retaining the Next Generation of Nuclear Professionals

5th June 2019
The Nuclear and Fossil Generation Branch

4 operational divisions:
- DPN: Nuclear Power Generation Division
- DIPDE: Operational Engineering, Decommissioning and Environment Division
- DCN: Nuclear Fuel Division
- DTEAM: Thermal Engineering Asset Management and Services Division

2 programme / project structures:
- Fleet Refit Programme: “Grand Carénage”
- Decommissioning and Waste Projects Branch (DP2D)
For the past 15 years, EDF has been trending demographic changes within its workforce

- **Large number of retirements** predicted
- **Proactive recruitment** for purposes of training and knowledge transfer,
  - Up to 13% of personnel undergo training every year
  - 50% staff changed within 10 years while performance were maintained

Decrease of:
- The number of retirements
- The number of people being hired
- Training projections
Actions being taken today

- **Large-scale knowledge transfer** has been a success and is no longer a major issue.

**Major challenge**: reducing the number of operations and maintenance-induced defects:

- Nuclear safety risk
- Power output losses
- Costs...

In order to achieve this:

- **Continued delivery** of general and discipline-specific training
- **On-plant apprenticeship** through situational proficiency training or shadow training
- Development of **just-in-time training** sessions determined by leaders if their analysis highlights any risks to operational safety or power output

- Not a major issue **but an ongoing concern**
What about our contractors?

- The risk of **potential work-induced defects** was identified 10 years ago.
- Focus on the identification of **standards** and **discipline-specific training**.
- **Classroom** and **in-field training** on **cross-functional risks** (operational safety, industrial safety, fire safety, etc.) was completely revised.
- Today’s challenge:
  - Roll-out of EDF’s competency standards
  - Making expectations **simple, understandable, practical and usable**

- **27 000 persons qualified to work**
- **900 qualified contract companies**
- **1 000 000 hours of training per year**
Attractiveness: a significant issue

10 year ago: 80 applicants for 1 position
Today: 30 applicants for 1 position

Young people are no longer attracted by the industry (nuclear)

Lack of professionals in certain disciplines
Mechanical maintenance
Pipes & vessels
Valves...

More than 10 years ago: EDF worked together with France’s and Europe’s prestigious colleges and universities (polytechnics, broad-based engineering schools, electrical engineering schools…) to develop curricula enabling students to specialise in subjects of interest to EDF.

Today: focus on training courses geared towards technicians (school-leaving certificate + 2/3 years of study)

At the same time: School communication campaigns at all levels
- Participation in forums
- Collaboration with other parties in the nuclear industry

Messages:
- Nuclear is safe, CO₂ free...
- Long-term careers
Summary

- EDF has not identified any major risks at present. EDF succeeded in a huge renewal of skills between 2008 and 2018.

- The main risks were identified more than 10 years ago prior to the large number of retirements.

- Actions are now being taken to ensure that high standards of initial training, specific training and knowledge transfer are delivered. A focus is being maintained on this issue; the challenges are significant.

- Additional actions have been taken to keep this risk under control.