

ANDRA

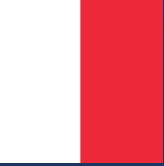
National Radioactive Waste Management Agency

FRANCE

François-Michel GONNOT

Chairman - ANDRA





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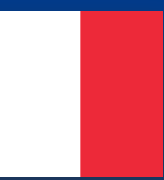


Radioactive materials and waste

Planning Act of 28 June 2006

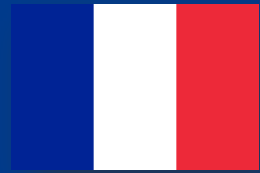
Consolidated version established by Axova

Download on
www.andra.fr



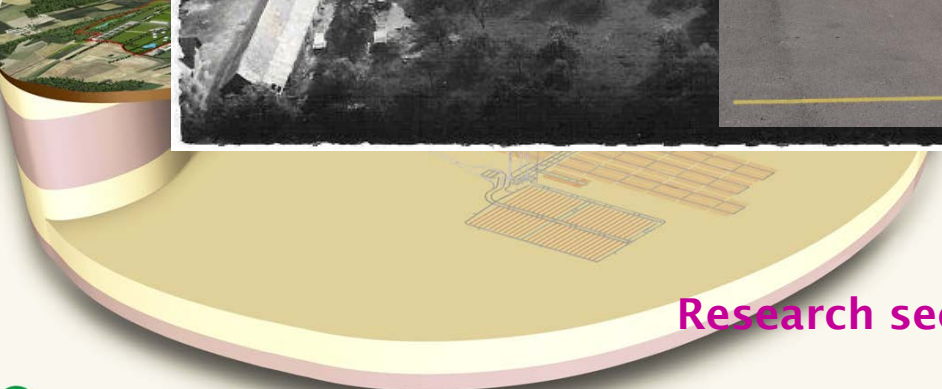
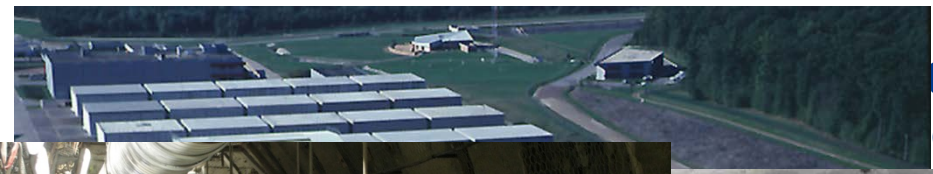
- ❖ **Independent** from the waste producers
- ❖ Placed under the **supervision of the ministers** in charge of Research, Energy and the Environment
- ❖ Responsible for the **long-term management** of all radioactive waste produced in France
- ❖ It involves about **650 employees** ($\frac{2}{3}$ engineers and managers) and a budget of **250 M€**

The *Planning Act of 28 June 2006 concerning the sustainable management of radioactive materials and waste provides the framework for its action.*

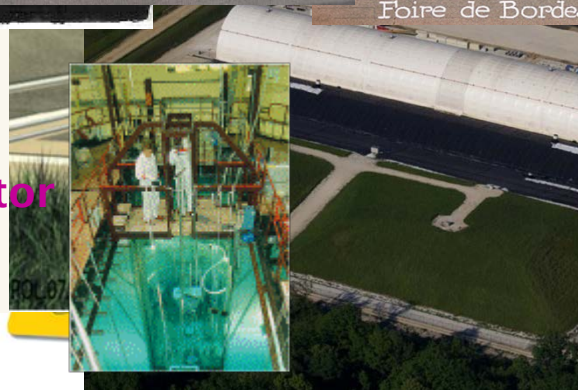


...t while taking into account the rights
generations

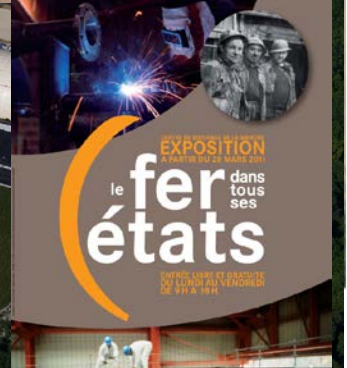
Nuclear industry sector :



Research sector



Foire de Bordeaux 1949



WMS PANEL

Pr Gérard COTE

March 16, 2015

I2EN's missions






I2EN: International Institute of Nuclear Energy

- I2EN serves the civil nuclear industry in scientific, technical and professional education & training
- It is responsible :
 - to assess the French training offer to the needs of industry for qualified employees
 - to represent and coordinate the national training offer tailored to the needs of partner countries
- It pays particular attention to the collective capacity of welcoming foreign students and professionals in the nuclear sector

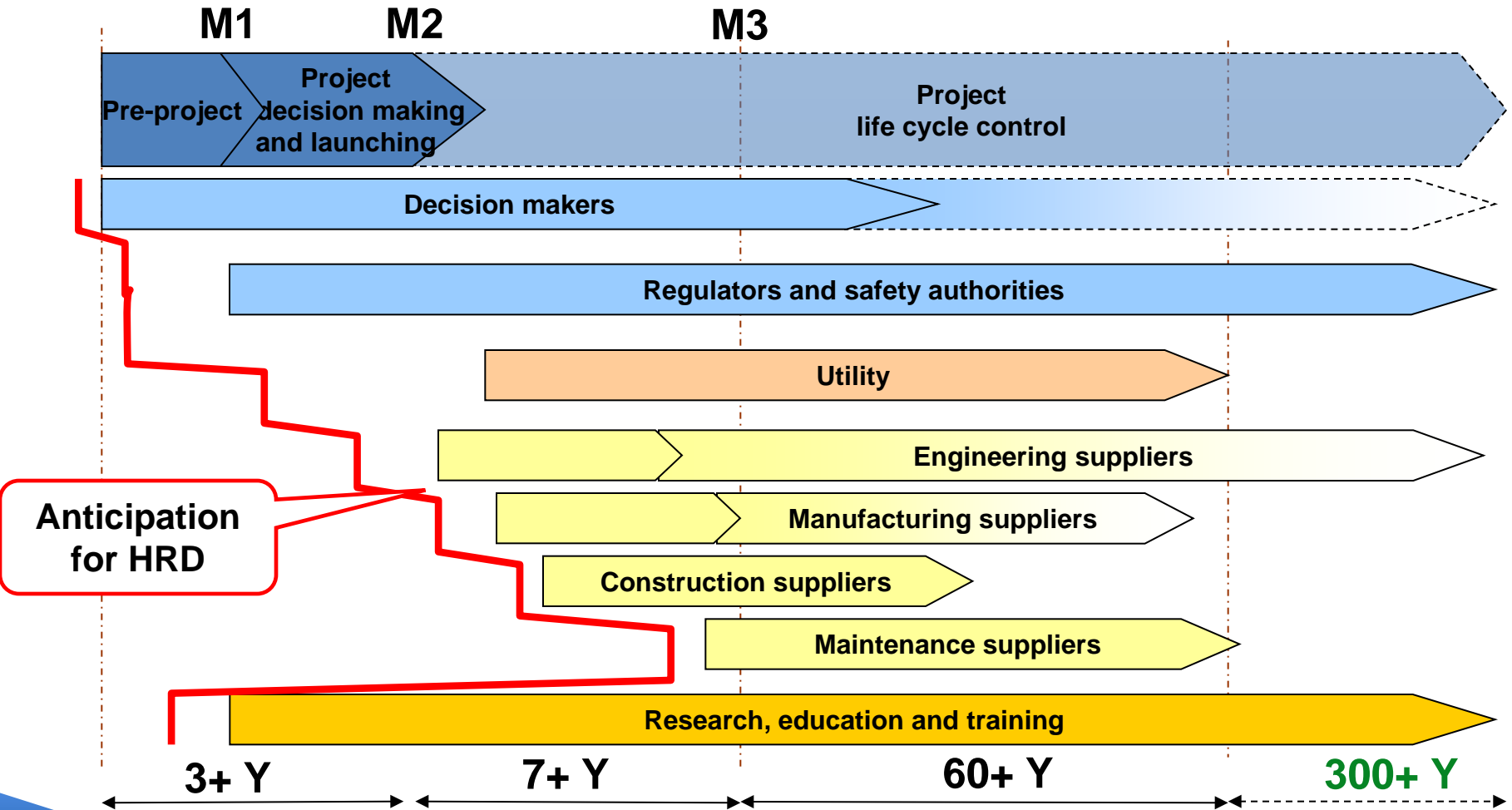
I2EN: the entry point to the French HRD system, providing foreign partners with the best solutions in education and training for HR development



France has been sharing its knowledge and learning with other countries for decades

Areas of support		Knowledge and learning sharing	Examples
HCB	40+	years of successful HCB guidance and cooperation with fellow countries since 1970's.	
Education and training (all types)	55+	partnerships with top universities worldwide. Set up of joint training centers.	
NPP operation	850+	trainees from foreign operators trained over the last 30 years.	
	346	reactors supported, out of the 435 in operation (i.e. 80% of nuclear global fleet), with products and services.	
Waste management	10+	countries, professionalizing the teams on safety studies and waste management	

Waste management education needs to be anticipated for all stakeholders



Master's and bachelor's degrees in dismantling and waste management

🌐 Master's degrees

- Decommissioning and Waste Management
- **Advanced Nuclear Waste Management**
- Scientific and Technological Management of Radioactive Waste
- Decommissioning and Dismantling of Nuclear Facilities
- Separation Chemistry, Materials and Processes
- Fuel Cycle
- Nuclear: Technologies, Safety and Environment
- Engineering of Nuclear facilities
- Synthesis, Ageing and Characterization of Materials for Nuclear Industry

🌐 Bachelor's degrees

- Radiation protection, Dismantling and Waste Management
- Decommissioning, Waste Management and Dismantling in a Nuclear Environment
- Chemistry and Processes applied to the Nuclear Fuel Cycle

Advanced Nuclear Waste Management

The master forms engineers exposed to a highly complex scientific environment where technical expertise is omnipresent in the field of nuclear waste management.

The program provides:

- The scientific knowledge necessary for nuclear waste management and the capability to understand how to assess long-term safety and environmental impacts.
- The competencies to master the operational techniques and strategies for the management of nuclear waste.
- The appropriate solutions according to the type of waste through project work in industry.
- The competencies to master dismantling and decommissioning of nuclear facilities.
- The possibility to build contacts with a large number of international key players in the field.
- Societal considerations in the management of nuclear waste with regard to the public acceptance.

Key messages

- Whereas HW from spent fuel will need to be processed several years after the nuclear reactor is connected to the grid, LILW resulting from reactor exploitation needs to be addressed from the very beginning of operation.
- Therefore, a global waste management policy is to be thought about from the inception of an electronuclear program, hence training has to be anticipated accordingly
- Training of people involved in waste management should not be limited to waste processing, storing and disposing only. Trainees must get a global view of the back-end from spent fuel to facilities dismantling in order to:
 - *know where and how waste is generated*
 - *be able to talk with the operators of nuclear facilities generating waste so as to identify ways to minimize it*

Thank you for your attention



French Nuclear Society

March 2015

Who we are



French Nuclear Society

Founded in 1973

- ✦ Non-profit, scientific and educational organization
- ✦ 4000 engineers, scientists, educators from research centers, industrial organizations, teaching institutions...

Who we are



A forum to discuss the latest developments in nuclear science and technology

Advocates to help citizens learn about nuclear energy

A place for nuclear energy professionals to gather and network



A network working with networks

Gathering
professionals
from Research & Industry



Hosting
other French
associations



Founding ENS member
Agreements with
17 nuclear associations around
the world



**Organizer of 200 events every year,
incl. major international conferences**



Nuclear Innovations for a Low-Carbon Future

May 3-6, 2015, Nice

**500 abstracts from 40
countries**

**50 speakers from plenary
sessions incl.**

- **New & Rising
Countries**
- **Nuclear for Climate**
- **Space applications**



New Generation for a Low-Carbon Future

June 22-25, 2015, Paris

**Gathering young
professionals from 22
networks in Europe**

**400 young professionals
expected**

**Program: Nuclear &
Environment**



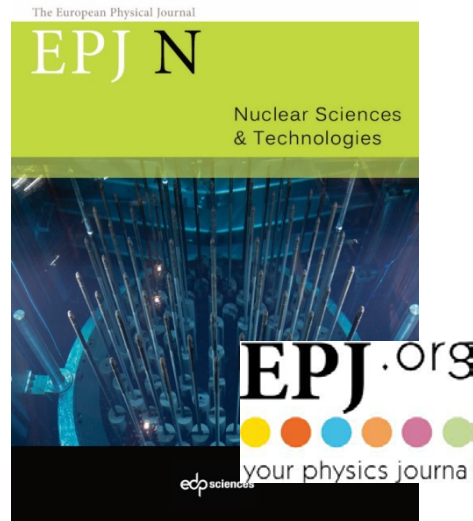
Nuclear Fuel Cycle for a Low-Carbon Future

**September 20-24, 2015,
Paris**

**460 abstracts from 35
countries**



A major publisher & social media player



- ✘ In French, print
- ✘ 6 issues / year
- ✘ Founded in 1975
- ✘ Nuclear Industry Outlook
- ✘ One theme /issue: in-depth coverage of technology area and applications
- ✘ The reference

- ✘ In English, internet
- ✘ Open access, peer-reviewed academic journal
- ✘ Editor Christophe Béhar / CEA
- ✘ Collaboration SFEN-ENS
- ✘ To be launched in May 2015

- ✘ Best-in-class Internet site/blog: 40,000 visits/month
- ✘ 1st Twitter pro-nuclear account in France, with followers incl/ top media and decision-makers
- ✘ YouTube channel: 120+ videos



Public debate legal framework in France

IMPORTANT MILESTONES

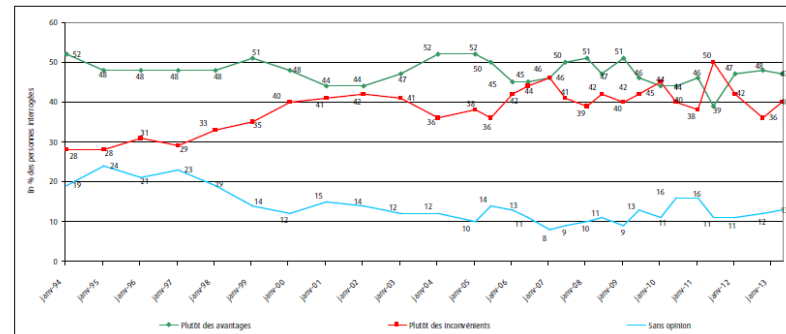


- ✘ 1981: creation of CLI (Local Information Committees)
- ✘ 1995: Barnier law makes public debates mandatory for all major infrastructure projects
- ✘ 2006: Transparency & Nuclear Safety law

Polls: recovery after Fukushima accident



Graphique 3 - Évolution de l'opinion des Français sur le nucléaire



Source : SOeS, baromètre d'opinion sur l'énergie et le climat

Since 2003

- ✘ 2 national debates on Energy Policy
- ✘ 6 major debates on nuclear projects

SFEN advocacy in media, social networks & public affairs (auditions)

In 2015, SFEN will publish 5-10 position papers, and about 20-30 press releases

Current hot topics: new energy bill, CIGEO HLW repository, climate, cost of nuclear accident



Les Echos.fr NEWS BOURSE PATRIMOINE

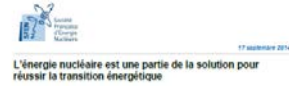
POINTS DE VUE
de Valérie Faudon

Pourquoi fermer Fessenheim est une idée

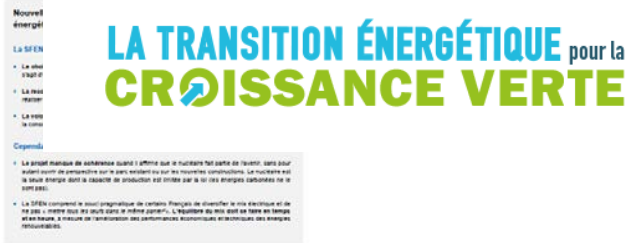


Commentaires

Arbela était nommé nouveau délégué interministériel à la Fessenheim. La veille, le 14 janvier, la plus haute juridiction a appelé la fermeture forcée, en mars 2011, après l'accident nucléaire de Biblis dans l'état régional de Hesse. Le permis de construction pour l'électricien RWE. C'est le premier d'une série de permis de construction de centrales nucléaires allemandes ont des procédures en cours pour les 1. Au total, la facture pourrait s'élever à plus de 15 milliards.



La Société Française d'Énergie Nucléaire (SFEN) est le partenaire français des commissions sur l'énergie nucléaire. Créée en 1975, elle a été reconnue d'utilité publique en 2005. La SFEN est un lieu d'échange pour les spécialistes de l'énergie nucléaire française et étrangère. Elle recense 3 800 professionnels de l'énergie, l'enseignement et la recherche.



Document de l'Agence Française de l'Énergie, sous la présidence du projet de loi 2014-1733 relatif à la transition énergétique.



International advocacy: the Nuclear for Climate Initiative



#Nuclear4climate is a grass roots initiative which brings together the many professionals and scientists of the international nuclear community, coordinated via **60 nuclear associations around the world.**

We proudly believe that **nuclear energy is a key part of the solution to fight climate change.**

All countries have **the right to choose nuclear energy as one of the options to reduce greenhouse gas emissions** and this should not be restricted in any way by UNFCCC protocols.

MERCI !



www.sfen.org