



Nuclear Safety and Radiation Protection Regulation in France

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ASN General mission

On behalf of the State, ASN regulates **nuclear safety and radiation protection in order to protect workers, patients, the public and the environment in France against the risks related to nuclear activities.**

ASN contributes also to informing the public



1. ASN, the French nuclear Regulatory Body

A long way towards independence from 1973 until 2006

- ✓ **1973:** Establishment of a department in charge of the regulation of the safety of nuclear installations within the ministry for industry
- ✓ **1991:** The department becomes a Directorate reporting to two Ministers (industry and the environment)
- ✓ **1997:** Extension of the area of competence to transport
- ✓ **2002:** The Directorate becomes a General Directorate reporting to three Ministers (industry, environment and health), with extension of the area of competence to radiation protection
- ✓ **2006:** The act of 13 June 2006 makes ASN an **Independent Administrative Authority**



1. ASN Establishment

- **The Act on transparency and security in the nuclear field** (n° 2006-686 of 13 June 2006, so called TSN act) set up **ASN as an independent administrative authority.**
- **ASN is not within a ministry but is a State Authority**
- **ASN reports to the French Parliament.**
- **ASN is managed by a board of 5 Commissioners created by the TSN act.**



1. ASN Establishment

A board of 5 commissioners

- A full-time job
- A non-renewable 6 year mandate
- Non dismissable

ASN Chairman:

Pierre-Franck Chevet (appointed in 2012 for 6 years)

Commissioners:

Michel Bourguignon (appointed in 2008 for 6 years)

Jean-Jacques Dumont (appointed in 2010 for 6 years)

Philippe Jamet (appointed in 2010 for 6 years)

Margot Tirmarche (appointed in 2012 for 6 years)



Designated by



President of the
Republic

President of the Senate

President of the National
Assembly



1. ASN core values

■ Independence

- Freedom of judgement, action and expression
- Ability to work on its own terms and in complete impartiality

■ Transparency

- Public information, media communication,
- Stakeholders' involvement
- Reporting to the Parliament

■ Competence

- Skilled staff in technical, legal, management and communication fields
- Adequacy between competences and resources and activity scope and associated challenges

■ Rigour

- High degree of professional strictness required to ASN staff
- Guarantee of credibility and legitimacy



1. ASN Figures in 2012

- **460 staff:** industrial and medical engineers, physicians and pharmacists, legal and administrative specialists, human sciences and communications experts
 - 230 persons in the Paris Headquarters
 - 230 persons in the 11 regional offices

Budget: 70 M€

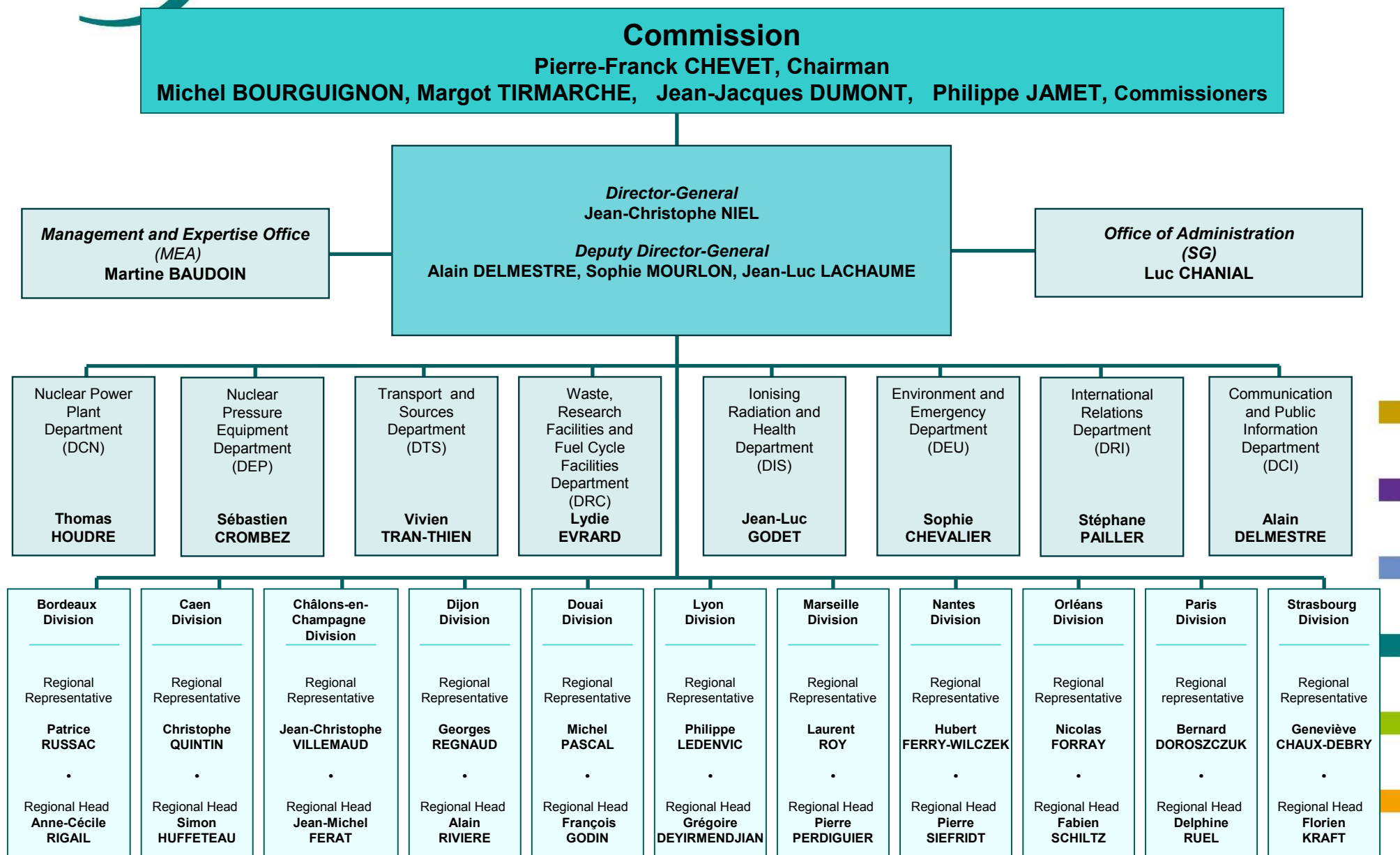
- **~ 400 experts within ASN's TSO**
(Institute for Radiation Protection and Nuclear Safety)
IRSN for its expert analysis

Budget: 80 M €

Civilian nuclear facility supervision: ~ 860 persons and 150M€



1. ASN Organizational chart

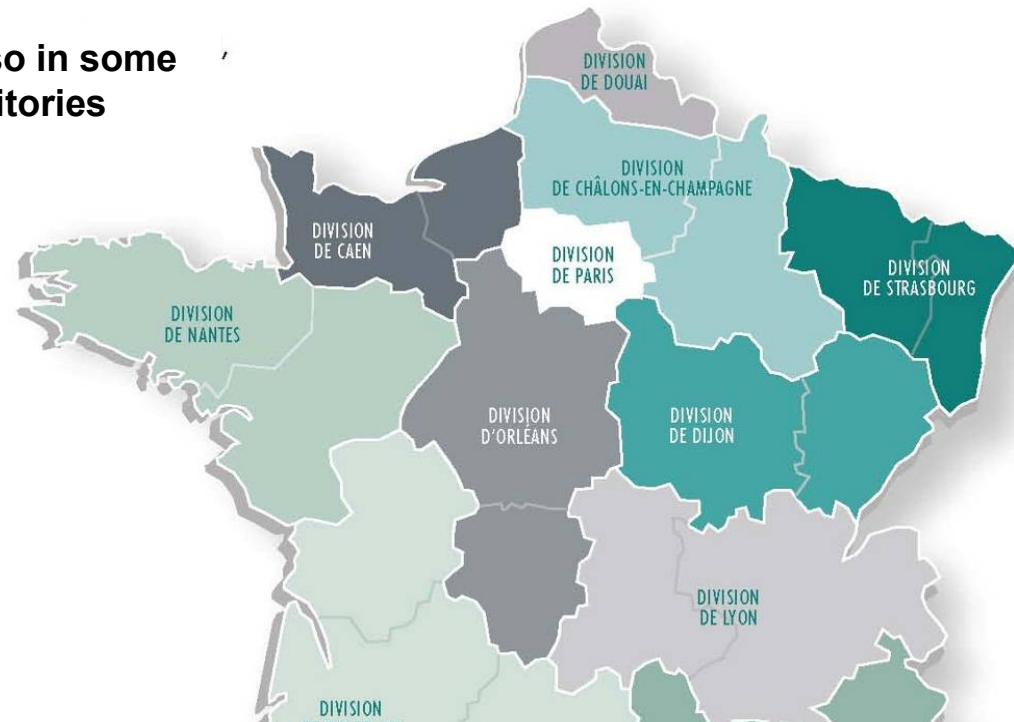




1. ASN Regional Offices on the French territory

The division of Paris intervenes also in some overseas departments and territories

The divisions of Caen and Orleans intervene respectively in Bretagne and Ile-de-France to control only BNIs.





1. ASN activity scope

The nuclear installations and activities regulated by ASN are numerous and diverse:

- 58 pressurised water reactors + one under construction + 1 fast neutron reactor (shutdown since autumn 2009),
- all the fuel cycle installations,
- research reactors,
- research, medical and industrial installations using radioactive sources,
- transport of radioactive materials.



1. Main Key points of the French Nuclear Programme

- Only one type of reactors 58 PWR + 1 under construction
- A single operator EDF for NPPs
- 80 % of electricity in France generated by nuclear power
- 58 reactors located on 19 sites . Only 4 along seas , 15 along rivers
- Also some NPPs close to borders with other European countries.
- Non-resident inspectors










1. Location of nuclear Facilities

Fuel cycle
(enrichment, fabrication, retreatment)

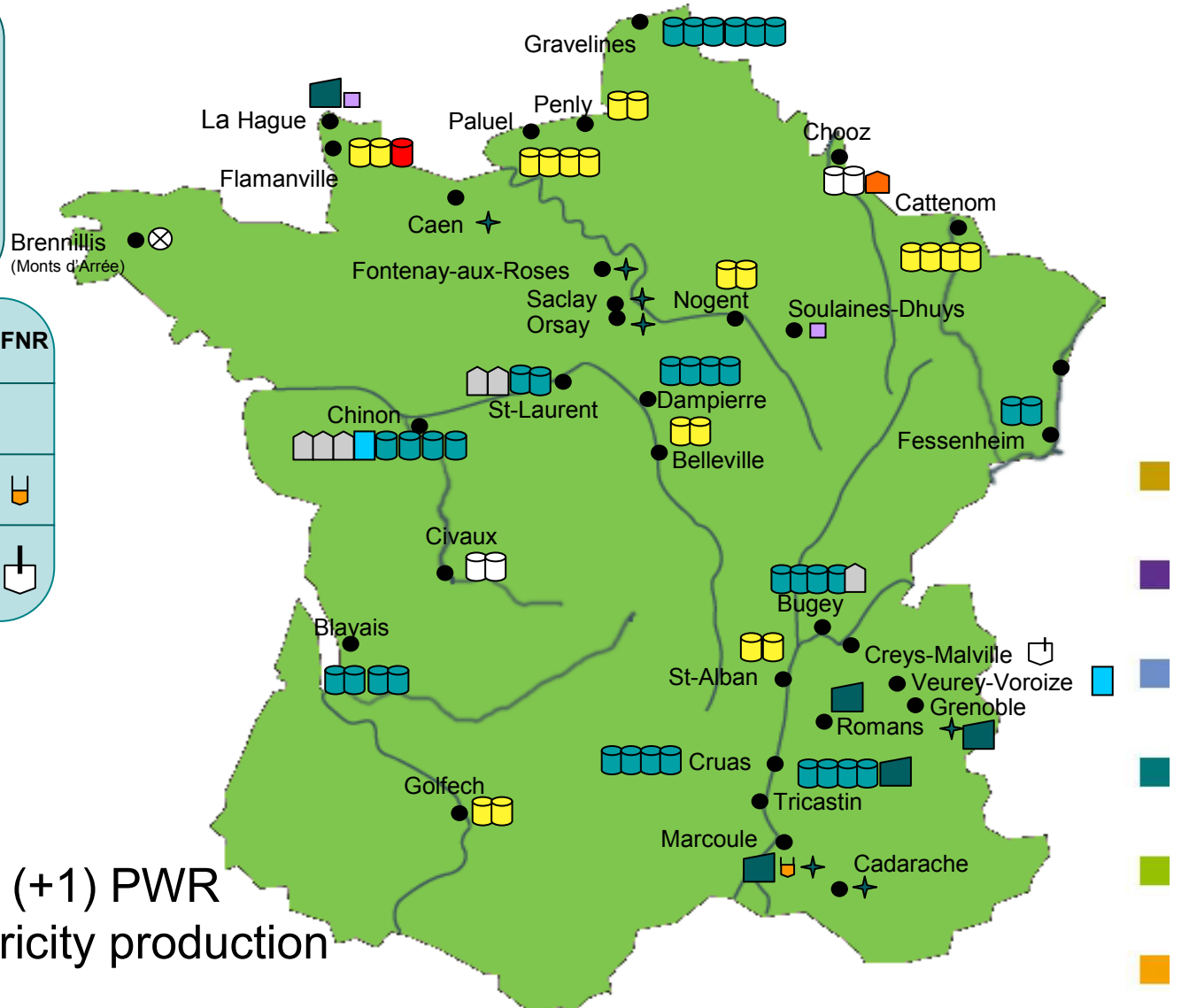
Waste disposal sites

Research centers

Laboratories

58 + 1PWR					Graphite Gaz	Gaz Eau lourde	1 FNR
300 MWe	900 MWe	1300 MWe	1450 MWe	1600 MWe			
							
							
							

- Whole fuel cycle
- 4 major operators
- 1 manufacturer
- Standardized fleet of 58 (+1) PWR
- 80% of the French electricity production





1. Medical and industrial facilities and transport

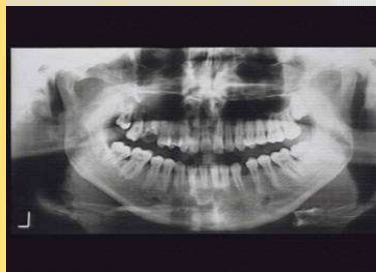


Transport

- ~ 16 000 certified containers
- ~ 90 types of qualified packages
- ~ 900 000 transported packages

Medical Facilities

- ~33 000 devices for dental examinations
- ~16 000 devices for classical radiology
- ~ 850 scanners
- ~ 500 radiotherapy facilities



Industrial plants

- ~ 37 000 sealed sources
- ~ 6 000 authorizations for the use of sealed sources
- ~ 1 000 authorizations for unsealed sources



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2. French approach for regulation : roles and responsibilities





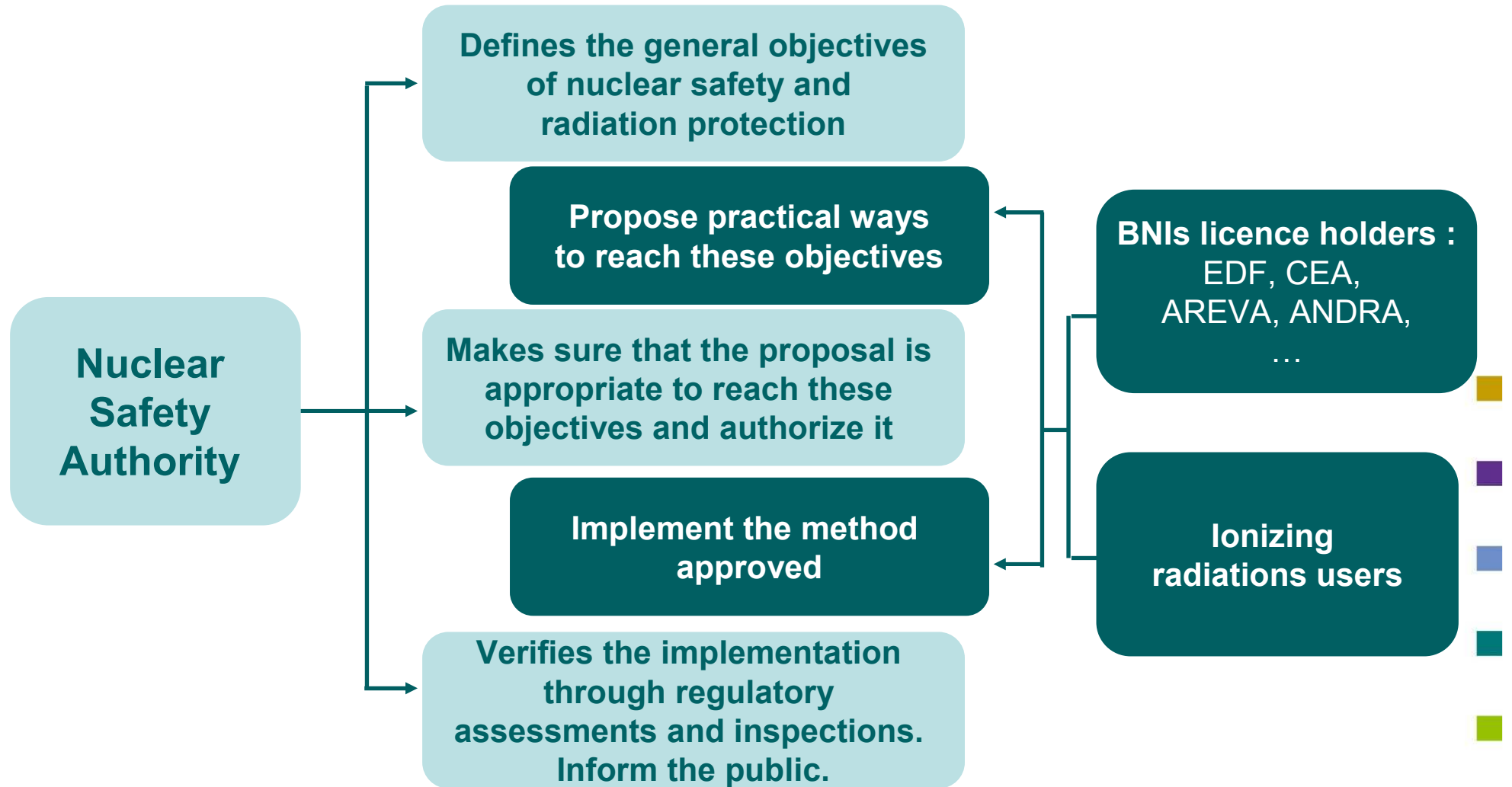
2. French approach for regulation : roles and responsibilities

**Preventing accidents and incidents
and limiting their effects**

**The licensee is responsible
for nuclear safety and radiation protection**

**ASN is responsible
for the control of nuclear safety
and radiation protection**

2. Roles and Responsibilities





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3. ASN duties for the regulation of nuclear safety and radiation protection





3. Expertise for carrying out ASN duties

ASN relies on two expertise sources :

- **Technical Support Organisation (TSO)** : Institute for Radiation Protection and Nuclear Safety (IRSN)
- **7 advisory committees** (reactors, pressurized equipment, waste, radiation protection, transports, etc.)



3. ASN duties

Regulates

Authorizes

Controls: inspections and enforcement actions

Contributes to the emergency situations response

Informs the public



3. ASN duties : Regulation and Authorization

a) Regulations: ASN

- Contributes to drafting of regulations, by giving the Government its opinion on draft decrees and ministerial orders
- Issues technical regulatory decisions

b) Authorizations regarding nuclear installations and activities:

ASN may deliver all authorisations, except the major authorisations related to the creation or the decommissioning of major nuclear installations



3. ASN duties : Inspections

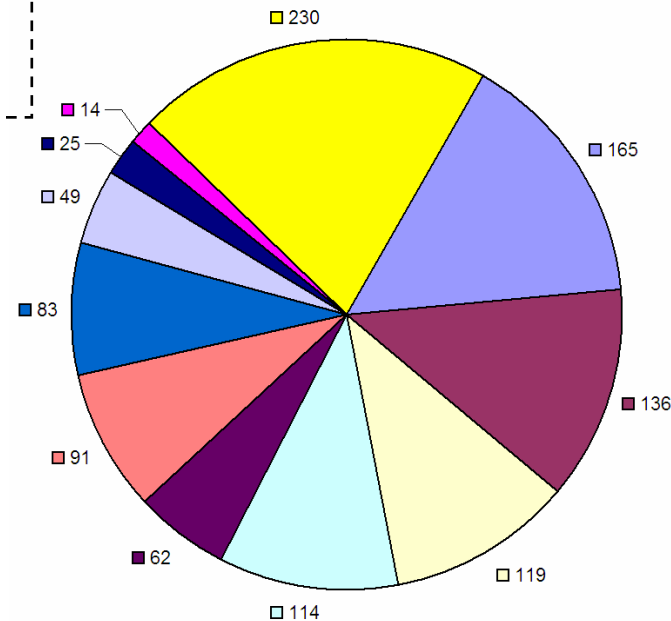
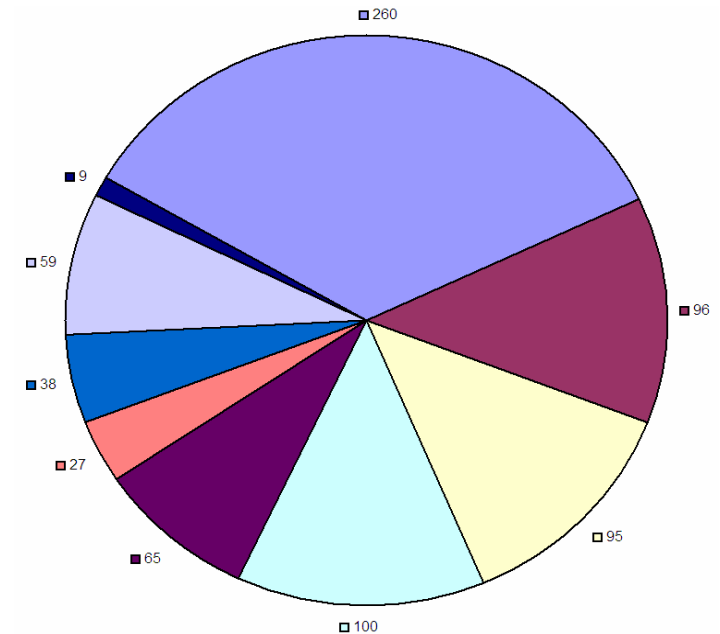
In 2011, ASN performed 2061 inspections.

Breakdown of the 749 BNI inspections carried out in 2011

+ 100 transport inspections of radioactive material and 124 inspections of approved organisations and laboratories

Breakdown, per activity category, of 1088 inspections carried out in 2011 in the small-scale nuclear facilities

- Nuclear safety
- Human factors and organisation
- Post Fukushima specific inspections
- Effluent, waste and environmental monitoring
- Pressure vessels
- Risk prevention including fire
- Radiation protection
- General inspection
- Emergency management



- External radiotherapy and brachytherapy
- Interventional radiology
- Tomography installations
- Industrial radiography
- Veterinarian
- Nuclear medicine
- Conventional radiology
- Source supplier
- Irradiation installations and particle accelerators
- Gamma densimeter
- Others activities



3. ASN duties: Radiological Emergency Management

3 tasks entrusted to ASN:

- Gives the competent authorities recommendations
- Informs the public (press releases, Internet, press conferences...)
- Controls the technical measures taken by the licensee

**About 10 national emergency drills
are performed each year**



3. ASN duties : public information actions

➤ **Implementation of specific communication tools :**

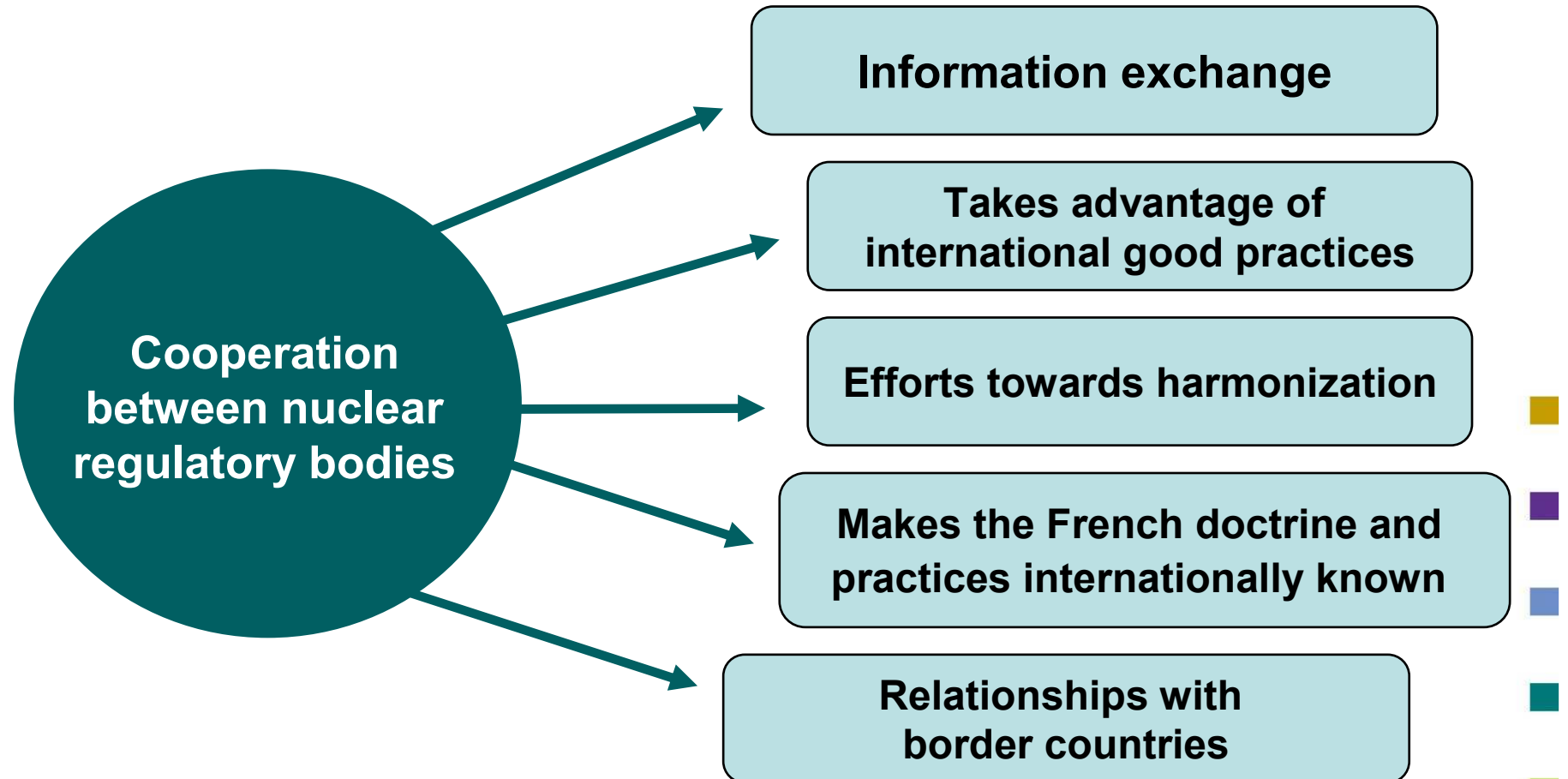
- website,
- **Contrôle magazine,**
- **annual report on nuclear safety and radiation protection in France...**



➤ **Public information and documentation centre**

➤ **Press conference, exhibition**

3. ASN duties: international cooperation



Bilateral cooperation: ~20 countries
Multilateral relationships: IAEA, NEA, EU
Clubs and initiatives: INRA, WENRA, HERCA, MDEP

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4. Right to information (TSN act)





4. Right to information (TSN act)

Any person has the right to obtain

- **from nuclear installation licensees and operators, persons responsible for transport of radioactive materials or holders of such materials**
- **the information that these entities or persons receive or produce**
- **on the risks relating to exposure to ionising radiation that might result from their activity and on the safety and radiation protection measures taken to prevent or reduce such risks or exposures.**

**This is a major innovation:
non-nuclear industrial installations
are not subject to the same obligation.**



4. Local information committees (CLIs)

➤ For each plant, a local information committee (CLI) is established and is in charge of keeping public informed on nuclear safety, radiation protection and impact of the nuclear activities on persons and environment

➤ The CLI is composed of representatives of: local councillors and deputies, environmental protection associations, economic interest groupings, plant employee trade unions, the medical professions

➤ The CLI can commission expert assessments, epidemiological studies measurements or analyses in the environment

➤ CLI funding: the state and local authorities



4. High committee for transparency and information on nuclear security

- Instituted by the TSN act
- Funding by the state
- 35 members appointed for 6 years
- Consultation and discussion body
- Public information at national level
- Can commission expert assessments
- Can issue opinions, which are made public
- Draws up an annual report, also publicly released



ASN Purpose



**To provide a nuclear supervision
that is efficient, impartial, legitimate and credible,
recognized by the citizens
and which constitutes an international benchmark
for good practices.**





Radioactive Waste Regulation





Fundamental principles for radioactive waste management

- Full responsibility of waste generators
 - A management route for each type of waste (national plan to be established and implemented)
 - Total traceability of waste produced, stored and disposed of
- Same principles apply to non-radioactive waste management

Radioactive waste classification and management strategies

<div>Period</div> <div>Activity</div>	Very short-lived (Half-life <100 days)	Short-lived (Half-life \leq 31 years)	Long-lived (Half-life > 31 years)
Very low level	Management by radioactive decay	Dedicated surface disposal Recycling channels	
Low level		Surface disposal (Aube repository) except for some tritiated waste and some sealed sources	Dedicated Sub-surface disposal (under study)
Intermediate level		Pathway under investigation within the framework of article L. 542 of the Environment Code	
High level			