



# **French NPPs' 4<sup>th</sup> Periodic Safety Review LTO Perspectives**

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## Standardized fleet:

- 58 PWRs (+1)
- 1 vendor
- 1 licensee

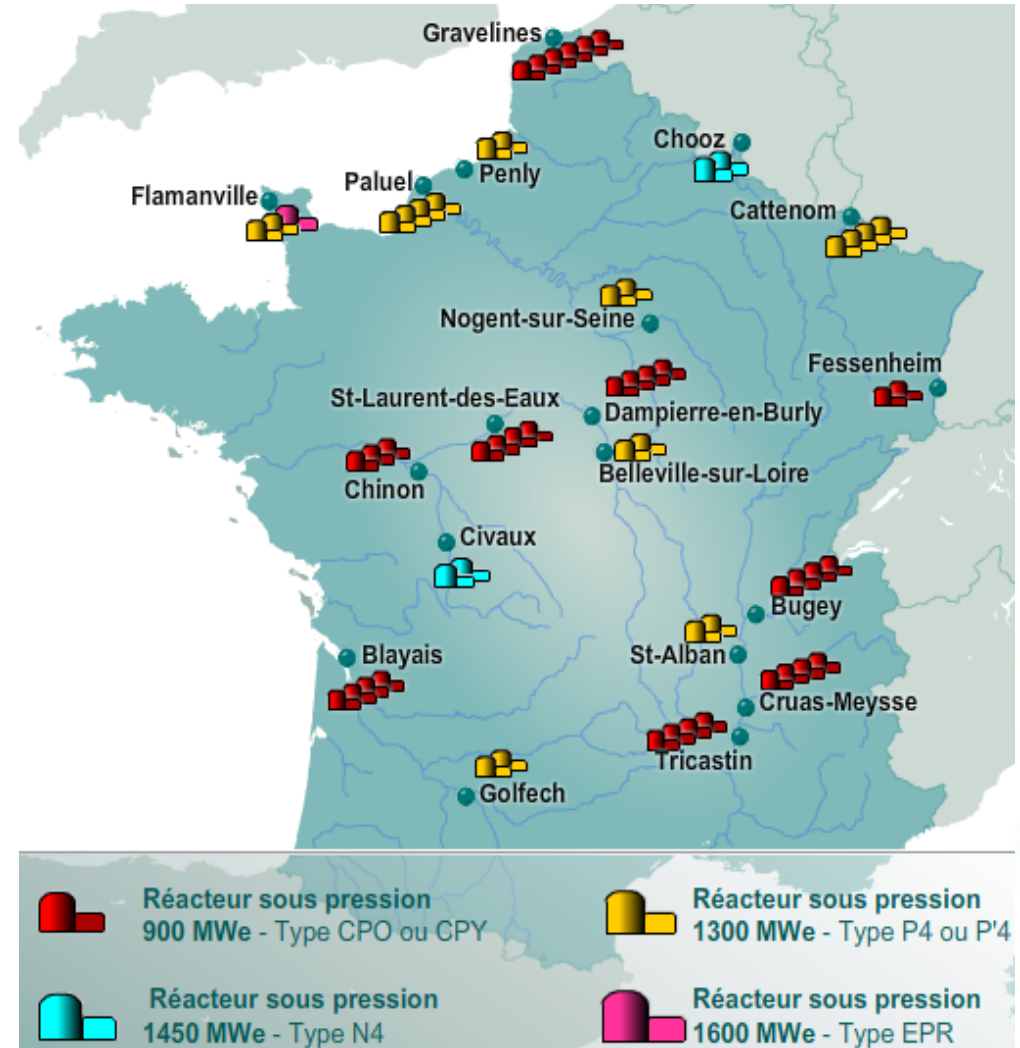


## 1979 → 1990:

$\frac{3}{4}$ <sup>th</sup> of the fleet built

## Fleet age:

- **French fleet average age**
  - 33 years (1st criticality)
  - 31 years (connection to the grid)
- **NPP average age** (1st criticality)
  - 900 MWe: 34 reactors ⇒ 36 years
  - 1300 MWe: 20 reactors ⇒ 30 years
  - 1450 MWe: 4 reactors ⇒ 20 years
- **Oldest reactor: 40 years old**





# Extending reactors' lifetime beyond 40 years

## No predetermined time limit for the French nuclear installations

- The operator is responsible for the safety of its installation (L. 593-6 of the environmental code)
- ***If serious and immediate hazard: ASN can stop the installation at any time (L. 593-22)***
- A periodic safety review (PSR) required every 10 years to determine the conditions of operation for the following 10 years



# Extending reactors' lifetime beyond 40 years

## 10-year PSR: a two-step process

- **3 main goals:**
  - Perform a conformity check with current safety requirements
  - Check the ageing management programs
  - Improve the safety of the installation with regard to the new safety objectives: currently Gen. 3+ (EPR type) objectives.
- **A generic step** addressing generic questions relevant to a category of reactors (900MWe, 1300MWe, 1450MWe).
- **A specific review** for each reactor:
  - 3<sup>rd</sup> PSR (VD3) of 900 MWe reactors (2009-2020)
  - 3<sup>rd</sup> PSR (VD3) of 1300 MWe reactors (2015-2024)
  - 4<sup>th</sup> PSR (VD4) of 900 MWe reactors (2019-2030)



# Extending reactors' lifetime beyond 40 years

## French NPPs initially designed for a 40-year operation

- EDF wishes to « extend the operation life significantly beyond 40 years »
- 10-year safety reviews → continuous safety improvement, and safety level homogenisation across NPP fleet

## In the coming years

- Reactor(s) to be commissioned with significant safety improvement achieved compared to reactors currently in operation (especially concerning potential radioactive releases from accidents with core melt).

# The French Legal Framework Public Information

***“Transparency and security in the nuclear field” Act*** (June 2006)

**The Nuclear Safety Authority  
(ASN)**

**The High Committee  
for Transparency  
and Information  
on Nuclear Security (HCTISN)**

**The Local Information  
Committees (CLI)**

It creates a **right to information**: any person has the right to obtain information from the public authorities, nuclear licensees, persons responsible for transport of radioactive materials or holders of such materials.

It defines **transparency** in the nuclear field: *“Transparency in the nuclear field consists in the set of provisions adopted to ensure the public’s right to reliable and accessible information on nuclear security”*.

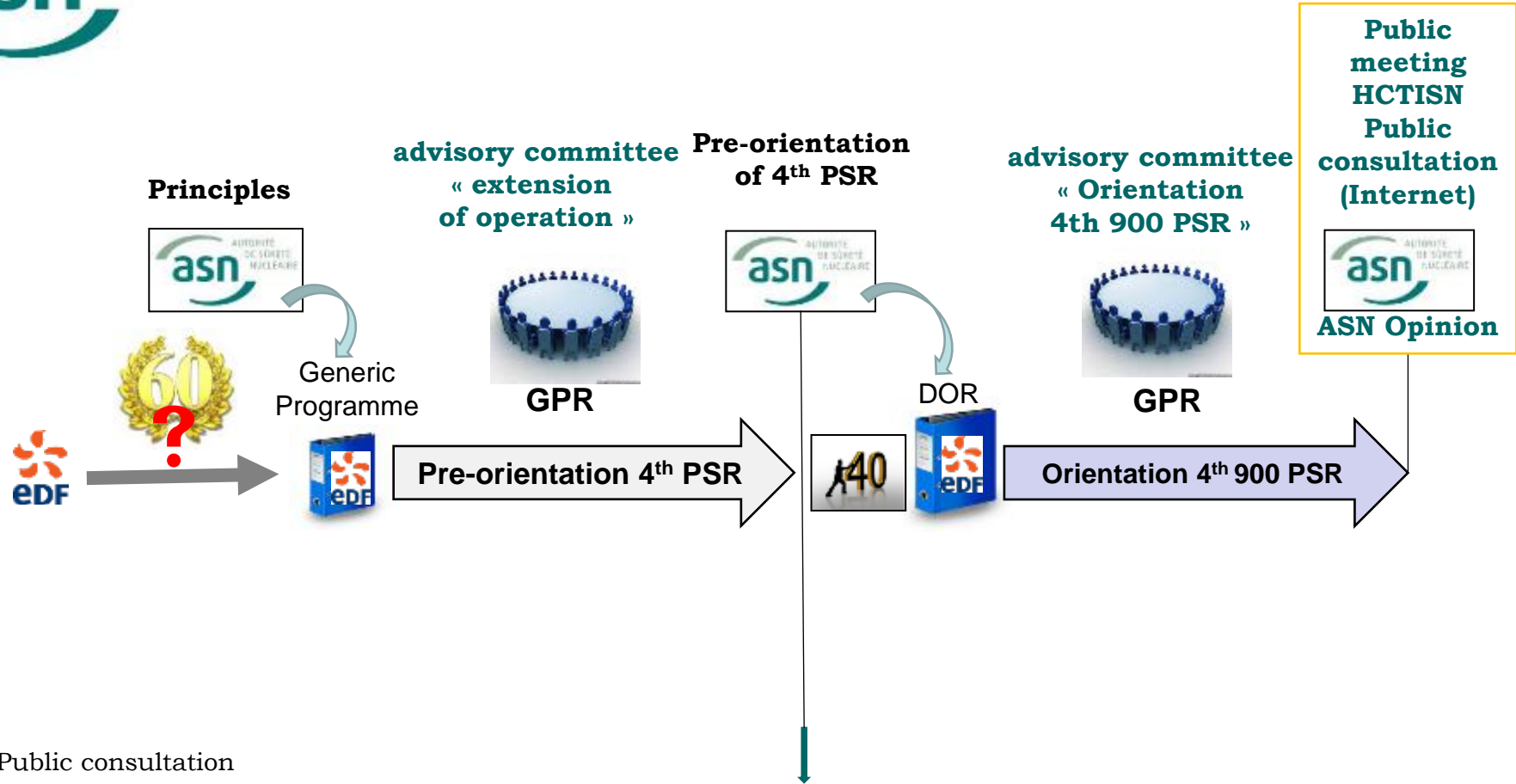
## ■ Transparency

- All ASN's inspection follow-up letters are published on [www.asn.fr](http://www.asn.fr)
- Publication of all ASN resolutions and preparatory documents (opinions and recommendations of its Expert Advisory Committees)
- All results of **environmental monitoring** published on [www.mesure-radioactivite.fr](http://www.mesure-radioactivite.fr)



## ■ Stakeholder involvement in decision-making process

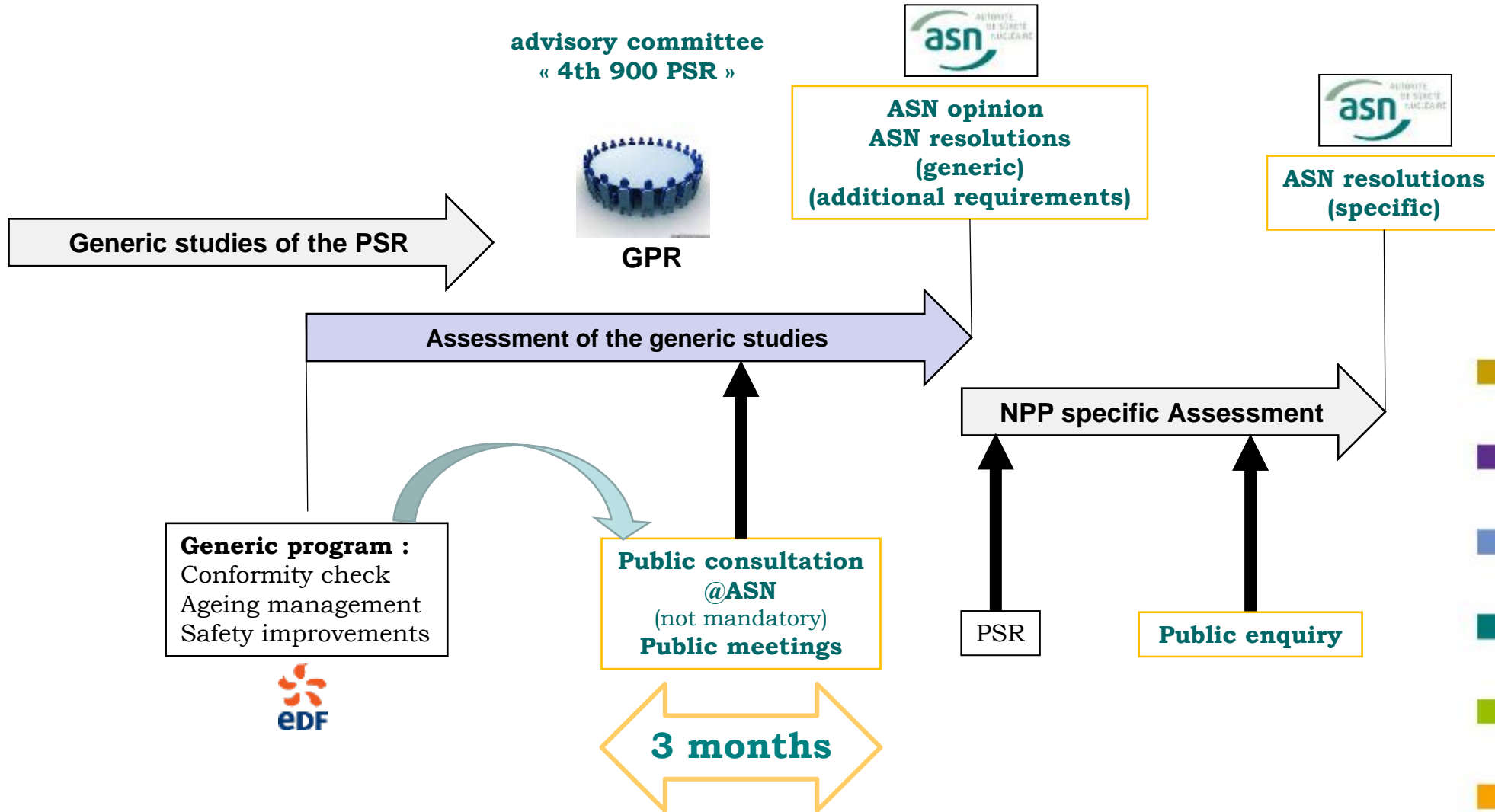
- **Public debates prior to major projects** (e.g. Flamanville EPR, CIGEO)
- **Public enquiries** for all nuclear installations (authorization decree, major modifications, **final shutdown declaration and decommissioning**)
- **Public consultation** on Internet on ASN draft resolutions
  - ↪ publication of the operator's document, received comments + synthesis of the received comments and on the way they have been taken into account



□ : Public consultation

- Situation of the installation (conformity/ageing)
- Directly related with continued operation***
- Safety re-evaluation objective
- Objective defined in relation with:***
  - State of knowledge
  - Comparison with the most recent safety standards





: Public consultation

