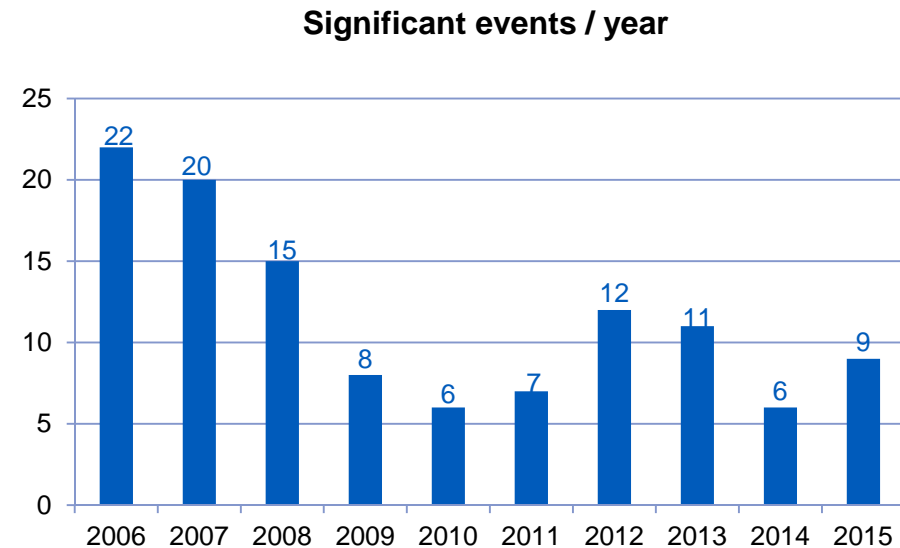


# Radiography on EDF nuclear sites Client's perspective



# History and state of play

- At the beginning of 2000's : some incidents and significant events were declared on our sites.
- 2003 to 2006 : new French legislation.
- 2007 : internal prescriptions guiding and monitoring the activity.
- RP department is responsible on our sites for the implementation of radiography activities

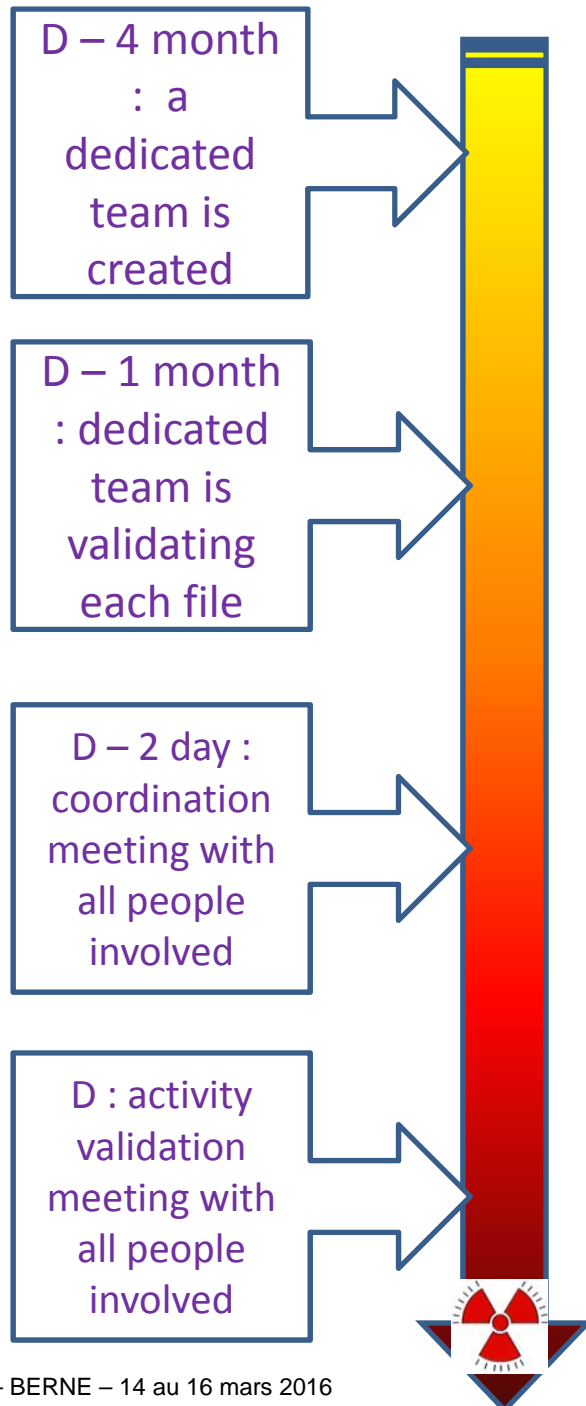


# Internal prescriptions

- A dedicated team drives, prepares, monitors and capitalizes activities.
- Each activity is assessed depending on the radioactive source (Ir 192, Co 60, Se 75, Cs 137) and radiation intensity. A file with a map showing the restricted area is created.
- On-sites visits are initiated (2 at least/ activity).
- Inspections are performed by independent agents.

About 100 000 ejections - insertions / year on EDF nuclear sites and about 400 workers in 10 firms are directly concerned.

# Key steps for a project



SCHEDULE : building schedule, using experience feedback, creating files.

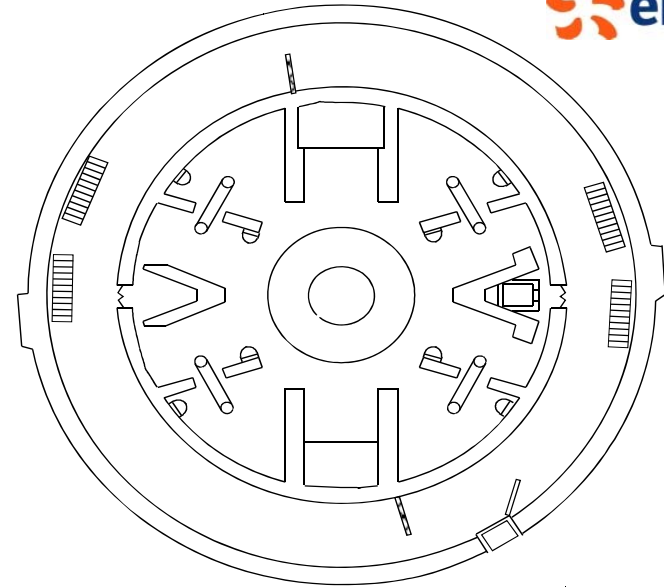
Updating files linked to activities' changes

Checking activities' parameters and logistics settling



# The plan

Goal : showing the restricted area, which is used by workers to signal accesses.

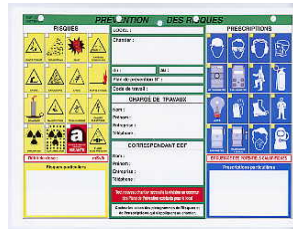


To make it easier for workers, each plan :

- uses graphic standards : safety ladder, stairs, lead protection, source ....
- needs to be updated (in case of changes of the facility)
- takes into account the feedback.

Each plan is checked by an independent controller before activity

At main access



Panneau de chantier

In front of the source



Before ejection, radiologists have to take over some actions, and particularly, marking the restricted area at each access.



Even if each activity is prepared, radiologists keep on asking about their environment and the impact of radiations.



+ each access

# Law, internal prescriptions and field variations

Main gaps detected (significant events) :

- Hole in the restricted area due to a design flaw of the plan,
- marking in the wrong place,
- too small restricted area considering radiation intensity,
- willfully entering in the restricted area.



Because of :

- renewal of workers,
- insufficient knowledge of the facility
- planning changes.
- Risk mapping for other workers.

- In France, only 1 type of projector is allowed (created and builded 30 years ago) : old and mechanical problems.
  - French national regulation is going to change → it will be necessary to modify basic training and change habits.
  - Radiography activities will increase due to aged facilities (risk increase and maybe resource scarcity)
- ...But also development of low-energy radiography, a process improvement by using feed-back...

**Thank You**