



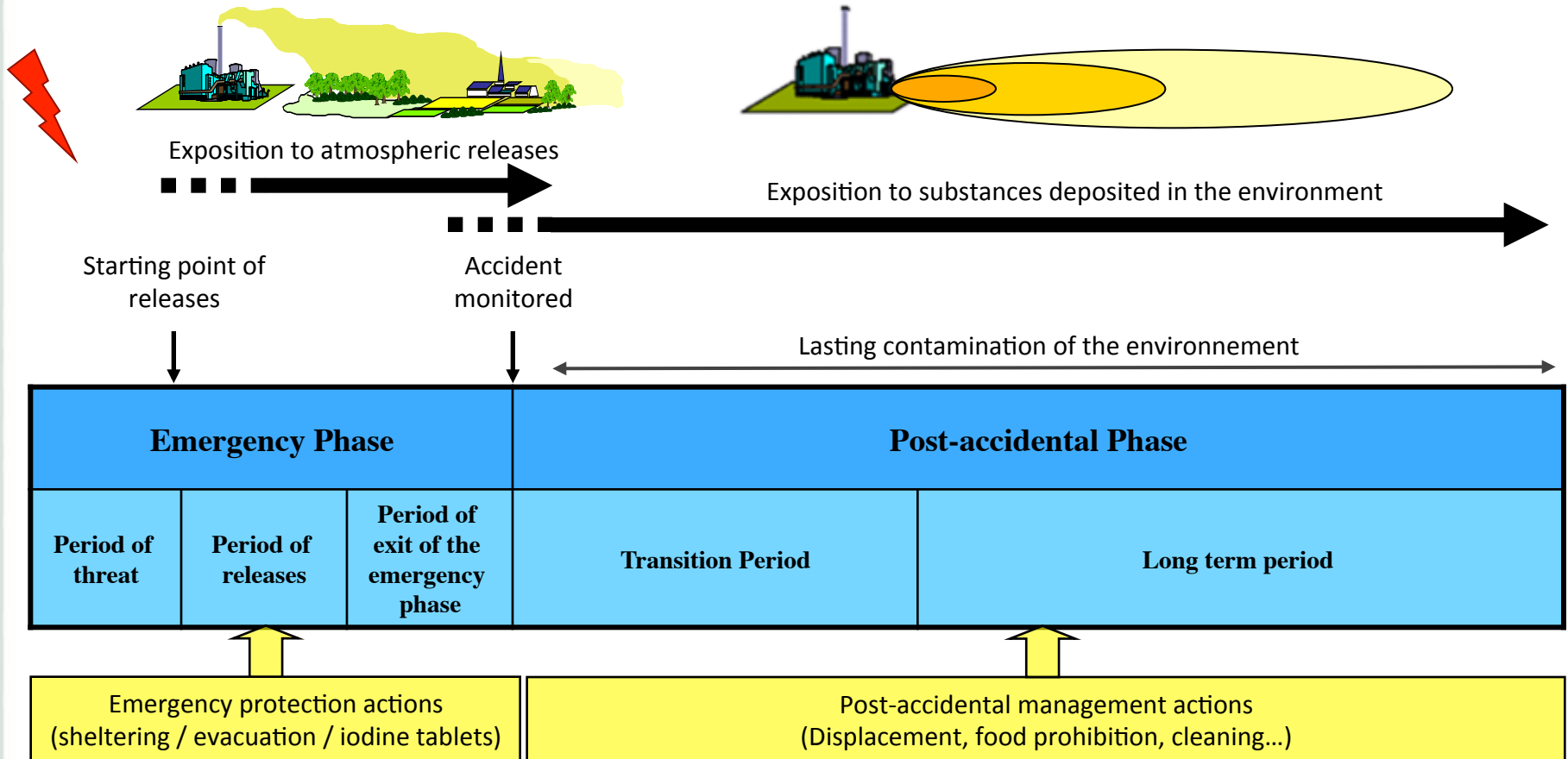
The CODIRPA : a French initiative to manage post-accidental situations

Main achievements and future challenges

ASN, France

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From emergency to post-accident situation





the “CODIRPA”

Steering committee implemented from 2005 (still active !) to establish the framework, define, prepare and implement the steps necessary to deal with a post-accident situation

- ✓ A pluralist composition

National and local administrations, expert bodies, operators

Non-institutional members: NGOs, local elected officials, professional unions, experts and consultants

Foreign radiation protection authorities (Germany, Switzerland, Luxemburg)

- ✓ Thematic working groups (technical reports available on www.asn.fr)

Drinking water, foodstuffs, radioactivity measurements, health monitoring, remediation, waste management, protection of emergency workers, compensation, organization of public authorities, information of the public and radiation protection culture

+ 2 “transversal commissions” (transition and long term)

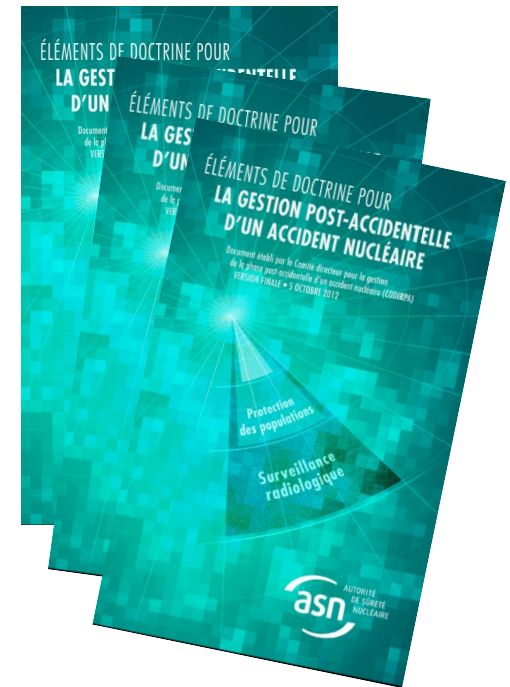
- ✓ Principles closed to ICRP 103 and 111

2012 : “Policy elements for post-accident management in the event of a nuclear accident”

3 fundamental objectives (strongly connected)

- protecting the population against the dangers of ionising radiations
- providing support for members of the population who have suffered the consequences of an accident
- preparing the social and economic recovery of the affected areas

- ✓ Main document : objectives, principles, key actions and strategic orientations for the transition and long term phases
- ✓ Annex 1 : The first actions to be put in place at the end of the emergency phase
- ✓ Annex 2 : The guidelines for managing transition period (few months)
- ✓ Annex 3 : The guidelines for managing long-term period (several years)



www.asn.fr

www.french-nuclear-safety.fr

2014 : French national action plan on nuclear emergency

- a tool for understanding and a decision support : sets out how emergency management is organized, the strategy to be implemented and the main measures to be taken by the French government.
- the first national plan that deals with post-accident phase
→ takes into account the CODIRPA policy elements (for the end of emergency phase)



<http://www.sgdsn.gouv.fr>
(in french)



Policy elements for post-accident management in the event of a nuclear accident

6 Key points

- Immediate delineation of a PA zoning for the contaminated area, with an evolution during the transition period
- Medical and psychological care, radiation monitoring, financial support and compensation for those affected by the consequences of the accident
- Radiological characterisation and surveillance of the environment, foodstuffs and drinking water
- Rapid implementation of a specific approach to management of foodstuffs and drinking water
- Sustainable waste management solutions in response to the rapid increase of the volume of contaminated waste
- Emergence of new forms of governance and active participation of the affected population considered as a key point for economic recovery within affected areas

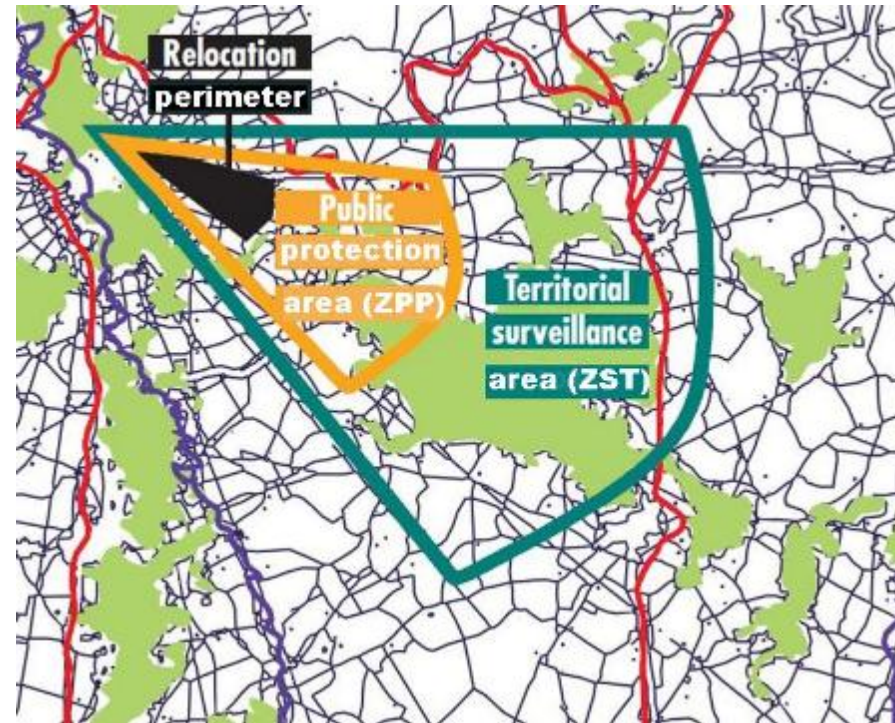
predictive model assessment

→ if necessary, a relocation perimeter

effective dose from external exposure alone
> 10 mSv for the 1st month

→ a public protection zone (ZPP)

- people can move freely but actions are required to reduce population exposure
- food bans, radiological measurements, health surveillance, decontamination actions and specific wastes management



Guidance value based on dose criteria

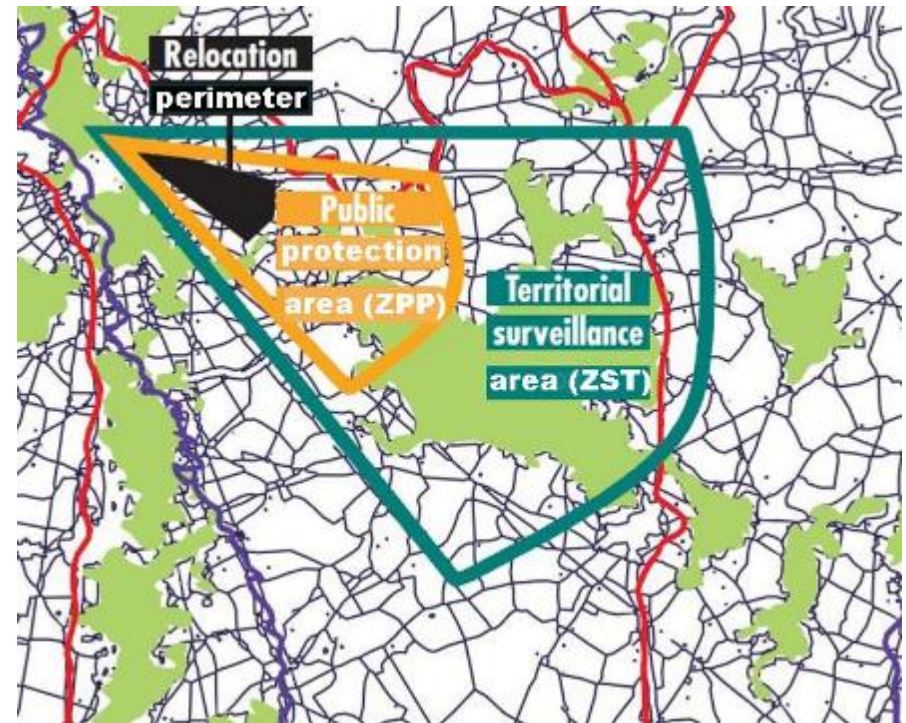
Effective dose (external + ingestion) > 10 mSv / 1st month or

Thyroid equivalent dose > 50 mSv / 1st month

→ a territorial surveillance zone (ZST)

- contamination is lower than in ZPP but nonetheless significant and can affect foodstuffs and agricultural products → to preserve business activity by ensuring that only compliant products may enter distribution channels.

- food bans based on an assessment of contamination levels of foodstuffs considered as the most sensitive to radioactive contamination (eg. milk, salads)



Contamination levels of locally produced foodstuffs > Council Food Intervention Levels (Council regulations Euratom n° 2016/52)



extent of the area likely to decrease during the firsts months (decay of short-lived radionuclides, measurements results)

Cattenom : a full scale exercise



GOOGLE



EDF



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Cattenom : a full scale exercise

✓ Recommendations :

- iodine : 6 km
- sheltering actions : 3,5 km
- evacuation of population : 1,5 km



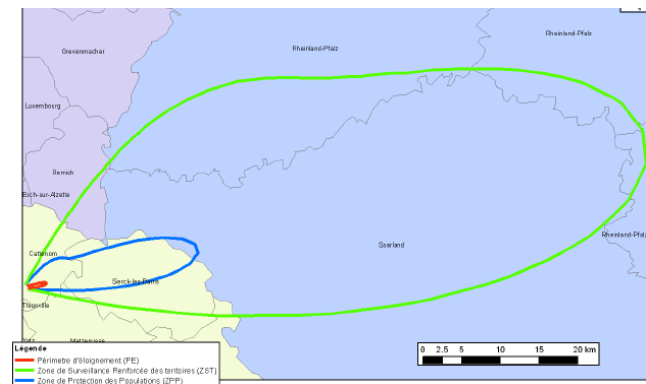
✓ Emergency actions have been taken successfully and proportionate to the needs.



→ Questions for PA phase : Lifting of the sheltering action ? Return of population ?

✓ PA zoning :

- PE : 2,5 km
- ZPP : 23 km
- ZST : 83 km





The main protective actions in the ZPP

Immediate delineation of the ZPP provides the structural framework for early decisions at the end of the release:

For initial protection measures :

- To decide about the long term evacuation and relocation (after sheltering during the early phase)
- To organize food bans of locally produced food and feedstuffs
- To engage the first clean-up operations within urban areas

For the organization of medical and psychological care, human radiation monitoring, financial support and compensation

- Opening information centres for the affected populations

Opening information centers for the affected populations

→ structure to set up as soon as the decision to lift the sheltering is taken

- ✓ **single-desk** : as it allows the inhabitants of the contaminated territories to have a single place where information from competent people from various fields is gathered (radiation protection, health, including mental health, public and social services, compensation professionals...)
- ✓ **network head** : place for a first screening of potential health problems and reference to relevant specialized professionals if needed
- ✓ **place for development of practical radiological protection culture** (ex. radiological measurements in locally produced foodstuffs) for residents and professionals
- ✓ **place for dialogue with stakeholders** on protection actions for the affected people residing within contaminated territories (ex. reference levels for relocation)



Opening information centers for the affected populations

Information centers are part of a larger system, allowing on one hand the measurement of the surface and internal contamination of people and also the decontamination of persons if necessary:

- strict control of external contamination (skin, hair, clothes) and external decontamination if needed, so as not to distort the measurements of internal contamination
- control of internal contamination
- regular calibration checks of equipment, cleaning of trucks and verification of non-contamination of operators to ensure reliable measurements results



The main actions in the ZST

Radiological characterisation of :

- environment, foodstuffs and drinking water
- and manufactured products





Feedback for post-accident situations management

→ As an overview

- Useful tool : a strong framework for structuring actions on the ground and providing overall direction
- Validation of policy elements
- Exercise highlighted the global importance to prepare (local) authorities and stakeholders

→ Specific issues

- Return of population : a new criteria to fulfill ?
- Lack of policy elements for some topics : drinking water, manufactured goods
- Some topics warrant a fuller examination : taking census and providing medical-psychological support to population
- Support to population and communication must be reinforced, stakeholders involvement should be promoted



CODIRPA development : Ongoing work

→ Complete the post-accidental doctrine and if necessary review it

- Analyze feedback experience from Fukushima accident
- Explore new scenarios
 - Take into account a new scenario of a nuclear accident affecting a French NPP and leading to a release of radioactive substance in the atmosphere during several days
- Focus or explore (new) topics
 - management of manufactured products : wood, quarries, vehicles ...
 - waste management,
 - Sea contamination : fishery resources and marine environment
 - Inland waters : drinking water, water resources, aquatic environments

→ Stakeholders involvement

- Health professionals
- Population



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Main achievements and futures challenges

report with the policy elements of the doctrine :
<http://www.french-nuclear-safety.fr>
English and Japanese versions available

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