



French regulatory framework for radon exposure in buildings with public access and in workplaces

Eric DECHAUX

and Jean-Luc GODET

Nuclear Safety Authority

FRANCE





French regulatory framework for radon exposure in buildings with public access and in workplaces

CONTENT

- 1/French regulation in buildings with public access and in workplaces
- 2/Results of the regulatory measurements
- 3/Analysis of the difficulties and corrective actions
- 4/Key points for discussion



Regulatory framework for radon exposure in buildings with public access and in workplaces

1/French regulation in buildings with public access and in workplaces





1/ French Regulation in buildings with public access and in workplaces

- In France, the regulations regarding the management of radon related risks have gradually been extended into new areas.
- For places opened to the public and for workplaces, a regulation approach has been chosen.





Public Health Code



Surveillance of radon exposures (R.1333-15)

And

**Ministerial Order 22 .07.2004 concerning radon
risk management in buildings with public
access**



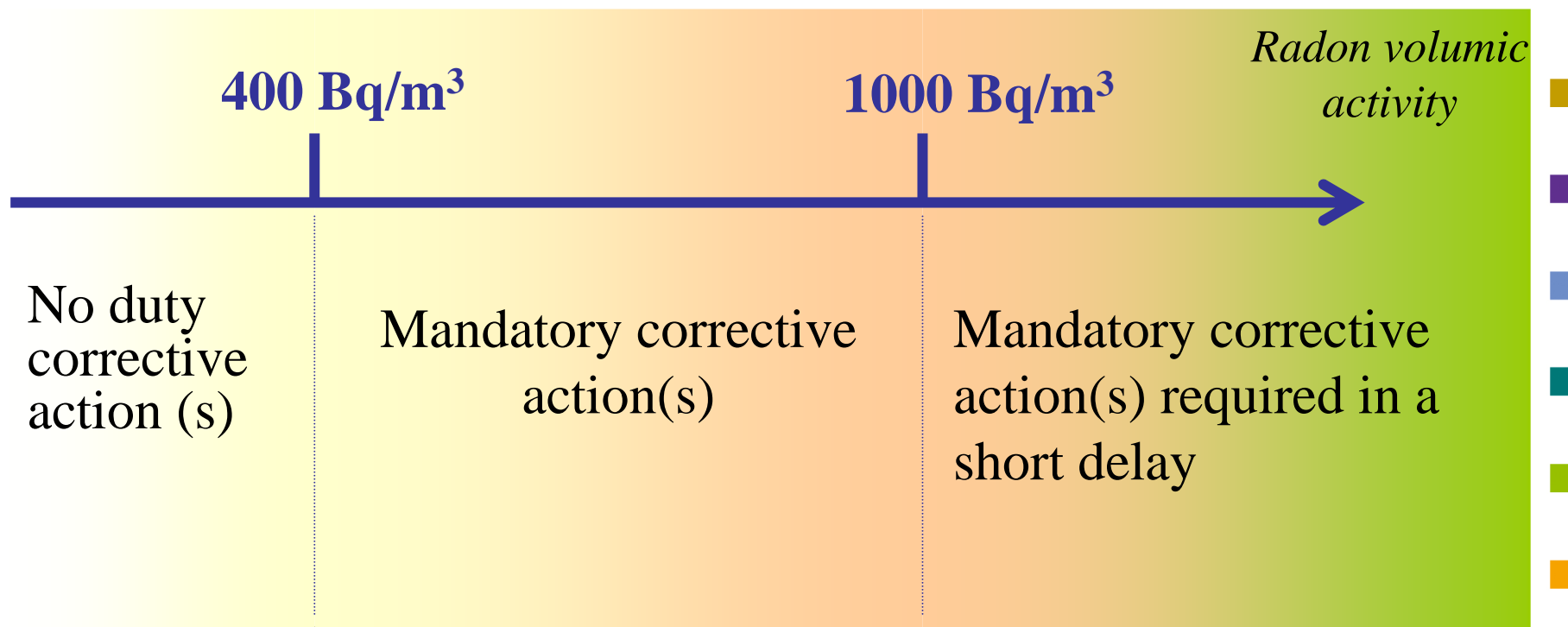
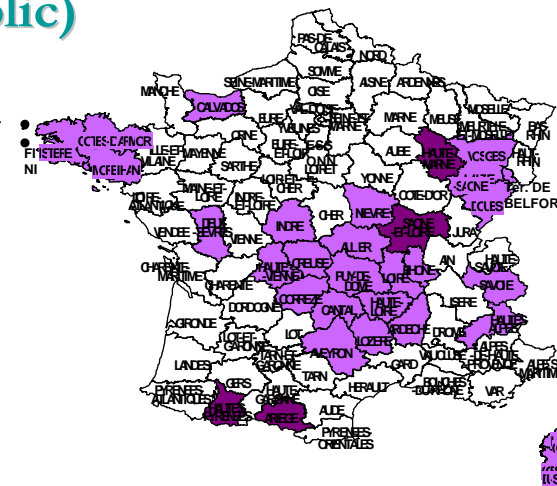


French Regulations for RADON

(places opened to members of the public)

Radon measurements are mandatory :

- in 31 priority departments
- in schools, hospitals, jails and spas
- made by organisms approved by ASN
- according to ISO standards





Labour Code



Measurement of radon concentration
(R.4457-6)

Ministerial Order published 2 september
2008

and ASN décisions

concerning radon risk management in
workplaces

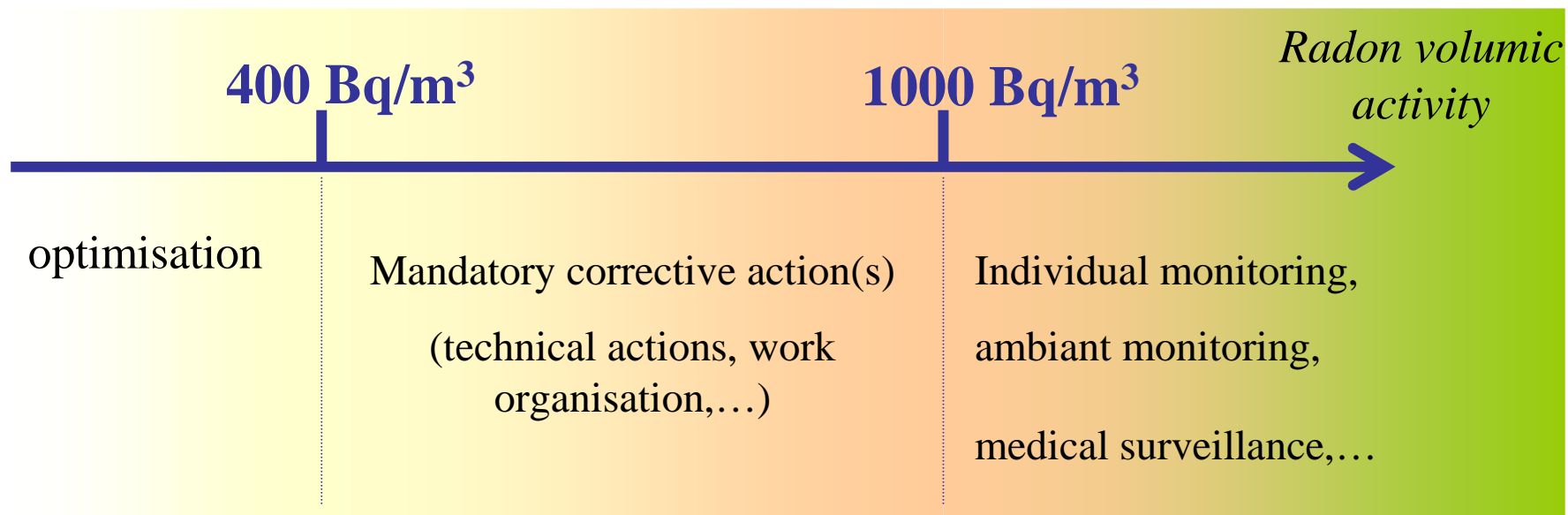




French Regulations for RADON (workplaces)

Radon measurements are mandatory :

- in 31 priority departments
- in workplaces precised by interministerial order
- made by organisms approved by ASN
- according to ISO standards





1/ French Regulation in buildings with public access and in workplaces

- The list of underground workplaces concerned by radon measurements :
 - underground car park,
 - storage areas,
 - servicing areas,
 - buildings and structure servicing,
 - water cure establishment
 - ...





French Regulation in buildings with public access and in workplaces

Measurements

- In France, radon activity concentration measurements are performed either by the IRSN or by organisms that are approved by ASN
- 3 levels are defined for approved bodies :
 - level 1A (N1A) is required for radon measurements as part of a screening process or verification of the long-term effectiveness of a remediation technique in buildings,
 - Level 1B (N1B) is required for structures and cavities
 - level 2 (N2) is required for radon measurements such as to identify the radon source and transfer into the building by means of supplementary investigations.
- In 2014, 46 N1A, 9 N1B and 8 (N2)
- .
- Every year, ASN inspects 10 approved bodies with the aim of checking the compliance of their organisational and technical practices with the regulatory framework and standards
- The control of regulatory application in buildings with public access is done by regional health Agency



2/ Results of the of the regulatory measurements



Type of establishment	total number	Nb < 400Bq/m ³	Nb entre 400 et 1000 Bq/m ³	Nb> 1000 Bq/m ³
Educational establishments	7641	6182	1107	352
Health and social establishments	4646	4008	451	187
Spas	26	15	9	2
jails	25	19	5	1
TOTAL	12338	10224	1572	542

Overview of the 2005-2013 Radon measurement campaign by approved bodies in buildings with public access

The 30th september to 02nd
October 2013

Radon WORKSHOP

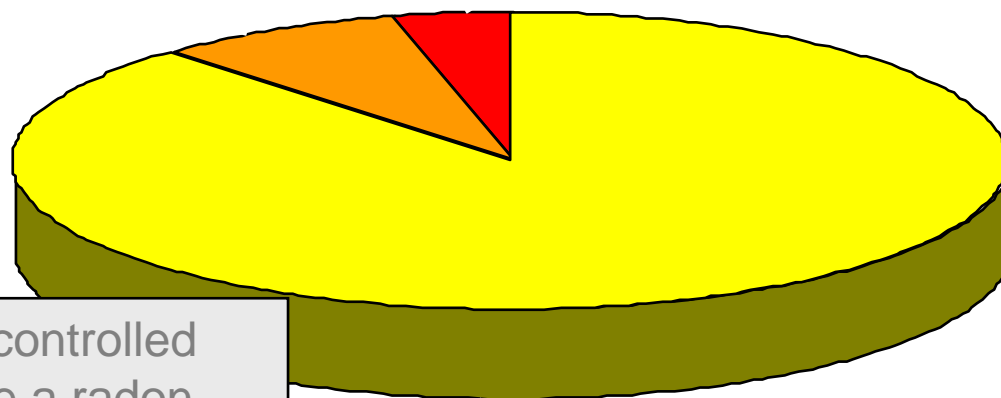




Overview of the 2005-2013 measurements campaign (places opened to members of the public)

Buildings
between 400 and 1000 Bq/m³
12,7%

Buildings > 1000 Bq/m³
4,4%



82,9% of the controlled
buildings have a radon
volumic activity less than 400
Bq/m³

Buildings < 400 Bq/m³
82,9%



Workplace	total number	Nb < 400Bq/m ³	Nb entre 400 et 1000 Bq/m ³	Nb> 1000 Bq/m ³
Hydraulicworks/ dam	21	14	3	4
Cave	8	2	1	5
Spa	7	3	1	3
Undergroud building (buildings with public access)	18	13	3	2
Others	11	8	0	3
TOTAL	65	40	8	17

Overview of the 2010-2013 radon measurement campaign in workplaces

The 30th september to 02nd
october 2014

Radon WORKSHOP

14



3/Analysis of the difficulties and corrective actions





3/ Analysis of the difficulties and corrective actions

- Regulation in places opened to the public and in workplaces seem to be a good approach for managing radon related risks.
- but complementary actions are needed to increase the support and cooperation of local stakeholders involved in this issue





3/ Analysis of the difficulties and corrective actions

Three main difficulties :

- Evaluation of Regulatory application
- Control of the remediations execution
- How to improve the information to buildings owners and employers

→ Ministry departments and ASN have developed , in 2014, new tools to improve effectiveness regarding these three points :





HOMEPAGE

Aide | OA IDF

SISE ERP

Liberté • Égalité • Fraternité
RÉPUBLIQUE FRANÇAISE
MINISTÈRE
DES AFFAIRES SOCIALES
ET DE LA SANTÉ

ars
Agence Régionale de Santé

▶ Accueil | A+ A-

Bienvenue dans SISE-ERP V1-22 OA IDF

Bienvenue sur l'application SISE-ERP dédiée aux organismes agréés.





Collectivités territoriales : Guide d'aide à la décision pour la gestion du risque radon



Téléchargez le Guide

Le risque lié au radon ▾

Rôle de la collectivité territoriale ▾

Fiches techniques ▾

Références ▾

Outils pédagogiques ▾

FAQ ▾

Le radon est un gaz radioactif naturel qui provient essentiellement des sols granitiques et volcaniques. Il se diffuse au travers des sols et parois des constructions et peut se concentrer dans des espaces clos mal ventilés. Le radon peut exposer la population à un risque de cancer du poumon.

Ce guide a pour objectif de préciser les obligations des collectivités territoriales dans la prise en charge du risque lié au radon.

Il se décline en 3 axes :

- ✚ la collectivité territoriale est propriétaire d'établissements recevant du public (ERP)
- ✚ la collectivité territoriale est un employeur
- ✚ la collectivité territoriale souhaite mettre en place une politique volontariste (habitat privé, nouvelles constructions)

[En savoir plus](#)



LA DÉMARCHE GÉNÉRALE

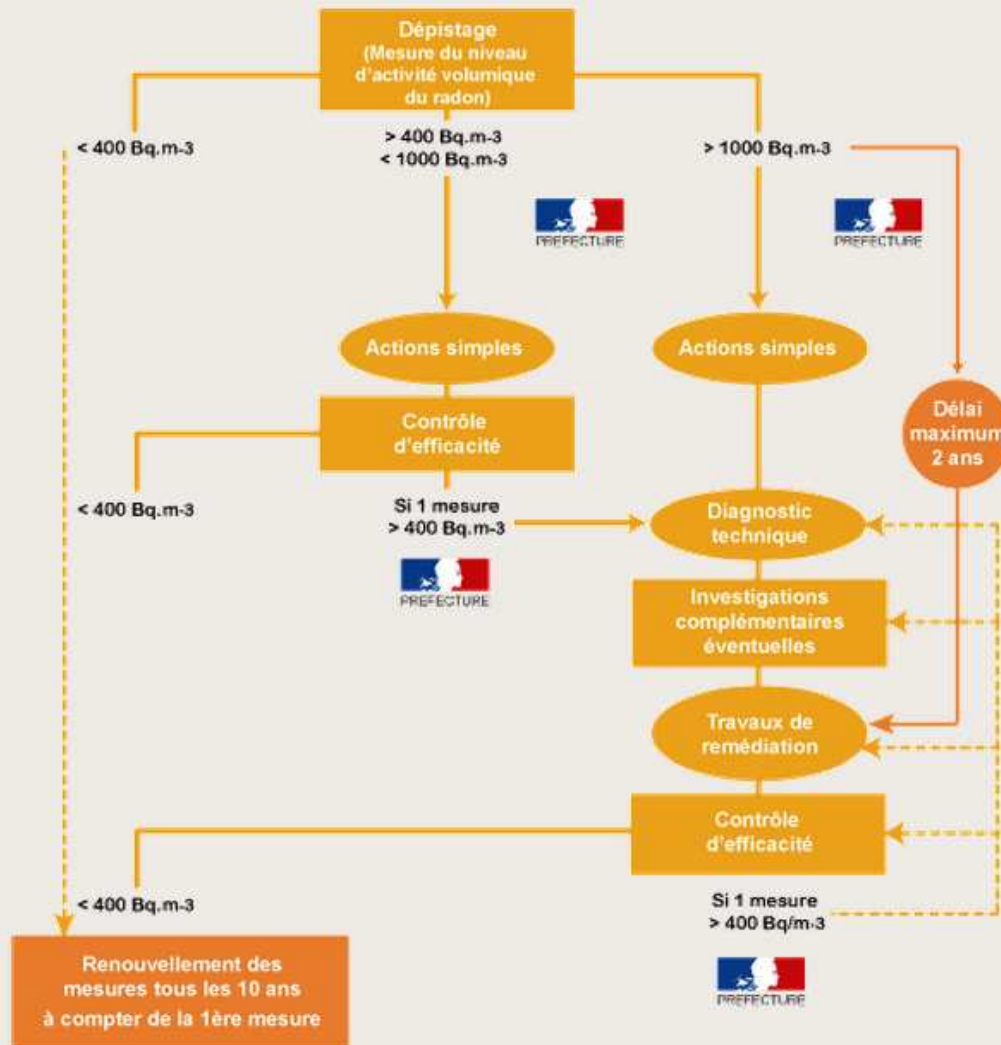
Dans cette partie, la collectivité territoriale est soit propriétaire, soit exploitante des établissements recevant du public concernés par l'arrêté du 22 juillet 2004, et elle est située dans une zone géographique concernée par la prise en charge du risque lié au radon.

LA COLLECTIVITÉ TERRITORIALE EST PROPRIÉTAIRE D'ERP SOUMIS À LA RÉGLEMENTATION

La démarche générale

- ✦ Les ERP concernés
- ✦ Le dépistage
- ✦ Interprétation des résultats et actions à mettre en place
- ✦ Le diagnostic technique
- ✦ La sensibilisation des chefs d'établissement

 Version imprimable



4/Key points for discussion





4/ Key points for discussion

- Control of the regulatory application
- Control of the remediations execution
- how to reach employers in particular those who are not accustomed to topics radiation protection
- For workplaces, employers / owners
- Joint approach radon/indoor air quality/energy saving





Thank you for your attention !

