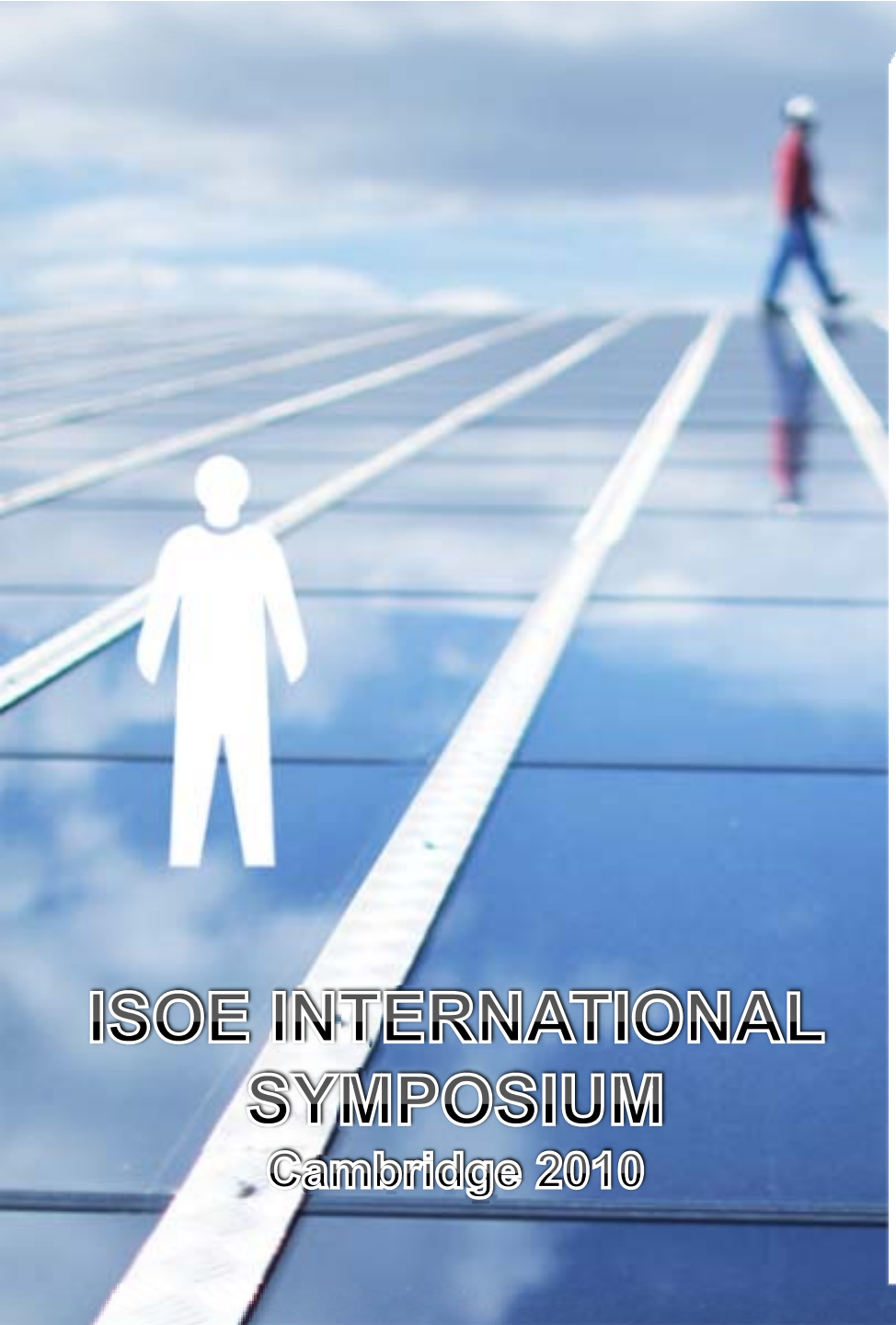

Practical Guides for the Integration of Radiation Protection from the Planning Stage of Jobs to the Realization and Feedback Experience

Risk Analysis

Optimisation

Follow up

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ISOE INTERNATIONAL SYMPOSIUM
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EDF
CHANGER L'ÉNERGIE ENSEMBLE

Conception of an intervention

A complex activity:

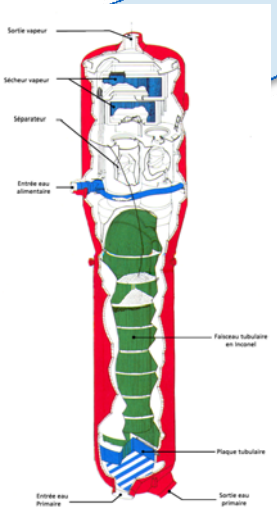
- Technical choices
- Design of tools
- Control of the costs
- ALARA implementation
- Justification of the ALARA implementation
- Follow-up planning
- Realisation on sites
- Follow-up
- Feedback
- …

The statutory context

Regulation

Supply an analysis of the radiological risks

EDF RP rules



Demonstrate the optimisation of radiation protection of the operation during its planning and its realization

It is needed to help EDF engineering Dept and Contractors

- To facilitate the respect for these requirements, EDF also proposes 3 practical guides

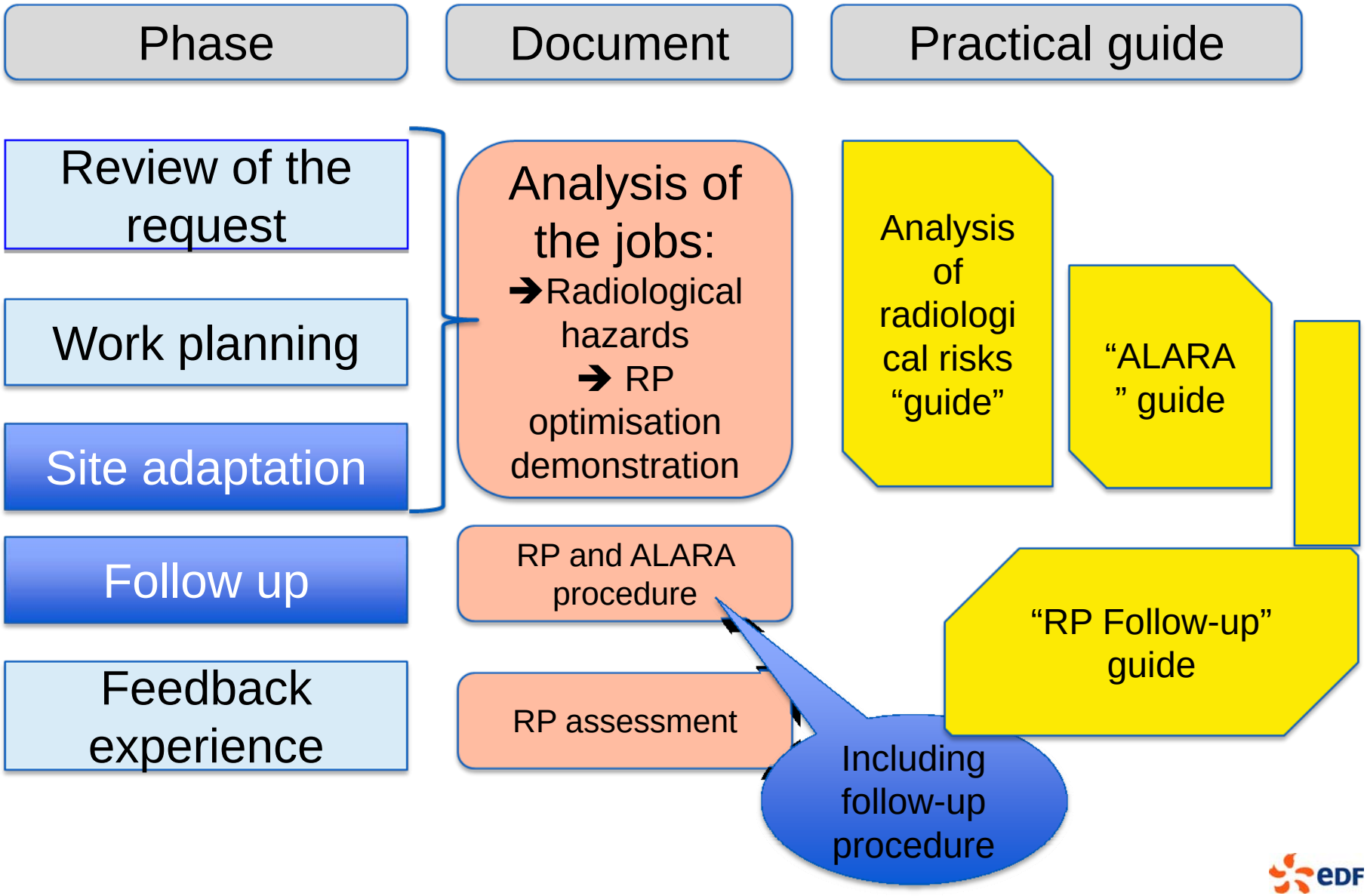
Guide: "Analysis of Radiological

...ce for ...ation of the ...ation of radiation ...rotection at workplace

!!! These 3 guides come from a common reflection between EDF and its contractors !!!

Guide for the RP follow-up of modification and maintenance operations

Scope of the three guides (1)

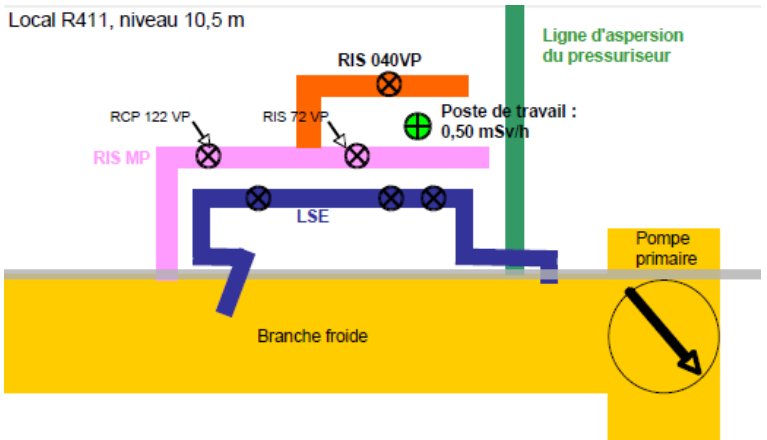


Scope of the three guides (2)

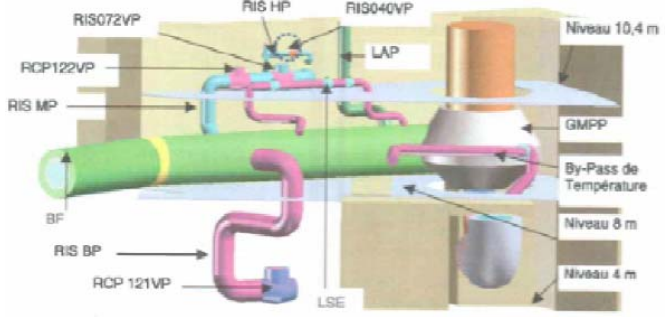
- Conceived for any operation of modification or national maintenance taking place in a controlled area or a supervised area (including radiographic NDT)

- Applicable to other types of operations: demolitions and local maintenance operations performed by the plant

- Adapted more particularly to operations with a strong radiological stake: the proposed measures can be modulated according to the radiological stake .



Structure of the guides



- The 3 guides are structured in the same way

- Theoretical part: description of the proposed methodology
  - Objective
  - Data needed
  - Data produced

- Practical part:
  - Datasheets
  - Examples of application
  - Appendices presenting models of documents

Guide on “Analysis of Radiological risks”

- Objectives:
  - Help to implement an analysis of the radiological risks of an operation
  - Supply general and practical information related to the radiological risks and the associated parades

Approach proposed for the analysis of risks:

➔ Identification of the risks and the levels of risks

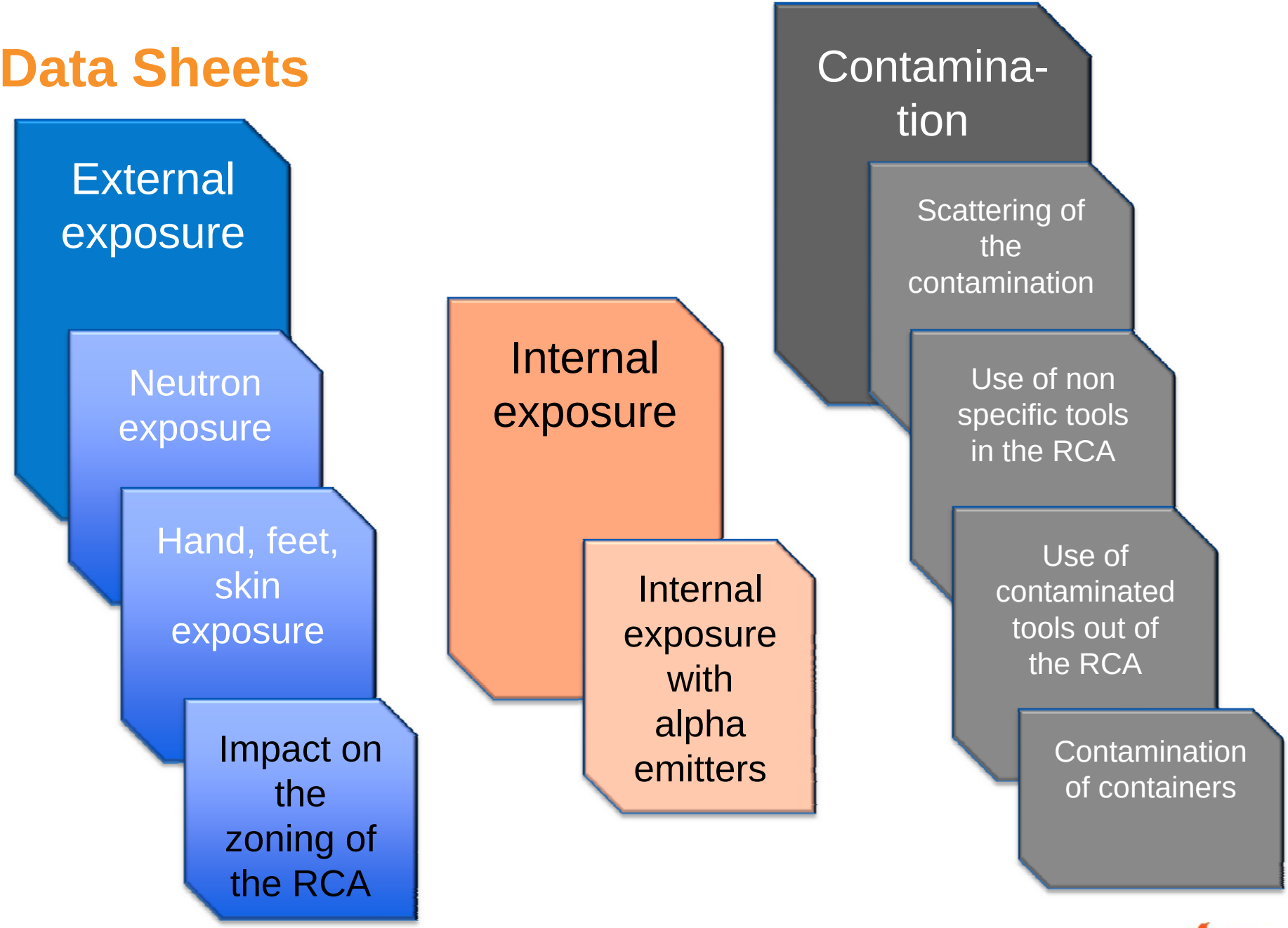
➔ Consultation and use of the data sheets of risks:

“Mother” datasheets: external exposure, internal exposure, contamination

“Daughter” datasheets: specific risks connected to the general risks described in mother “datasheets”

Implementation of the recommended technical and organizational parades

Data Sheets


External exposure
Neutron exposure
Hand, feet, skin exposure
Impact on the zoning of the RCA
Internal exposure
Internal exposure with alpha emitters
Contamina-tion
Scattering of the contamination
Use of non specific tools in the RCA
Use of contaminated tools out of the RCA
Contamination of containers

Methodological guide for the ALARA implementation

- Objectives:

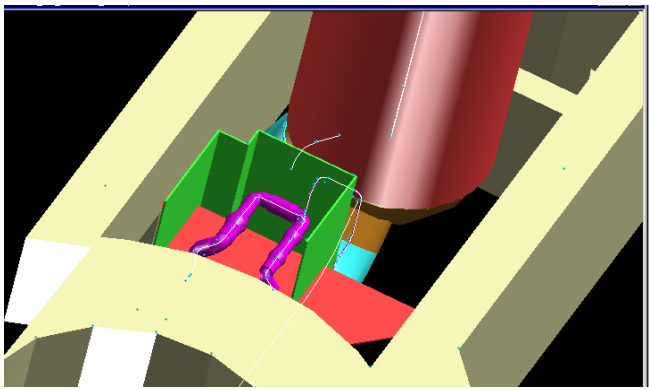
- Supply a methodology allowing to structure and to formalize the optimisation of radiation protection during the conception of the operations

- Supply datasheets relative to the implementation of actions to reduce doses: reduction / control of dose rates, reduction / control of times of exposure, control of the coefficient of exposure.

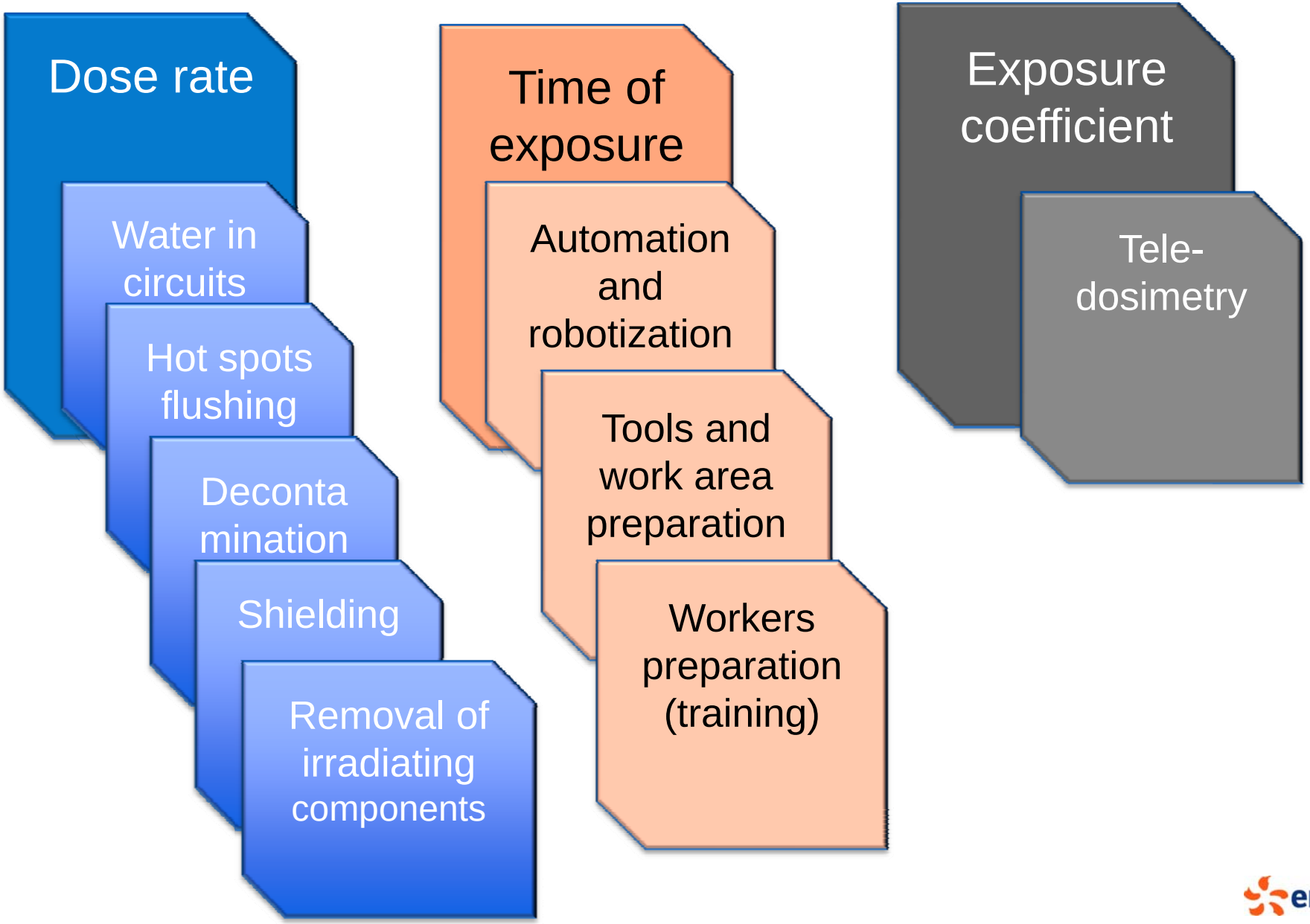
ALARA Implementation

Approach proposed for the analysis of optimisation:

- Identification of the major constituents of the dose
- Identification of potential actions to reduce doses (cf. datasheets)
- Evaluation of the impact of the actions
- Selection of the actions
- Sensitivity analysis



ALARA Datasheets



Guide for follow-up radiation protection

- Objective:
- Help in the elaboration [illegible] low-up of operations of m[illegible]

Steps proposed for [illegible] the RP monitoring:

➔ Definition of the org[illegible] monitoring during the co[illegible]

➔ Modalities to mon[illegible] individual dosimetry, the RP e[illegible]

➔Adaptation of the defi[illegible]

➔RP Follow up

➔Feed back analysis

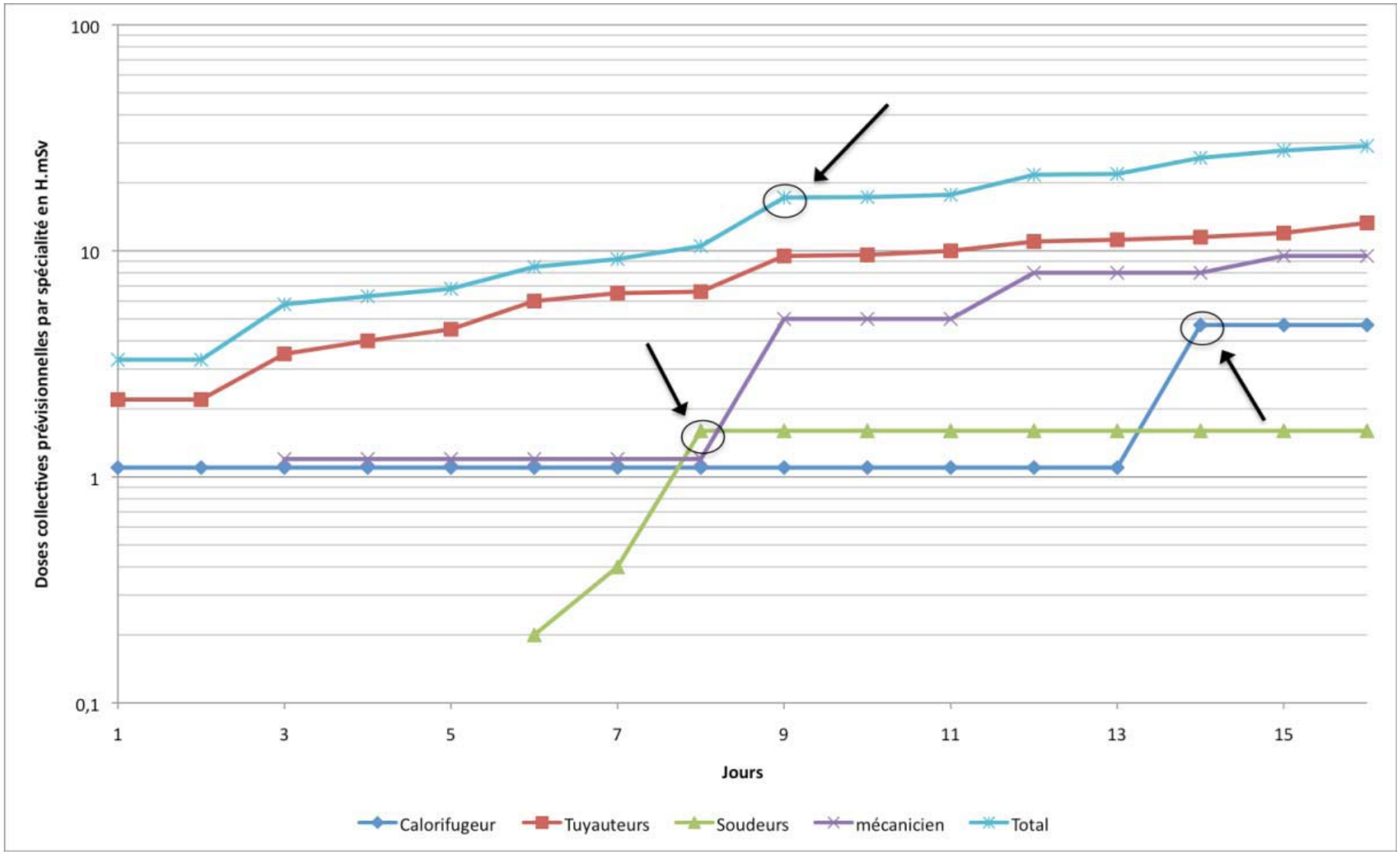
➔ Implementation of the RP actions

➔ Recording of the radiological conditions and the dosimetric data

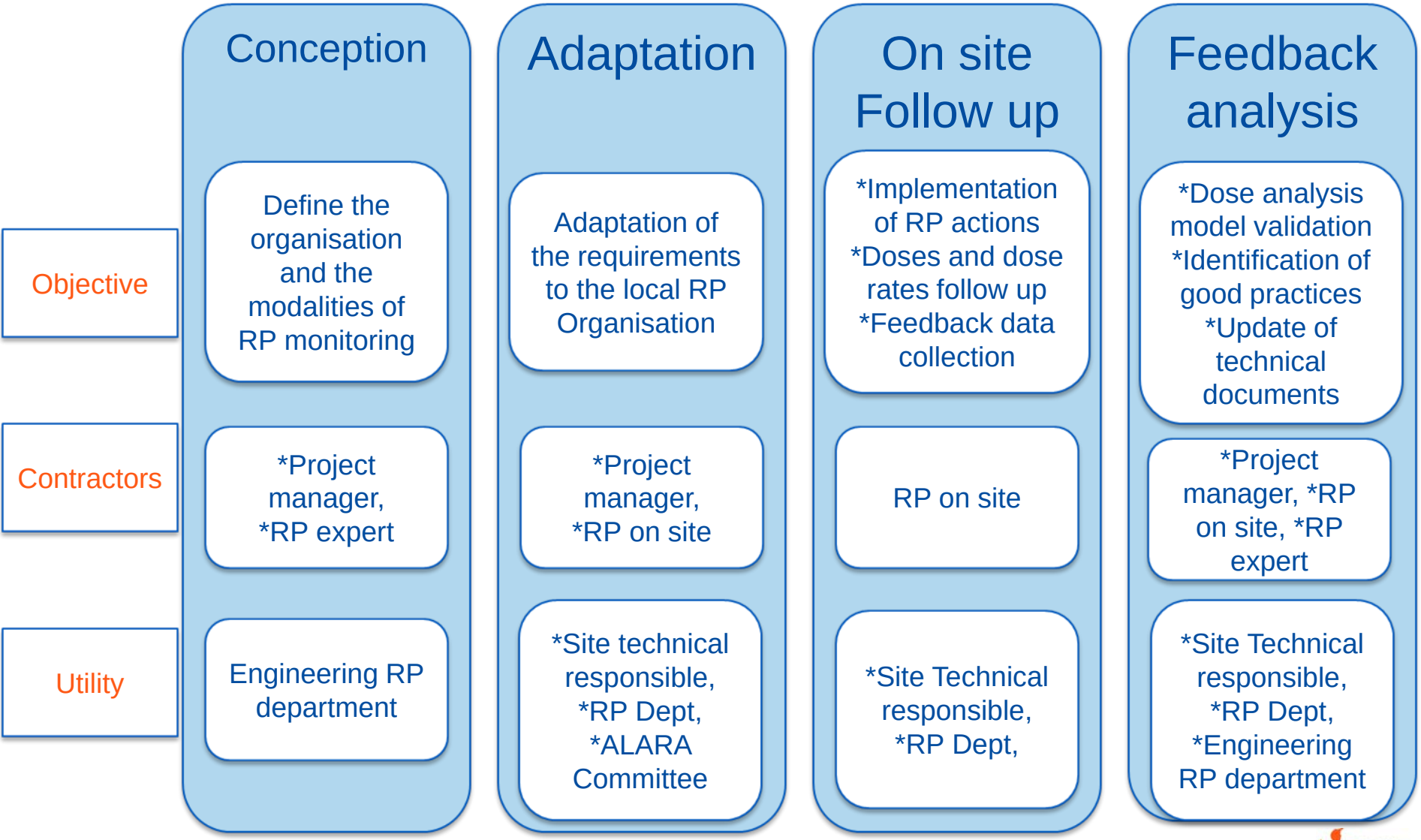
➔ Detection of RP events

➔Recording of the data needed to benefit from the feedback experience of the operation

To prepare the follow-up of doses



Objectives and main players during the RP follow-up



Main users of the three guides

- Responsible staff for the design and planning of operations
- Job planning responsible staff
- Radiation protection staff

Within EDF (corporate level, engineering units, plants) and for contractors

Usefulness of the guides

➔ Synthesis of applicable RP requirements defined by EDF, capitalization of know-how and feedback experiences

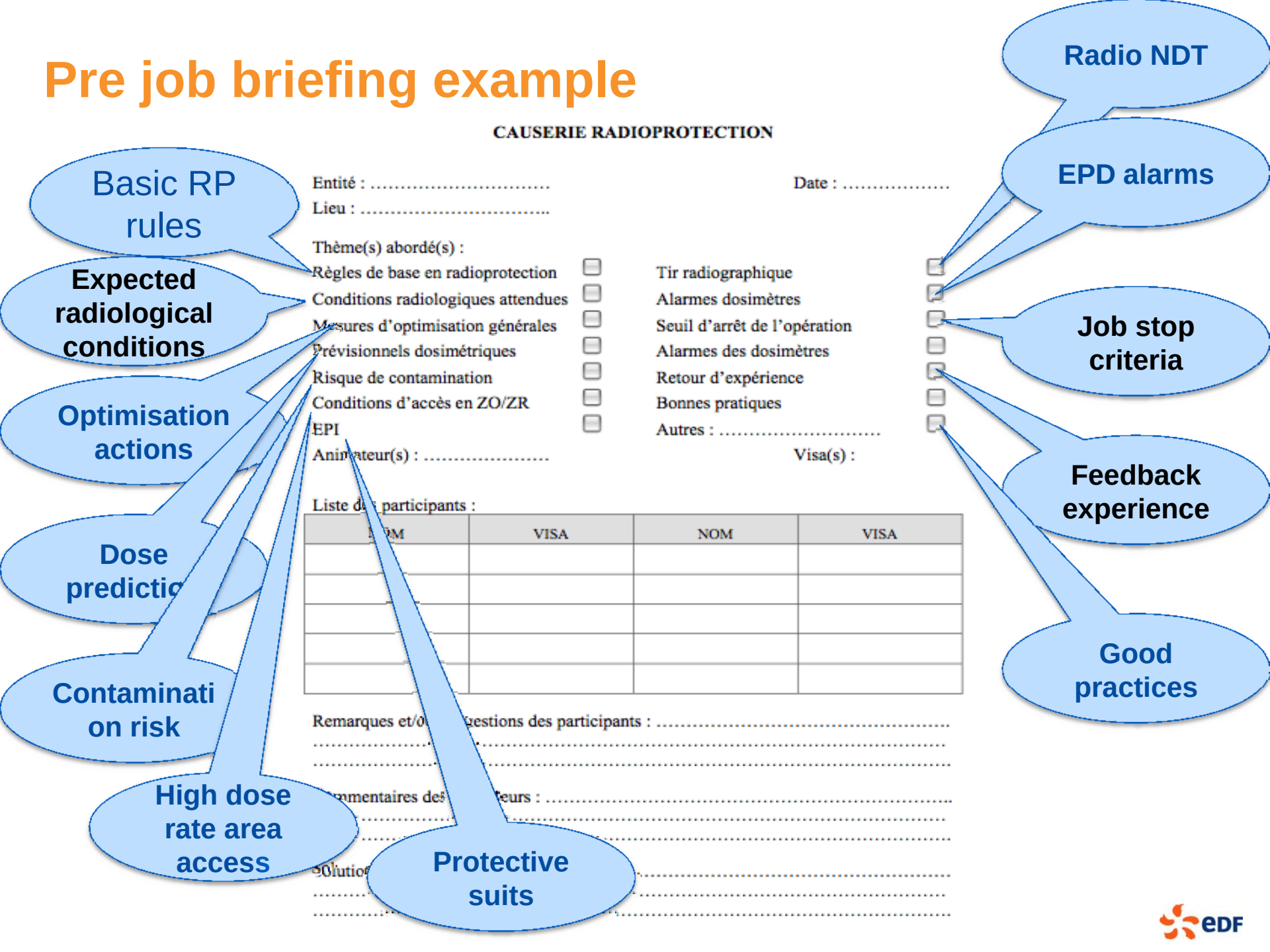
➔ Practical help to:

- Identify the radiological risks of an operation
- Identify and select the actions of RP optimisation to set up
- Plan the RP monitoring of operations and implement it
- Collect elements of feedback experience

➔ Homogenisation and harmonization:

- Of contents of files used by EDF contractors
- Of practices on the field

Pre job briefing example



Contributors