

## **Background**

The recently revised Royal Decree of 17 October 2003 (the Belgian Monitor of 22 November 2003) stipulating the nuclear emergency plan for radiological risks on the Belgian territory aims at reducing the impact of a radiological or nuclear accident to the population. It describes the organisation, tasks and necessary interactions between the different participating entities at the federal, provincial and communal level. It also foresees that each major nuclear installation holds regularly exercises with the different off-site entities to test and improve the response procedures. Under contract with the Ministry of Interior, and in consortium with AVN and IRE, SCK·CEN has been assigned as co-ordinator for the improvement of the methodology for emergency exercises, and to apply this for the 2005 exercises of the nuclear installations of Doel and Tihange.

## **Objectives**

The main objective of this project is to define a methodology allowing to conduct exercises in a more efficient way. The methodology is based on the IAEA EPR-EXERCISE (2005) publication. This should in turn (1) allow the principal actors to train the different aspects of a nuclear crisis, (2) allow easier detection of deficiencies in the emergency plan and its application, and (3) result in the necessary corrective actions to improve future responses to crises.

## **Principal results**

A compromise between different possible exercise objectives has to be found in a coherent and meaningful way. The elaborated methodology encompasses following steps:

- defining the global scope, type and scale of the exercise;
- assigning the exercise management team (co-ordinator, scenario developers, exercise controllers and exercise evaluators);
- consultation of the different entities and bodies involved to define their different wishes and objectives;
- building a consistent and coherent accident scenario compatible with the selected exercise objectives and containing the necessary simulated data and events;
- establishing the full technical scenario, including the expected response schemes of the different actors, in the Main Event List;
- establishing an Exercise Convention to be distributed in advance to the participating actors which contains the scope of the exercise, the objectives of the emergency plan to be tested, the list of participating entities, the agreements made, and finally all deviations particular for the exercise with respect to the emergency plan;
- establishing a guide for the controllers, allowing them to keep the exercise on track with the objectives;
- establishing a list of evaluation criteria for the team of evaluators;
- holding the exercise;
- debriefing allowing to draw lessons to improve the exercise methodology and to define action lists (short term and long term) to improve the implementation of the emergency plan and, if necessary, to review the emergency plan.

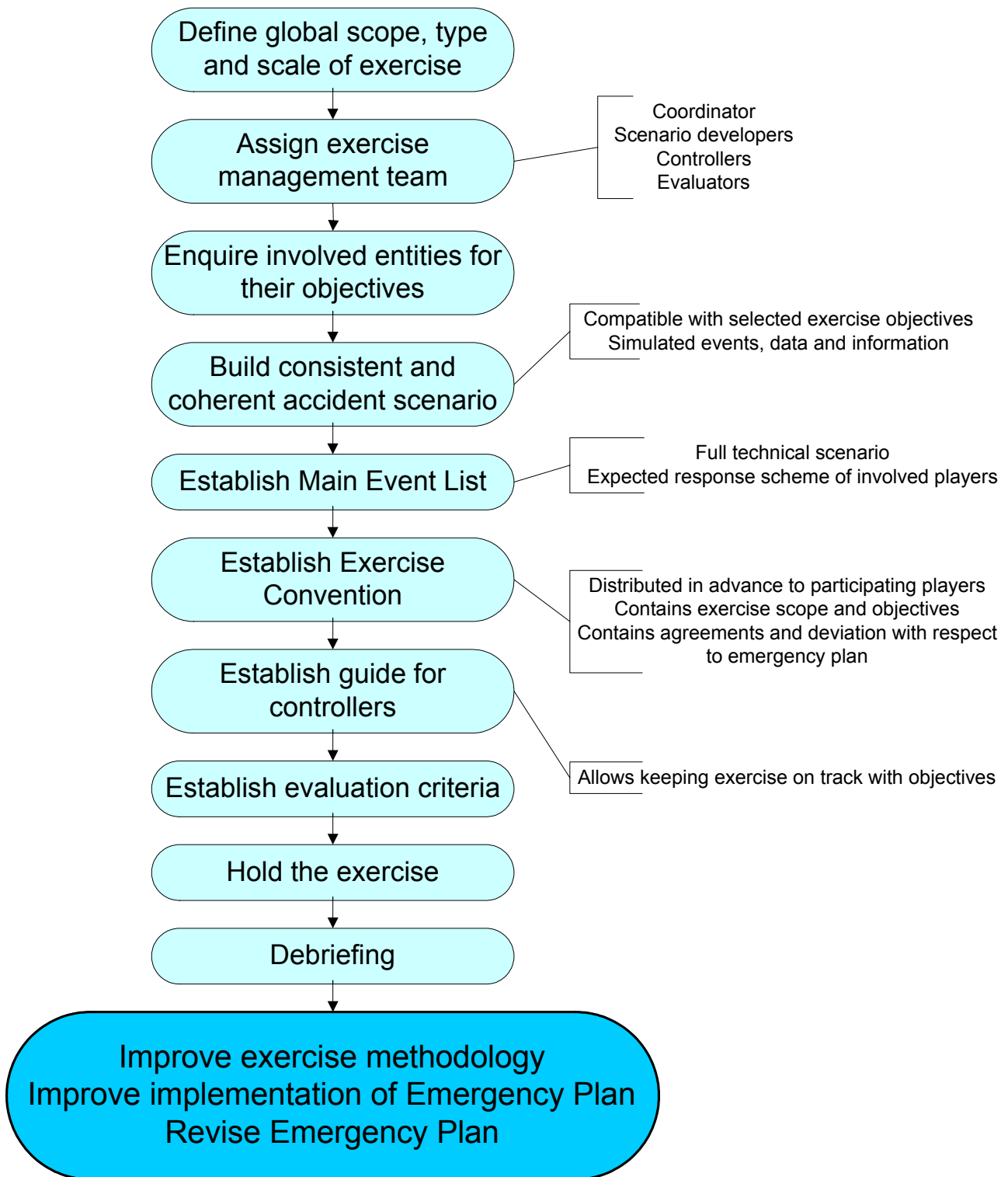
Attention has to be given that successive exercises cover a sufficient range of objectives and emergency conditions allowing testing the different aspects of the emergency plan.

## **Future work**

The different actors were very positive about this new approach to conduct and play exercises. As a consequence the methodology will be repeated and extended for forthcoming exercises in 2006.

## **Main contact person**

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The realisation of nuclear emergency management exercises for the main nuclear installations is a legal requirement of the Belgian nuclear emergency plan and helps to test and improve the overall organisation to protect the population and the environment in case of a radiological emergency. The elaboration of exercises encompasses the steps shown above.