

**RAPPORTEUR'S REPORT - BELGIUM**  
**ENSREG NATIONAL ACTION PLANS REVIEW WORKSHOP**

**1.0 ASSESSMENT OF THE STRUCTURE OF NATIONAL ACTION PLAN**

**1.1 Compliance of the national action plan with the ENSREG Action Plan:**

The Belgian Report followed the logic outlined in the ENSREG Action Plan, but did not follow closely the numbering of topics depicted in the “ENSREG compilation of recommendations” as suggested in the “National Action Plan (NAcP) Guidance as directed within the ENSREG Stress test Action Plan”. Instead the actions are categorized according to “family” (7 of them, e.g. external hazards), “sub-family” (30 of them, e.g. extreme weather) and “sub-sub-family” (60 in total, e.g. heavy rain). However, the structure of the report is clear and easy to follow.

The topics in the “ENSREG compilation of recommendations” and of the recommendations of the EO CNS Review meeting are addressed in the Datasheet “Topics 1 to 3” (48 items), without direct reference to the exact place in the sources. The comments and recommendations formulated by the Peer Review team in the Peer Review country report, which are primarily aimed at the licensees and addressed in the Datasheet “Additional topics” (55 such items). Here the exact references to the country peer review report are given.

The datasheet “Implementation of activities” is directly derived from the licensees’ action plans. It contains all the elementary actions (318 of them, though the ID numbers of the actions go up to 634). It provides the target plant, the topic category, the short description of the action, reference to the other two data sheets, the action status and the target date of completion.

**1.2 Adequacy of the information supplied, taking into account the guidance provided by ENSREG**

The NAcP of Belgium doesn’t follow the ENSREG national action plan guidance closely; however the required contents are covered in the report. The textual part of the NAcP consists of 3 effective chapters: Introduction, Stress test national action plan (covering topics 1 to 3), Convention on Nuclear Safety (covering topics 4 to 6), which are complemented with: References, Conclusion and Acronyms.

The Appendix depicts the stress test national action plan in three “Datasheets”, as outlined above. The first datasheet lists all the issues listed in the document “Compilation of Recommendations” for Topic 1 to 3 and also refers to the CNS Extraordinary meeting, where applicable. Whenever one or more elementary actions are related to the issue, the ID numbers of the elementary actions are given, corresponding to the 3<sup>rd</sup> Datasheet.

The second Datasheet, under the headline “Additional topics” lists the issues identified in the country peer review report and in the inspections carried out by the national Regulator. These issues provide the reference to the source of the issue and also refer to the IDs of elementary actions as listed in the 3<sup>rd</sup> Datasheet.

During the discussions three specific actions were discussed: the habitability of the Main Control Room during a severe accident (related to special exercise about malevolent human actions), and the drainage capacity of the sites relative to extreme precipitation (improvement from  $10^{-2}/y$  to at least  $10^{-3}/y$  precipitation frequency), and the capability of the new Emergency Control Centre at Tihange to handle multiunit accidents (specific organizational arrangements to handle different emergency categories).

## 2.0 ASSESSMENT OF THE CONTENT OF NATIONAL ACTION PLAN

### 2.1 How has the country addressed the recommendations of the ENSREG Action Plan?

The NAcP addresses the findings described the National stress test report of Belgium, 45 such issues are listed in the 2<sup>nd</sup> Datasheet with references to the subchapters of “7.2 Synthesis of the assessment ...” chapter of the national report.

The country has established appropriate actions addressing the 10 recommendations from the Belgium stress tests peer-review, which are covered in the second Datasheet.

The action plan has been elaborated by the licensee and approved by the regulator, though this approval doesn't result in any legal obligation for the licensee. However, the implementation of the actions is being carried out in a close and flexible co-operation between the regulator, its TSO and the licensee.

As mentioned earlier, aspects of the CNS are covered in the 1<sup>st</sup> Datasheet, without exact references. The aspects of the ENSREG compilation of recommendations and suggestions are explicitly listed without references to its numbering, but since the sequence follows strictly the source, the issues are easy to identify.

All the issues put forward in the above source documents are addressed in the NAcP.

### 2.2. Schedule of the implementation of the NAcP

The National Action Plan of Belgium provides the schedule of implementation of the elementary actions in the 3<sup>rd</sup> Datasheet: “Implementation of activities”. All planned actions will be implemented by the end of 2017.

Over all planned actions, some 88 them are scheduled for the end of 2012 (are assumed to be completed), a majority are planned for 2013, and only 26 of the 318 elementary activities are scheduled to be completed by the end of 2014. 3 actions (filtered venting for the reactor building at 4 units) are scheduled for the end of 2017, which are marked by “?” mark, signifying some uncertainty.

3 actions are marked as “On hold till results of discussion with Safety Authority”, without fixed target date, so far. The related analyses are not closed, so far.

7 actions are marked in the schedule column as “LTO” without explicit information on the schedule. As clarified during the discussions, these actions were initially planned for the Long Term Operation of the units Doel 1&2 and Tihange 1. The timeframe of these particular actions are defined as part of the LTO design upgrade programme.

The majority of the components “bunkered and hardened systems” for accident management is already completed, several of them before the stress test.

### 2.3 Transparency of the NAcP and of the process of the implementation of the tasks identified within it

The NAcP of Belgium is accessible through the WEB page of FANC, along with all documents related to the European stress test. The public is encouraged to interact with the FANC about the stress tests national action plan, and more generally for all nuclear safety related matters. Questions can be put to the authority through various channels and are answered within 14 days.

### 2.4 Commendable aspects (good practices, experiences, interesting approaches) and challenges

The Regulator and the nuclear operators elaborated a very detailed programme to address the national and international findings and recommendations in relation to the European stress test. The result of this work is the list of 318 elementary activities. It is a good practice that the majority of these actions are to be completed by the end of 2013 and only a handful of them remains for a longer schedule.

The protection measures against the reevaluated design basis flood for the Tihange site are an important element of the action plan.

The installation of a new on-site emergency center at Tihange NPP, which is going to be resistant at least to the reevaluated design basis flood and the design basis earthquake, is a commendable issue.

Belgium has extended the stress test exercise to other nuclear installations than NPP which is considered as good practice.

Regarding the filtered containment venting, the detailed design still needs to be defined. This could challenge the target date for implementation.

## 3.0 PEER-REVIEW CONCLUSIONS

Belgium gives comprehensive and understandable information in its National Action Plan (NAcP) related to further enhancing the safety of its nuclear power plants in the light of the Fukushima Dai-ichi accident. The NAcP is in compliance with the national stress tests, the results of the country

visit within the ENSREG Peer Review, the recommendations and suggestions of ENSREG and to those of the extraordinary meeting of CNS.

The NAcP doesn't closely follow the structure proposed by ENSREG, though it covers all the required sources and the issues identified.

The transparency policy expected by ENSREG is satisfied by publishing all stress test related information on the webpage of the regulatory body.

Although the action plan of Belgium is being carried out without legally binding ordinances from the national regulator, the actions are being completed mainly as scheduled.

The majority of planned actions are to be implemented by the end of 2013, only 3 of them are planned to 2017 and the deadline of a handful of actions is not fixed yet.

Belgium has extended the stress test exercise to other nuclear installations than nuclear power plants which is considered as a good practice.

Regarding the filtered containment venting, the detailed design still needs to be defined. This could challenge the target date for implementation.

Belgium has elaborated a very detailed action plan in order to further improve the safety of its nuclear power plants. The implementation of this plan is closely monitored by the regulatory body.