FR - France

RAPPORTEURS' REPORT - FRANCE
ENSREG NATIONAL ACTION PLANS 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 structure of the French National Action Plan mainly complies with the ENSREG Action Plan. Some of the subchapter titles differ from the wording used for the topics in the Compilation of recommendations and suggestions in the ENSREG-Report on the Peer review of stress tests performed on European nuclear power plants.

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

The information supplied is adequate in general.

2.0 ASSESSMENT OF THE CONTENT OF NATIONAL ACTION PLAN

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

France has defined tasks that either refer to safety analyses targeted to open issues or to corrective action that address these issues. The tasks are assigned to five thematic groups. France addresses the general recommendations from the Peer Review, those specifically addressed to France, and the CNS recommendations.

2.2. Schedule of the implementation of the NAcP

The schedule of actions to be performed by EDF covers the years 2012 to 2018. Taking into account that the concept of the hardened safety core will lead to substantial plant modifications and extensions, the time scale seems ambitious. Some of the tasks however, that are planned for the next PSR, will not be completed within this timeframe. This applies e.g. for extending the scope of probabilistic safety studies to external hazards. The regulator argues to have made a deliberate choice to prioritize concrete reinforcement measures (either fixed modifications of the plants, e.g. hardened safety core, or mobile means, e.g. the Nuclear Rapid Response Force).

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

The NAcP and the process of implementation of the tasks are transparent. The state of progress of each task is presented in the report. The report is available on the regulator‘s website. The regulator will inform twice a year on the progress of implementation. Within the stress test, representatives of the French High Committee for Transparency and Information on Nuclear Security, the local information committees and several foreign safety regulatory bodies were invited to attend the technical meetings as observers and to take part in the targeted inspections.

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

The approach of the hardened safety core is focused on beyond design basis events. Its objectives are prevention of an accident with fuel melt or limiting its progression, limiting large-scale radioactive releases and enabling the licensee to fulfil its emergency management duties. The safety core consists of an additional ultimate electricity generating set and a diverse emergency cool-down water supply for each reactor, new crisis management premises for each site, mobile devices and means of communication essential to emergency management, as well as technical and environmental instrumentation. They will be designed to withstand extreme natural hazards with references that are well beyond current design basis. The functional perimeter of the hardened safety core, as proposed by EDF, was presented to the Advisory Committee of Experts on 13 December 2012. The Advisory Committee of Experts recommended to complement the concept with additional mitigating functions.

Decisions on the replacement of filtered containment venting will be taken after studies by the licensee, that are to be completed by the end of 2013. The goal is mainly to improve filtration of iodine. This improvement should be considered with greater priority.

An offsite “rapid nuclear response force” is already operational and will be fully deployed for a four reactor site in 2014, with both mobile equipment and specialized crews which could intervene within 24 hours simultaneously on all units of an affected site.

France extended the stress test to all 150 nuclear installations (58 NPPs, NPPs under construction, fuel cycle facilities, research reactors, etc.). As a result of this extended scope new waste storage facilities will be built.

The social, organisational and human factors, which are key elements in safety, received particular attention during the stress tests performed in France. The regulator focuses on the renewal of the licensees’ workforce and skills as well as the organisation of subcontracting, particularly the role of subcontractors in crisis management.

3.0 PEER-REVIEW CONCLUSIONS

The structure of the French National Action Plan complies with the ENSREG Action Plan. The information supplied is adequate in general.
The tasks that France has defined address all recommendations, i.e. the general recommendations from the Peer Review, those specifically addressed to France, and the CNS recommendations. The measures defined are the basis for significant improvements of overall nuclear safety of French NPPs.

The NAcP and the process of implementation of the tasks are transparent. The state of progress of each task is presented in the report. The report is available on the regulator's website. The regulator will inform twice a year on the progress of implementation. Within the stress tests, representatives of the French High Committee for Transparency and Information on Nuclear Security, the local information committees and several foreign safety regulatory bodies were invited to attend the technical meetings as observers and to take part in the targeted inspections.

The approach of the hardened safety core is focused on beyond design basis events. Its objectives are prevention of an accident with fuel melt or limiting its progression, limiting large-scale radioactive releases and enabling the licensee to fulfill its emergency management duties. The safety core will include an additional ultimate electricity generating set for each reactor, a diverse emergency cool-down water supply for each reactor, new crisis management premises for each site, mobile devices and means of communication essential to emergency management, as well as technical and environmental instrumentation. They will be designed to withstand extreme natural hazards with references that are well beyond current design basis.

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The schedule of actions to be performed by the licensee covers the years 2012 to 2018. Taking into account that the concept of the hardened safety core will lead to substantial plant modifications and extensions, the time scale seems ambitious. Some of the tasks however, that are planned for the next Periodic Safety Review, will not be completed within this timeframe.

France extended the stress test to all of its 150 nuclear installations (58 NPPs, NPPs under construction, fuel cycle facilities, research reactors, etc.). As a result of this extended scope new waste storage facilities will be built. France also addresses social, organisa-

tional and human factors, which are key elements in safety. The regulator focuses on the renewal of the licensees' workforce and skills as well as the organisation of subcontracting, particularly the role of subcontractors in crisis management.

The tasks that France has defined allow significant improvements of overall nuclear safety of the French NPPs and they are mainly focused on preventive and mitigative accident management in case of extreme natural hazards. They will be designed with references that are well beyond current design basis.