

RAPPORTEURS' REPORT - GERMANY
ENSREG NATIONAL ACTION PLANS WORKSHOP (2015)

1.0 ASSESSMENT OF THE STRUCTURE OF NATIONAL ACTION PLAN

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

In setting up the action plan Germany combined nationally established regulatory procedures and actions plans of the competent Länder authorities with the proposed template for the NAcP and therefore did not precisely follow the Structure proposed by ENSREG for the National Action Plan. The German National Action Plan instead chose a format which described the post-Fukushima national safety review programme and its outputs, thus defining the action plan issues, and then demonstrated how this correlates with the National EU-Stress Test results and the ENSREG and CNS aspects. The findings from the follow-up plant visits were also addressed.

2015 update: The revised NAcP closely follows the approach of the previous report but properly including the new information gathered in Germany since April 2013; specifically, a new chapter 4 (“Action plan and WENRA reference levels”) has been incorporated to deal with the impact of the WENRA’s new reference levels into the German plan, which has been analyzed by BMUB and considered with no impact in the NAcP, as all the new requirements were previously considered in it. Attachment 1 contains a brief assessment of the German NAcP fulfillment of the ToR issued by ENSREG for this process.

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

As indicated above, Germany modified the structure proposed by the ENSREG guidance. However the tables give a clear description of how the ENSREG, CNS and National Review outputs have been addressed by the national safety review programme.

The tabular format enables extensive information to be presented for both the ENSREG and CNS guidance and for the power plant specific reviews and measures already completed, being undertaken or to be implemented.

2015 update: *No changes.*

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 National Action Plan for Germany uses two Tables in the report (6-1 and 6-2) to show how all of the activities are applied in a series of nationally identified actions, defined in Table 4-1. Table 4-1 and 4-2 together represent the complete action plan for the German NPPs. Table 4-2 identifies which actions are applied at each NPP, including shutdown NPP as well as operating plants.

Although Tables 6-1 and 6-2, and their cross references to table 4-1, are very detailed, some of the ENSREG recommendations are not easily traceable

The Reactor Safety Commission (RSK) produced a series of documents including its initial safety review, which was supplemented by two statements and further recommendations. In parallel, the technical support organization (GRS) to the Federal Ministry (BMU) also produced an Information Notice. The recommendations together with the information notice defined the National Action Plan with plant specific implementation. The German power plant operators organization (VGB) also undertook analysis to review the robustness of the NPPs.

2015 update: The new chapter 4 already mentioned in paragraph 1.1 has shifted in “one unit” the original tables’ numeration (then, table 4.1 is now table 5.1, etc.) but the scope of the tables continues being the same. As anticipated in the previous peer review process, the RSK has continued analyzing some pending matters and issuing the due recommendations.

2.2. Schedule of the implementation of the NAcP

Tables 4-1 and 4-2 which make up the action plan identify that many of activities were completed in 2012. Many more are to be completed in 2013, and a small number of items and studies will be completed at identified NPPs in 2014. Many activities are studies which may result in further improvements. These will be implemented within the normal regulatory oversight processes.

The report identifies a number of further studies being undertaken by RSK which have not yet concluded or are in preparation, including extreme weather conditions, seismic design, toxic gases and commercial airplane crash, some of

which are in scope of the Stress Test. Similarly the German Commission on Radiological Protection (SSK) is currently re-assessing the existing regulations for emergency preparedness, in a programme of work scheduled to complete in 2015. Finally, some answers to ENSREG recommendations (e.g. E-8, E-9, E-10, E-11 and E-19) although partially implemented before Fukushima, need further clarification of the schedule.

2015 update: *Besides the general comment relative to the tables' numeration, no substantial changes have been included in the scope foreseen for the Plan. Related to the actual implementation dates, most of the actions have been timely implemented; nevertheless, there are also a certain number of actions in two particular units whose implementation has been rescheduled for 2015. SSK continues working on the re-assessing of the emergency preparedness topic.*

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

The NAcP provides clear and comprehensive information on how the robustness of NPPs in Germany will further be reinforced in the aftermath of Fukushima according to the recommendations and suggestions of the European Stress Tests and the conclusions of the CNS process. The NAcP is accessible on the regulator's website.

2015 update: *No changes*

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

The clear programme of work at each NPP and the completion of the majority of the proposed activities in 2013 demonstrate a strong commitment to further reinforce the robustness of German NPPs in the light of the events at Fukushima. The Tables also demonstrate that many items of generic improvement identified in the light of the events at Fukushima, had already been undertaken at the German NPPs or were already underway.

The peer review discussions identified that there may be a need for further clarity on how the plans will be fully developed and reported when the relevant studies and consultations are complete as well as how their implementation will be reported in a consistent manner.

2015 update: *the revised NAcP remarks some aspects of the German actions that must be considered good practices:*

- *Existence of relevant emergency measures implemented before Fukushima (e.g. containment filtered venting, Primary and Secondary Feed and Bleed, Passive Autocatalytic Recombiners, Nitrogen Inertization for BWRs)*
- *Existence of bunkered emergency systems with 10 hours of “autarky time”.*
- *Implementation of Fukushima lessons learnt into the regulation (Safety requirements for NPPs, published November 2012)*

2.5 Technical basis related to main changes and relevant outcomes of studies and analyses

The most important changes in the revised NAcP are the incorporation in 2013 of two new RSK recommendations dealing with:

- Seismic resistance: whether the current PGA value in a nuclear site is less than 0.10 g, the robustness against a 0.10 g should be determined.
- Extreme weather conditions: It should be examined whether any vital safety functions may be impermissibly impaired by impacts due to extreme weather conditions as listed in the RSK Statement "Assessment of the coverage of extreme weather conditions by the existing design".

3.0 PEER-REVIEW CONCLUSIONS

Previous Germany's NAcP provided comprehensive information on how the robustness of NPPs was being reinforced in the aftermath of Fukushima and according to the recommendations and suggestions of the European Stress Tests and the conclusions of the CNS process. The Plan had identified that further work was still ongoing in some relevant technical areas. These have been generated by the BMUB and the Länder authorities and still under consultations of the Reactor Safety Commission (RSK). No schedule was identified..

After the revision of the NAcP, the following remarks may be added:

- ✓ Germany's revised NAcP provides comprehensive information on how the robustness of NPPs is being reinforced in the aftermath of Fukushima accident, according to the recommendations and suggestions of the European

Stress Tests and the conclusions of the CNS process. Nevertheless some of the activities included in the tables are not easy to fully understand.

- ✓ Related to the transparency of the process, the German report is accessible on the internet both English in and in German.
- ✓ Many measures had already been completed at the NPPs, either after the Chernobyl accident (for example filtered containment venting, Passive Auto-catalytic Recombiners, nitrogen containment inertization for BWRs or accident procedures such as primary and secondary feed and bleed), or in 2011/2012 immediately after the Fukushima accident, as for example mobile diesel generator equipment.
- ✓ Some of the remaining identified activities and studies have been already completed, with some left to be finished in 2015.
- ✓ On behalf of the BMUB the RSK has issued two new recommendations dealing with extreme external events. Additionally two evaluating activities are currently on-going at RSK and one at SSK, with no identified schedule.