

RAPPORTEURS' REPORT SPAIN
ENSREG NATIONAL ACTION PLANS REVIEW 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:

The National Action Plan of Spain is fully compliant with the ENSREG Action Plan. It covers in appropriate details and in clear structure the implementation status of the ENSREG recommendations.

The actions related to the ENSREG and the CNS recommendations are covered both in integrated tables and in separate manner, to enhance the usability of the document.

The “generic” ENSREG issues are covered as an additional topic, and are marked as “TG”.

Update 2015: *no changes.*

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

Spain has followed the ENSREG guidance quite closely in its NAcP. The proposed outline was adopted by providing the chapters “Introduction” and “Overview” and by separating the third chapter of their NAcP “Content” into subchapters describing Topic 1-3 (Part I), Topics 4-6 (Part II), additional topics (Part III) and implementation (Part IV). Apart from the Part II section, these sections are quite compact, referring to the attachments concerning the detailed information. However, this approach doesn't hinder the usability of the document.

The four attachments provide detailed tables of actions and issues arising from

- 1) requirements of the National Regulator (CSN),
- 2) recommendations and suggestions of the ENSREG peer reviews,
- 3) ENSREG generic recommendations and suggestions, and
- 4) CNS 2nd EOM commitments and recommendations.

2015 update: *The action lists in appendices 1-3 have been updated with a column showing the present status of all actions and analyses, but no new actions have been added.*

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 Spanish Regulator CSN issued Complementary Technical Instructions (ITCs) – legally binding orders – to each licensee as conclusions of the stress test process, identifying several requirements which were separated into generic requirements and plant specific requirements. The details of the ITCs are given in Attachment 1 of the NAcP.

The CSN divided its generic and plant specific requirements into three categories: general aspects, additional analyses and implementation measures (marked with codes G, A, and I, respectively).

All aspects from the “national action plan table 2012-10-16” from the NAcP guidance document, compiling the ENSREG and CNS recommendations and suggestions, have been covered. The aspects from the ENSREG compilation of recommendations and suggestions have been explicitly referenced to in the table of Attachment 3.

The section of “Part III, additional topics” covers such issues, which are not otherwise fully covered by the ENSREG and CNS recommendations, but are justifiable. CSN considered all relevant information which became available, e. g. the specific orders issued by the US NRC. CSN issued a specific ITC regarding the potential loss of large areas of a NPP, which issue is an interface between the safety and security boundary.

The regulator assists the licensees in carrying out the actions (e.g. on filtered venting of the containment).

Update 2015: *The Parts 1 through 3 are basically not changed. A new chapter 4 describes the progress and experiences gained during this process, including good practices and challenges. It also lists some of the analyses made since the last NAcP, and examples were provided during the workshop presentation.*

The regulator is closely overseeing the process of completion of the NACP actions.

2.2. Schedule of the implementation of the NAcP

The implementation of improvement measures identified at European and National level in the aftermath of Fukushima is scheduled in three terms: short (by the end of 2012), medium (by the end of 2014) and long (by the end of 2016).

The implementation of requirements formulated in the ITCs must be implemented at the latest by the end of 2016.

Large parts of the additional analyses are already finished in short term and just some will then be finished in the medium timeframe. After the completion of these analyses CSN will decide on the appropriateness of establishing further requirements. (NAcP, page 5, chapter 3.1.a).

The completion of the improvement measures is scheduled as follows:

- A minor part is already implemented. Most of them will be completed in the medium timeframe and some items are scheduled for long term.
- Some of the very important back fitting measures – like filtered venting, installation of PARs – are scheduled in the long term.

All operators but one intends to install filtered venting, for the last plant proposes that the filtering effect of its suppression pool is a sufficient alternative.

The developments in the actions of the licensees are required to be reported to CSN quarterly.

Update 2015: *The updated NAcP of Spain contains altogether 58 actions (including the 11 “improvements deriving from analyses”). No new measures have been added. Out of these 41 measures (71 %) are completed and 10 measures (17 %) are under implementation; 7 analyses (12 %) have been completed, but are still being analysed by CSN. Beside these, 4 generic requirements (G.2-5) that are CSN actions of a general nature have no finishing date or status given.*

The latest schedule of the new actions is still December 2016, except for the filtered venting for one unit, which is to be installed during refuelling outage in 2017. It is an important update that now all licensees have been requested to implement filtered venting at the plants.

Concerning the cases where the analysis results are still being reviewed by the regulator, the related modifications are being implemented – or even finished – by the licensees.

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

The NAcP informs comprehensively and well understandable how the NPPs in the country shall be improved in the aftermath of Fukushima according to the National assessments, the recommendations and suggestions of the European Stress Tests and the conclusions of the CNS process. The implementation schedules are clearly provided. The NAcP is accessible on the regulator’s website.

A good example for public communication and participation is, that at each site with nuclear power plants a “Local information Committee” is established to inform at least annually the local authorities, NGOs, and the general public about relevant aspects concerning the operation and any other topic which could be considered of interest in respect to the concerned nuclear installations.

Update 2015: *no changes.*

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

The NPPs conducted an “Individual plant examination for external events” (IPEEE) according to US NRCs methodology at the beginning of the 90’s. After Fukushima Daiichi it has resulted in a requirement to reach a seismic conservative value for PGA of 0.3 g for two independent shutdown paths and other components relevant for accident mitigation. The implementation of these improvements and the margin analysis up to this high level of acceleration are seen as good practices.

Building a new and robust alternative on-site emergency management center and establishing a nationwide emergency support center, with capacity to deliver human resources and equipment to any plant in less than 24 hours, are good practices.

Testing of Turbine Driven Water Pumps and containment isolation under Station Black Out and loss of DC power conditions during each refueling outage are commendable practices.

In the category of “Additional topics” the coverage of the problem of losing large areas at a NPP is a commendable approach.

The fast schedule of additional analysis and the arrangements to keep track of the progress of the licensees by revising their report every 6 months is a good practice. The revised NAcP will be published by the regulator annually.

The specified timeframe to implement all the improvement measures until the end of 2016 is ambitious and commendable.

A challenge for Spain is the appropriate and timely implementation, in its regulation and practices, of the outcomes of the WENRA on-going review of the harmonisation of the reference levels in the field of external hazards.

Update 2015: *The completion of the new Emergency Support Centre (ESC) that is able of supplying trained personnel and equipment to any Spanish nuclear power plant in less than 24 hours, is to be considered as a great and commendable achievement.*

Also, the verification and, where appropriate, reinforcement of the seismic resistance capacity of equipment of importance for accident management to a “seismic margin” of 0.3 g (PGA) is of high significance.

A new ITC was issued by CSN requiring the full completion of the applicable NAcP items by the Garoña NPP as a pre-requisite for restarting the plant.

The results of analyses of dam rupture scenarios are still under scrutiny by CSN due to some uncertainties.

The analyses for severe accidents during shut down phases are still on-going, due to scarcity of international experiences.

At some of the plants the almost full spent fuel ponds are hindering the specific re-distribution programme developed to improve the situation in case of loss of water from

the pool; but this programme needs the discharge of some elements to dry storages which are not currently available.

According to the present policy the NAcP will be updated every two years.

2.5 Technical basis related to main changes and relevant outcomes of studies and analysis (2015)

No major changes were made to the original list of actions, i.e. no measures were eliminated or significantly modified and no relevant additional measures are proposed.

Basically all the envisaged analyses are completed; the results of some are still under scrutiny of the CSN. Some highlights of the analysis results are as follows:

- The analyses of H₂ distribution in case of a severe accident, including the effects of PARs within the containment are completed. The regulatory review is pending. According to the analyses no dangerous hydrogen build-up is expected outside the containments. The implementation of equipment (PARs) for hydrogen management is expected to be completed according to schedule (2016).*
- A detailed review of the survivability of the crucial I&C components during several severe accident (SA) scenarios were analysed, showing that the majority of the equipment is expected to remain operable. For the remaining essential measurements either additional equipment is installed or the original equipment is replaced by more suitable items. In general, according to the analyses there is no need for new instrumentation to support the SA management.*
- The analyses for the management of large volumes of contaminated water resulting from severe accident scenarios are completed and the necessary modifications and installations were carried out by the licensees.*

3.0 PEER-REVIEW CONCLUSIONS

The NAcP informs comprehensively and in a well understandable way how the NPPs in Spain shall be improved in response to the lessons of the Fukushima accident, according to the National assessments, the recommendations and suggestions of the European Stress Tests and the conclusions of the CNS process and other sources.

The NAcP follows the structure proposed by ENSREG and covers all aspects specified in the ENSREG Action Plan. An important additional topic: potential loss of large areas at a NPP – which is at the interface between safety and security – also was addressed.

The NAcP – along with all EU stress test documents – is accessible on the regulator's website.

At each site with nuclear power plants a “Local information Committee” is established to inform at least annually the local authorities, NGOs, and the general public about relevant aspects concerning the operation and any other topic which could be considered of interest in respect to the nuclear installations.

The implementation of improvement measures is clearly scheduled in three steps: short (until end of 2012), medium (until end of 2014) and long (until end of 2016).

Some of the actual modifications to be implemented were at the review workshop of 2013 still depending on the results of on-going analyses. By the end of 2014 practically all the planned analyses have been completed by the licensees, but in many cases the review by CSN is not completed yet. In these cases where the analysis results are still being reviewed by the regulator, the related modifications are being implemented – or even finished – by the licensees.

The timeframe to implement all the improvement measures by the end of 2016 is ambitious and commendable. Nevertheless some measures scheduled for long term are crucial ones, like filtered venting and installation of PARs. The installation of filtered venting at one plant, where it was not previously requested, is scheduled to the 2017 refuelling outage.

Several commendable aspects could be identified in the NAcP of Spain, such as the issuance of specific Complementary Technical Instructions (ITCs) by the regulator, the maintenance of close co-operation between the regulator and the licensees to supervise the implementation of the action plan, the seismic margin analysis for 0.3 g, remote access to radiation data (including personnel dosimetry data) by bodies of emergency response organization, and the construction of alternate on-site emergency centers and a nationwide emergency support center. By the 2015 review meeting this support center is fully set up and operational.

The significance of the periodic safety review (PSR) process – which is also a tool for periodic license renewal in Spain – is further enhanced with the inclusion of severe accident management in the review.

A new ITC was issued by CSN requiring the full completion of the applicable NAcP items by the Garoña NPP as a pre-requisite for the restart of the plant.

A challenge for Spain is the appropriate and timely implementation, in its regulation and practices, of the outcomes of the WENRA review of the reference levels in the field of external hazards.

Spain has prepared a convincing and effectively controlled action plan to establish a higher level of safety for its nuclear power plants in the light of the Fukushima lessons.

During the 2015 review workshop smooth progress of the completion of the action plan was demonstrated.

The demonstrated recent progresses establish a good basis for the full completion of the action plan according to schedule; however two major issues, namely the installation of hydrogen management components and filtered venting of the containments are still on-going.