

Statement

“Workshop on the results of the European stress tests to the Spanish Nuclear Power Plants“

Background

The European nuclear stress test could not and should not be a detailed assessment of all safety details of the nuclear installations in Europe. But nevertheless the stress test gave quite a comprehensive picture of nuclear safety within Europe.

The experts of the review teams visiting Spain came from: the European Commission, Germany, Lithuania, Slovakia, Switzerland, Ukraine and the United Kingdom.

The teams visited the NPPs in Almaraz in March and Trillo in September.

The results of the country visits and of the whole stress tests are documented in detail in reports, which have been published on the website of the European Nuclear Safety Regulators Group (ENSREG).

Scope

In the following I will give you a short summary of our review work in Spain.

The team believes that looking at people and organizations as part of the Stress Tests was an essential aspect of our work, as nuclear safety is not just about technology or applying technical or engineering standards. It is also crucially dependent on the people and organizations that handle and control the technology.

Results

Atmosphere

The review process and especially the site visits in Spain took place in an atmosphere of greatest openness and transparency. All the participants were willing to learn from each other and to give frank and open insights about their plants to the peer colleagues. No question – and we had hundreds of them - remained without a detailed reply. All doors, books and documents were open for us to see and we were able to look at anything we thought necessary to look at.

The people we met during our visits – the staff of the regulator, our colleagues of CSN and the staff of the licensees - showed great responsibility for nuclear safety, good judgment and a willingness to contribute further to improve nuclear safety.

National Report and National assessment

The Spanish National report, which is the basis document for the stress test, is well-structured and shows a strong regulatory engagement. CSN's evaluation has been systematic and demonstrates the regulator has taken a proactive approach to the stress tests work.

As a result of the assessments done by the licensees and CSN, significant safety improvements have been identified for extreme scenarios. These improvements are planned to be implemented in three steps, for completion before the end of the year 2016.

The review team considered the assigned time schedules as positive. However, we added a caveat, that the timescales seem challenging.

To be able to cope with the workload from these activities, the review team suggested that CSN's technical assessment resources may need to be reinforced.

Natural hazards

In Spain natural hazards as: earthquake, flooding and extreme weather conditions are assessed by specific analyses performed during the periodic safety reviews, and also through the different inspections carried out within the supervision and control processes carried out by CSN. This is an effective measure for continuous improvement in this topic.

The seismic and flooding assessments show significant margins beyond the design bases.

The analyses of flooding cover a wide range of phenomena such as the effects of intense local rainfall, overflowing of rivers, tsunamis, rising sea- or groundwater levels and rupture of dams.

Overall the review team considered that the prevention of natural hazards complies very well with European and international standards.

Loss of safety functions.

In respect of the second topic of the stress test, the loss of safety functions, the Spanish NPPs impressed the review team.

This topic is analyzed as part of Spanish periodic safety reviews. Improvements identified through this process were then established as conditions for license renewals. This has led to a number of significant improvements already implemented before the Fukushima accident.

As a reaction to Fukushima, the licensees and CSN carried out special inspections in respect to the following scenarios:

1. loss of off-site power:
what happens, if the plant is cut off from the national electricity grid-,
2. station black out:
what happens if the plant is cut off from the external electricity grid and, in addition, all the emergency diesels on the site have failed so that only the emergency batteries are available – and these batteries last for only a short time
3. loss of ultimate heat sink:
what happens, if there is no cooling water available to remove the decay heat.

As a result of these special inspections, further analyses and measures to improve the safety of the plants for these extreme scenarios have been requested by CSN.

The peer review team agrees with the requirements set by CSN and welcomes the further improvements in safety they bring.

Severe Accident Management

Possibly the most important topic of the stress test was severe accident management. Severe accidents – according to international definitions - are accidents that may challenge safety systems at a level much higher than expected. In particular, accidents involving melting of nuclear fuel are severe accidents.

And accident management is the taking of a set of actions:

1. To prevent the escalation of an event into a severe accident;
2. To mitigate the consequences of a severe accident;
3. To achieve a long term safe stable state.

The Spanish NPPs are well prepared to prevent severe accidents and to manage them. In the aftermath of Fukushima and during the stress test, a lot of special assessment work was done by the licensees and by CSN to further improve the severe accident management of Spanish NPPs.

The review team visiting in September was shown the impressive progress already made since the Fukushima accident in enhancing the capabilities to address severe accidents.

There however remains a significant amount of work left to do.

Achieving the ambitious timescales the licensees and CSN have set themselves could be a challenge.

Nevertheless the overall success of this work will depend on completing these improvements within reasonable timescales

Overall Review Conclusions

During the visits to Almaraz in March and Trillo in September, the review team could see that the licensees have a good, open and positive working relationship with the regulatory body and, in keeping with this, have agreed on safety enhancement programmes including the stress tests recommendations to a very ambitious timeframe. The review team recognises the important measures that have already been taken and supports the planned improvements foreseen.

Given the relative remoteness of most of the locations of Spanish NPPs, the talents and experience of the site's emergency teams and supporting technical staff will likely be key factors in successfully addressing a severe accident. The review team was impressed by the technical knowledge, judgement and commitment of the licensees' staff we met and I would like to stress the importance of continuing to maintain such high standards.

The schedule for the implementation of the planned improvements is considered appropriate, but highly demanding. In this context, it may prove difficult to finish all the planned modifications on time, taking into account the needs for design, procurement, implementation, testing and personnel training.

Final remark

I am hopeful that the spirit of the European nuclear stress tests, this openness, transparency and learning from each other and our shared commitment to high safety standards and to the continuous improvement of nuclear safety may all continue beyond the Stress Tests and become a model for future nuclear cooperation and collaboration in Europe.