

Stress tests

06 March 2012

1. When and why was it decided to introduce risk and safety assessments at nuclear power plants (NPPs) in the European Union?

The nuclear events in Japan prompted European decision-makers to verify that such an accident could never happen in Europe. On 15 March 2011, during an extraordinary meeting on the impact of the Japanese accident organised by the European Commission (EC), Energy Ministers, regulators, experts and industry representatives agreed on the introduction of risk and safety assessments (so-called "stress tests") at nuclear power plants (NPPs) in Europe.

2. What is the position of the nuclear industry and how has FORATOM been involved in the definition of the safety criteria?

The nuclear industry supports the initiative launched by the EC and approved by the European Council to introduce "stress tests" in order to reassess the safety of operating and under construction NPPs. ENISS¹ has been playing a key role in the definition of the assessments. ENISS, a specific organisation within FORATOM, has set up a special task force on STORE² to define the scope of the "stress tests". Its contribution has been endorsed by the ENEF³ Risk Working Group and sent to the EC and the European Nuclear Safety Regulators' Group (ENSREG)⁴. ENISS has also made comments on WENRA's first proposal about European "stress tests" at NPPs at the request of the aforementioned organisation.

3. What is the time frame for the assessments and who are the stakeholders involved?

On 25 May 2011, the EC and ENSREG defined "the scope and modalities of the stress tests to be carried out at all nuclear power plants (NPPs) in operation, under construction and planned in the European Union (EU) in light of the lessons learned from the accident in Japan" using all the expertise already available in particular WENRA⁵ and ENEF. The process started on 1 June 2011 and operators submitted a preliminary report to the national regulator by 15 August 2011. The national regulatory bodies consolidated national interim reports by 15 September 2011. On 24 November, the EC published a Communication to the European Council and the European Parliament on the interim reports and on 9 December 2011, it presented a progress report to the European Council, which assessed preliminary findings. The national regulatory bodies finalised their national report by 31 December 2011. The peer review of those reports will be completed by 25 April 2012 and the EC will submit a consolidated report to the European Council for the meeting scheduled on 28 & 29 June 2012. It is important to recall that the assessments are done on a voluntary basis and that all EU member states have agreed to carry them out.

4. What is the peer review process?

The peer review process consists in evaluations by experts in the nuclear field of the national reports. An ENSREG taskforce was created in order to organise them. The Joint Research Centre (JRC)⁶ will act as the Secretariat and the Rapporteur of the peer review process. The reviews are divided into two types: the topical reviews and the country-specific reviews. The topical review teams consist of experts from all the EU countries, the “neighbouring countries” (Russia, Switzerland and Ukraine) and the Commission. There are three teams that examine three topical areas: initiating events (earthquake, flood...), loss of safety functions (electrical supply, heat sink...), and severe accident management. The three topical teams will work in parallel, each team consisting of 23 members. The topical review will be conducted in two phases. After the desktop phase, the plenary meetings of the topical reviews will start on 6 February and last for 3 weeks. The topical review process is expected to deliver 3 draft topical reports (European level) and 17 draft country reports. The country-specific reviews will evaluate the national reports country by country. There are 6 country-specific review teams; each team consisting of 8 members: two permanent members (the Chairperson and the Rapporteur) and experts from the topical reviews). Each country-specific review team will spend four days in a country and one of those days will be devoted to the visit of a nuclear installation. The reviews are scheduled to last 8 to 9 weeks. The draft report is expected to be delivered to ENSREG on 25 April 2012.

5. Will neighbouring countries carry out the same tests?

The European Council has called on neighbouring countries to carry out similar tests and the Energy Commissioner, Günther Oettinger, invited mid-June neighbouring countries (Ukraine, Russia, Turkey, Croatia, Armenia, and Switzerland) to take part in the stress tests. Ukraine and Switzerland already participate actively in the “stress tests” process, while other countries have confirmed their commitment to take part in it.

6. What will happen if a plant doesn't pass the tests?

All NPPs comply with existing safety standards as defined by international legislation and can be considered as safe. It is up to the national regulatory bodies to decide whether a plant has passed the test or not. However, if a plant fails the tests, it will be required to be upgraded. The plant owner will decide whether it is economically viable to do so or whether it is preferable to shut it down.

7. Will man-made disasters (terrorist attacks, cyber-attacks, airplane crashes) be included in the tests?

The EC and ENSREG agreed that security-related threats such as terrorist attacks would be evaluated separately by the competent national authorities and that the results would not be made public for confidentiality reasons. The stress tests will be looking at the impact of natural disasters, for example floods and earthquakes and severe accidents. They will assess consequential loss of safety functions such as black-out and loss of cooling systems irrespective of the cause. Man-made accidents such as transport crashes are not part of the mandate of ENSREG and will be taken into account in a parallel process run under the auspices of the Council of the EU. A Council Ad-hoc Group on Nuclear Security was created and produced a progress report, which states that Member States are eager to strengthen relevant international regimes to improve nuclear security.

8. It is said that the stress tests' criteria are too weak, what is the view of the nuclear industry?

The definition of the "stress tests" includes very stringent criteria that reassess the safety margins of NPPs in light of the events which occurred at Fukushima and take into account events beyond the design basis such as the combination of the loss of power supply and of the heat sink, which has never been done before. The scope of the safety criteria covers a wide range of scenarios.

Glossary:

1. ENISS: the European Nuclear Installations Safety Standards (ENISS) group is a specific organization within FORATOM that brings together operators and licensees from the nuclear industry at European level.
2. STORE: Safety Terms Of Reference
3. ENEF: the European Nuclear Energy Forum gathers a broad range of stakeholders - the nuclear industry, public authorities, the financial community and various sections of civil society - in a debate on the future of nuclear energy in Europe.
4. ENSREG: European Nuclear Safety Regulators' Group represents the 27 independent national authorities responsible for nuclear safety in their country.
5. WENRA: the Western European Nuclear Regulators' Association is a network of Chief Regulators of EU countries with nuclear power plants and Switzerland as well as of other interested European countries which have been granted observer status.
6. JRC: The Joint Research Centre is the scientific and technical arm of the European Commission. It is providing the scientific advice and technical know-how to support a wide range of EU policies.