

Serial	Submission Details Time	Public Feedback on the EU Stress Test
		Please submit your suggestion here:
1	Tue, 01/03/2012 - 11:03	Participants/reviewers in the peer review are mainly staff members of national regulators, not technology holders, like vendors, nuclear utilities. Some concerns: How competent are the reviewers in the technical areas? They regulate these areas, as opposed to actually work on it. How independent are they, if they also work for the national regulators? The human aspect of the stress test might have not been considered. How NPPs can respond to a disaster if their own employees are coping with the possible loss of their homes, properties, families. How can NPPs secure the availability of emergency and shift personnel 24/7?
2	Tue, 01/03/2012 - 11:08	Ladies and Gentlemen Thank you for the join of citizens in matters relating to nuclear power. According to the German Cockpit Association is a Fly an airplane or a cargo plane with a total of 600 tons and 200 tons of fuel to a reactor possible. Specifically, an accuracy of 5 meters is normal and a speed of 700 Km at impact on the building. How should the reactor walls, which in Europe are often less than 1 meter ("Mühle Berg" in Switzerland with 0.15 meters) to withstand such an impact? Why is this issue with a cargo plane crashes in lead no charge on the stress tests?
3	Fri, 01/06/2012 - 00:24	Please provide me with the details and criteria of how the individuals undertaking the Peer Review process of the National Stress Tests Reports.
4	Mon, 01/09/2012 - 16:24	Why are gone when the EU Stresstets the plane crashes as well as accident and terrorism forgotten. All the works before 2003 are still with a calculation of a 707 with 60 tons and calculated. A new A380 has 600 tons of cargo weight of 200 tons of kerosen.
5	Wed, 01/11/2012 - 10:07	Why are gone when the EU Stresstets the plane crashes as well as accident and terrorism forgotten. All the works before 2003 are still with a calculation of a 707 with 60 tons and calculated. A new A380 has 600 tons of cargo weight of 200 tons of kerosen.
6	Wed, 01/11/2012 - 10:09	Shortly after the Fukushima accident occurred rumours were spread that one of the reasons that the accident could have occurred and could have developed into such a disaster was that the Japanese authorities were negligent in regulating and enforcing improvements at the Fukushima. A Japanese official was blamed for spreading this unwelcome information. Recently these rumours have officially been confirmed by the Japanese government. As I understand from the newspapers, this will result in improvements in the organisation and procedures related to licensing and compliance in Japan. So not only the NPP's should be subject to a stresstest but the authorities should be examined as well.  It might well be that these proposed improvements are applicable to European Countries as well.  Looking at the Stresstestreports and Countryreports I come to the conclusion that in these reporst no attention is paid to the above mentioned factor that contributed to the cause and impact of the Japanese disaster.  I suggest that ENSREG will develop and execute a stresstest for authorities in line with ongoing activities related to the stresstests of the NPP's.
7	Wed, 01/11/2012 - 15:46	This exercise was a complete waste of time, money and effort. Time, money and effort that could have been better spent on real Nuclear Safety issues.
8	Wed, 01/11/2012 - 16:10	

Im Hinblick auf den Stresstest zum Betrieb der fünf schweizerischen AKW (und natürlich auch der übrigen europäischen Anlagen) vermisse ich die Behandlung der folgenden Gefährdungsbilder:

- Fahrlässigkeit des Personals
- Irrtum des Personals
- Sabotage durch Personal
- Kamikaze-Handlung des Personals
- Kamikaze-Handlung eingedrungener Personen
- Flugzeugabsturz.

Warum fehlen diese Gefährdungsbilder und wie will man ihnen begegnen?

10 Sat, 01/14/2012 - 14:29

As the stress tests were carried out by site licensees rather than by independent experts, they do not inspire confidence in their objectivity. Hinkley Point has two decommissioning, defueled Magnox reactors and two operational AGR reactors whose safe lifecycle is long past. In 2006 vents were installed into the roofs of the Magnox reactors which resulted in an exponential increase in peri-natal mortality across the county of Somerset. We are also seeing increases in all the known decommissioning illnesses with increases in skin, liver and lung cancers, excess cardiovascular illnesses and sudden deaths, plus central nervous system fatalities.

The AGR reactors are at risk of meltdown due to cracked and crumbling graphite bricks and failures in boiler tube welds. The operators have recently spent £35million installing experimental articulated control rods in an attempt to further extend this most profitable part of any reactor's lifetime.

Any unbiased stress assessment would insist on the immediate re-sealing of the Magnox reactors and the permanent shutting down of the two AGRs.

As UK regulators have indicated they propose to take no action, we are in precisely the same position as the Japanese people before the Fukushima catastrophe. The attitude of the nuclear industry and governments worldwide is to ignore all the signs of impending accidents and then wring their hands every time it happens. If there is any compensation for victims, it is paid for by taxpayers, not by the nuclear industry.

11 Sun, 01/15/2012 - 18:09

The comprehensive risk and safety assessment do not include security. However security, especially cyber security and information security does directly influences safety.

I suggest that the EU-stress tests be held every year and that they include a rigorous cyber security test.

This test should NOT be on the basis of an ISO27001 risk analysis, nor should they be done on the basis of a standard penetration test.

The best solution would be a industry-standard red team test, one that is designed on attacking ICS systems. The test could be held under controlled conditions on a test environment that was an exact copy of the plant (Cyber-TEC initiative;Siemens; Idaho Nat. labs) or with proper safeguard on the real sytem.

The safety risk that originates from cyber vulnerabilities is expectedly far greater than all first degrre safety risks combined.

I suggest someone involved in the stress test design teams contacts Idaho Nat. Labs (Homeland Security U.S), or a knowledgeable national institution.

Further more I suggest that someone instructs the Dutch National Regulator that they are responsible to publish an contact point where the public can ask for an EU invitation for the public engagement meetings. I would have liked to come the the meetings(s), but no-one with the Dutch regulator seems to be responsible for providing the personal invitations for the public engagement meetings, as mentioned on your website:<http://ensreg.eu/EU-Stress-Tests/Public-engagement>.

12 Mon, 01/16/2012 - 22:50

Question No.1

Are the emergency diesel generators of the remaining German NPPs (Brokdorf, Emsland, Grafenrheinfeld, Grohnde, Gundremmingen B/C, Isar 2, Neckarwestheim II, Philippsburg 2) protected against tornado and - if yes - against which tornado forces on the Fujita scale?

Question No.2

Do the remaining German NPPs have a divers ultimate heat sink for emergency cooling in addition to the operational water intake from the river?

Question No.3

Why do the remaining German NPPs need less provisions for emergency power in comparison to the French NPPs which are equipped with an additional gas turbine and are requested to provide an additional emergency diesel (Diesel d' ultime secours) and more battery power?

13 Tue, 01/17/2012 - 09:42

Question No.4

Do the German PWRs with the Spent Fuel Pool(SPF) inside the containment have an independent and diverse cooling system for the SPF in case the emergency cooling system for the reactor fails?

Question No.5

If an accidental dry-out of the Spent Fuel Pool in a German PWR leads to a zircon-steam reaction, are the installed hydrogen recombiners capable to cope with the sudden increase of hydrogen and keep the hydrogen concentration inside the containment below limits?

Question No.6

Why does Germany not need a national emergency intervention team like the one proposed for France by EDF and ASN called FARN (=force d'acron rapide nucléaire), which is trained and equipped to take over the emergency measurements on site within 24 hours in case of a severe accident?

14 Tue, 01/17/2012 - 10:07

Ref. Romanian national stress test report:

- the report clearly mentions in chapter 6.1.1,end of paragraph 2,that "Off-site emergency response is under the responsibility of the local, county and national authorities." Thus, in case of a nuclear disaster moving beyond the fence of Cernavoda power plant,Nuclearelectrica,the operator, will not be held responsible;
- chapter 6.3.3., paragraph 4, admits as one of the venting strategies, in case of containment overpressure, is using the non-filtered vent paths(releasing radioactive gas in the atmosphere);
- airplane crash was merely mentioned, only as addressed by a broader scope security system, without any details;
- while addressing the meteorologic fenomena,the report didn't take into consideration the prospects of climate change and extreme weather.Tornadoes,for example, have only appeared in Romania 10 years ago,and even though they happen very seldom and at low scales,they could be a serious threat in the near future. The report didn't consider tornadoes of larger scale (F3 - F5) for Cernavoda;
- military/terrorist attacks were left out of the report;
- general public was refused access to licensee's final report,ready by October 31st. I've formally asked the regulator for it - a couple of days after they've received the report from the operator,of course - but they (also formally) refused to provide it. Besides the lack of transparency,this proves that the system is biased,as the regulator is not independent. Please make sure that these points will be addressed during next safety assessments.

15 Tue, 01/17/2012 - 16:01

in Bodennähe können Verkehrsflugzeuge maximal zwischen 600 und 700 km/h schnell fliegen, da der Luftwiderstand hier groß ist. Über die Genauigkeit lässt sich schwer pauschal eine Aussage treffen, da dies von den örtlichen Gegebenheiten abhängt. Es können bspw. Reflektionen an Bergen stattfinden, die die Genauigkeit reduzieren.

Ob man wirklich auf 20 m genau navigieren muss ist aber die Frage, denn Flugzeuge wie der A380 haben ja bereits knapp 80 m Spannweite. Auch die Nebengebäude, die wichtige Teile bspw. Kühlpumpen oder Notstromaggregate enthalten können, Leitungen oder Kabel die auf dem Gelände verlegt sind, könnten bei einem Treffer schwer beschädigt werden, so dass das Gebiet, bei dem ein direkter Treffer als gefährlich betrachtet werden muss, wohl eher größer sein dürfte als 20 m. Entzündet sich das Kerosin (bis zu 200 t), welches sich beim Aufprall dann auch noch über eine größere Fläche verteilen dürfte, erhalten Sie einen Hitzeherd dem Beton ebenfalls schwerlich standhalten kann. Beton reißt, bzw. platzt bei großer Hitze.

Um auf Ihre Ursprungsfrage zu kommen: Per Hand halte ich es für durchaus ohne weiteres machbar ein AKW auch bei hoher Geschwindigkeit zu treffen, allerdings dürfte ein AKW einem A380 mit 560 t Gewicht wohl auch bei 250 km/h kaum standhalten können.

16 Wed, 01/18/2012 - 08:15

Question No.7

Why do the remaining German NPPs not need an emergency primary circuit depressurization system using a large independent and diverse blow-down valve to avoid failure on the high pressure path in case of a severe accident?

Question No.8

Why are the remaining German NPPs not improved by the installation of an integral "hard core" of equipment, technical installations and organisational measures including a special well-trained on-site severe accident team for immediate and adequate response to the evolution of a severe accident on site comparable to the French "noyau dur"?

Question No.9

Why does Germany not make adequate preparations for evacuations in case of an accident with radioactive release including immediate availability of potassium iodide pills and adequate evacuation training of the population organized by a large number of trained evacuation guides?

17 Wed, 01/18/2012 - 09:16

Stress Test – Cernavoda NPP, Romania (1)

At Fukushima, earthquakes and tsunamis were part of the design basis accident scenario, but their magnitude and amplitude were lower; a probability calculation must have ruled out events as those that took place in 2011, as remote and acceptable risk, so that safety measures were not adjusted, even when meteorological evidence from recent times indicated otherwise. The stress test report for the Cernavoda NPP does not indicate that probability calculations are being adjusted.

The NPP operator and the national regulator, while being the best qualified to run the safety checks, did not employ an independent review team, at least for parts of the analysis that wouldn't affect security and proprietary rights. It isn't clear from the stress report how thorough the national regulator's checks and inspections have been. There is no indication that the geology of the site has been verified (having in mind that the Cernavoda NPP site was chosen and construction began in communist times, while the area presents tectonic faults and it is affected by Vrancea region earthquakes). Not more than 20 years ago climatologists would have said there could be no tornadoes in Romania. It would have actually meant that the probability of having them is extremely low, not impossible. Tornadoes occur now, with unpredictable frequency and intensity.

18 Wed, 01/18/2012 - 14:01

Stress Test – Cernavoda NPP, Romania (2)

Moreover, for both earthquakes and extreme wind the maximum events taken into account in plant design have a return period of 1,000 years. There is no assessment of aircraft crash scenarios. There is no indication that the main control room has been upgraded with best available technology. Instead, the stress report focuses on what the existing safety systems can actually offer, while adding some mobile diesel generators and fire trucks.

19 Wed, 01/18/2012 - 14:03

- 20 Wed, 01/18/2012 - 21:42  
Fukushima is a symptom of a not functioning Regulatory Body, and Inspection. Everybody in Japanese inspections were knowing that earthquakes and tsunami's of that order could happen.  
The European Stresstest of nuclear power plants is in my opinion the treatment of symptoms and not the cause. It should be much more fruitfull to excecute a stresstest on the EU-Regulatory Bodies and all international organisations with the intention to promote safety in other countries. eg IAEA, CNS, IRRT, OSART, WANO etc. etc.  
Stresstest on nuclear power plants are symptom-based actions and are not coping with the cause of the accident.
- 21 Wed, 01/18/2012 - 22:08  
22 Wed, 01/18/2012 - 22:11  
There should be an independent, utmost realistic and - according to the total of experience made so far with nuclear power - adjusted estimation of the profit and the costs of every single reactor, including those costs carried by the state or the province for security etc., the costs of maintenance, the costs to be expected for (temporary) storage of nuclear waste and the demounting of a mill ... etc. etc.  
Let us have a referendum with regard to nuclear power!  
What is the validity time limit of the assessments?  
Who will take responsibility and pay for all costs occur of the acident if that happen within the validity time limit?
- 23 Thu, 01/19/2012 - 05:32  
24 Thu, 01/19/2012 - 05:37  
25 Thu, 01/19/2012 - 07:55  
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Every nuclear powerplant should be checked out by a completely independent control organism, who should have acces to all powerplant data and facilities.  
- Why did the stress test not cover evacuation plans for the area surrounding a nuclear power plant, when most plants are located within 30km of towns with 100,000 or more people?
- 26 Thu, 01/19/2012 - 15:09  
- Why were cumulative emergencies and multiple failures exempt from cons  
  
- Were the operators or the nuclear industry in general involved in the process of defining the criteria of the stress test?  
  
- How will the EU control whether the operator has remedied any defects and deficiencies? Will there be independent inspectors?
- 27 Thu, 01/19/2012 - 15:09  
We object to the term "test" in the phrase Stress-test. It is primarily a computer modelling of the expected effects of external natural or man-made forces on nuclear installations. Calculated effects have no other status than an educated guess. That is not a test.  
We propose to the EC to emphasize to the general public, that the accuracy of the calculated effects from the chain of events in natural or man-caused disasters cannot be validated; their significance or uncertainty for real life situations cannot be quantified.  
We object to the term "Probabilistic" in the phrase Probabilistic Safety Assessment. We also object against its conclusion for a probability value for the risk of reactor damage. There is no scientific reason to assume a probabilistic theory that describes the frequency and impact of forces from natural or human origin. Thus, there is no probabilistic function that allows a future prediction of these parameters. A Probabilistic Safety Assessment suggests more than can be substantiated and we propose to rename it to Frequency and Impact Propagation Procedure.  
We propose that the risk number derived from the models can never be smaller than the risk for one of the contributing factors in the chain of events under consideration. The EC-owned HFR at the Petten site is situated a few kilometres from a weakened North-Sea dike that has a risk for collapsing of 10-2 yr-1. A risk for damage to the HFR smaller than 10-2 yr-1 is unjustified.
- 28 Thu, 01/19/2012 - 23:32

European nuclear reactors have a spent fuel pool capacity of several core loads. Most of the pools are filled to capacity. The radionuclide inventory of the pools consequently is comparable to that of the reactor core. None of the reactors provide the same defence in depth for spent fuel pools as for nuclear cores, while the effects for man and the environment in case of natural or man-made disasters are similar. We propose to the EC, that it gives the highest priority to the installation of alternative medium-term spent fuel storage facilities with the highest defence characteristics. The inventory of spent fuel pools should be low or zero.

We ask the EC to investigate whether the spent fuel pools of European nuclear reactors are constructed above ground level. Due to the earthquake, Unit 4 reactor building of the Fukushima NPP is seriously weakened. It carries the spent fuel pool a dozen meters above ground level. The pool will crash when the building collapses due to an aftershock or typhoon. When European reactors also have filled spent fuel pools positioned above ground level, the EC should take measures.

We ask the EC to take measures to guarantee that nuclear regulators can operate independent of industry and nuclear economic policies of Member State governments. The Dutch national regulator is a part of and accountable to the Dutch Ministry of Economic Affairs. Both the Ministry and the Minister are explicit promoters of the use of nuclear power. This situation jeopardizes an independent operation of the regulator.

1. The content of the National Reports follows the same headlines, nonetheless different issues are described & analyzed. All reports cover earthquake and flood. Many consider extreme weather conditions. Only few reports cover other extreme external impacts as plane-crash, explosions, lightning etc...

Various other issues are concerned in the National reports: emergency measures as shelters for the operating teams or for the emergency crew. Moreover also indirect effects of a natural disaster such as fire in the reactor & safety buildings due to an earthquake (France) – Such indirect effects cannot be excluded also in other plants, because not all electrical equipment is seismically qualified and if the non qualified equipment has a short a fire could break out .

Comparable problems could be initiated by a flood event, even if the plant is designed for this event; groundwater level could elevate and can prevent essential equipment as electrical pumps in the basement to work.

Conclusion: In the framework of the peer review all different safety relevant issues considered in one National report should be collected; Analyze if these could be relevant also for other plants, such a procedure helps to miss important issues. It is clear that detailed investigations must be ordered by the national authorities.

29 Thu, 01/19/2012 - 23:44

30 Fri, 01/20/2012 - 11:09

2. Design basis in many European countries is from decades ago. Not all operators have reassessed the site hazards in compliance with state of the methodologies. An overview of some of the National Reports allows to conclude that the chosen indicators for the site hazards as earthquake and flood are very different : the Design Base Earthquake (safe shutdown – seismic level 2) is determined from the maximum intensity of the quake with a recurrence period between 500 years (France) to 100.000 years (Germany). Besides the recurrence period also the region around the NPP in which the earthquake focuses are considered – differ in the dimension. □

These differences hardly allows to compare the design basis in different countries. The safety margins assessment is based on the design and it is not easy to comprehend the results.

Conclusion: In this context more harmonization would be good in order to give the public a better picture of the robustness of the European NPPs.

31 Fri, 01/20/2012 - 11:10

3. External impacts and containment stability are an important safety issue of all NPPs. The issue is important because an accident with a containment failure (or a bypass) lead to radioactive emissions in the atmosphere – such emissions can affect not only the immediate vicinity of the reactor, but also regions 100 km away. Therefore the peer review should focus on measures to prevent such emissions, since in Europe large population is living in regions with nuclear reactors. Even if the likelihood for such an accident is small, it can not be excluded. The stress tests is to evaluate the “unthinkable” and find out which improvements, prevention and mitigation measures can be done. Therefore it is not justified to exclude for example the 95th percentile from the analysis.

32 Fri, 01/20/2012 - 11:11

Conclusion: Take the unthinkable into account and develop adequate emergency measures for the protection of the population in the densely populated regions of Europe.

#### Input to Peer Review

##### General problems:

- Many national reports do not cite references in particular we miss often the references for the reassessment of site specific parameters and for the safety margins assessment. (engineering judgment alone is not enough)
- National Reports do not attempt to give a comprehensive picture of what the new lessons and methods are or which areas were looked into which was not assessed before stress tests? This should be a result of the stress tests interested people should be able to 1. See what was included what was not included before and 2. Be able to compare safety levels of the EU nuclear power plants
- IAEA recommendations cannot serve as guidelines in assessing the safety levels during stress tests – state-of-the-art should be the guiding principle more precisely: we think the site specific external impacts should be assessed with state of the art methodology and to enhance the robustness of the plant(s) the best available equipment and technology (BAT) should be used.
- Comments by the public made via this online consultation tool should be made public

33 Fri, 01/20/2012 - 13:45

To make the Peer Review useful, we recommend to:

- Make the criteria applied public
  - Make the safety margins comparable
  - Make the results understandable instead of hiding behind PSA data and similar models. People want to know concrete things, e.g. the strongest possible flood and can and how long can the NPP where I live withstand the impacts safely? How safe is the NPP in my neighbouring country? Resistant against which impacts and were really the strongest earthquakes included? How was it calculated, when did it occur?
- Emergency
- Easily understandable information on emergency situation, how they can impact the people living in the surrounding of NPP. How and under which circumstances will be made sure that their health is not compromised under any accident scenarios? The Peer Review should make sure, that all European citizens enjoy the same level of information and of protection.

34 Fri, 01/20/2012 - 13:46

#### Terrorist acts

- Similar to the emergency issue, also terrorist acts should be treated in some unified and standardized manner, to make comparison possible.

#### Safety assessment methodology

- One of the lessons learnt: the probabilistic approach did not work out, the impossible does happen. We would think it useful if the stress test result would point out in a comprehensive and understandable manner how the so far unthinkable was considered in the stress tests.

In general we recommend to make inputs and results visible and understandable. The way the national reports are set up makes it very hard for citizens but also the interested public to see how the new challenges as lessons from Fukushima were applied, or: what is different now from before Fukushima?

35 Fri, 01/20/2012 - 13:46

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The stress tests should clarify if mobile equipment like mobile pumps of the fire brigade may be credited in the deterministic safety analysis as a means to reach acceptance criteria.

See IAEA safety glossary WENRA reference levels issue E article 8.3; issue G article 2.2: "The availability or unavailability status of systems serving the safety functions to be considered in deterministic safety analysis;"

INSAG 10 article 43 "Accident management may not be used to excuse design deficiencies at prior levels".

The Swiss plant Muehleberg credits mobile pumps in a design basis flood to provide cooling water for heat removal and more importantly diesel generator cooling.

Despite the will of the European Commission and of the national regulators the awareness of the stress test process remained low in the public.

Even though the stress test process was a strong initiative it was perceived as having a low awareness in the public consciousness across the EU. Keeping the process in the public eye is important. This will encourage wider input from stakeholders and increasing understanding of the issues. It is also the case that the investigations into the Fukushima accident demonstrated an unacceptable degree of passivity by Japanese regulators on safety recommendations made prior to the disaster. It is essential that civil society has trust in European regulatory bodies and this can partly be achieved by being active in public engagement and transparency.

36 Fri, 01/20/2012 - 14:00

37 Fri, 01/20/2012 - 15:02

38 Fri, 01/20/2012 - 15:53

Layperson confidence in national reports

A reading of the National Progress Reports showed a wide variation in content, length and depth of analysis. The final reports achieved a much greater consistency in coverage, demonstrating the value of an iterative process and its potential for raising the comprehensiveness of reporting. It would be helpful if ENSREG, as general background to the peer review process, prepared a detailed comparative analysis of the final national reports so that the layperson could see the response of each national regulator to the stress test specifications (ie. fallen short, met requirements or presented relevant material and analysis significantly in excess of requirements) and make up their mind regarding the credibility of each national process. One of the issues to emerge from Fukushima was lack of planning for events beyond the design capacity and an analysis of how operators and national regulators had interpreted and responded to the stress test specifications of 31st May 2011 could provide insights into national safety culture. It is also clear that, for the public, the consequent effects of evacuation and displacement are a major issue in the event of an accident and the adequacy of measures for detailed emergency planning zone are as important as other technical issues. It is therefore suggested that a review of the national emergency evacuation plans becomes part of the responsibilities of the peer review process.

39 Fri, 01/20/2012 - 15:53

Greater assurance on the independence of national regulatory bodies

One of the issues of general concern to the public expressed in the nuclear safety conference of 12th December was the question of trust – who regulates the regulators? It was asked whether a robust regulatory regime was in place in each member state and the degree to which this regime, in practice, could provide assurance of its independence towards public bodies, industries and NGO's. Although Articles 4 and 5 of the nuclear safety directive deal with the establishment and general structure of competent national regulatory authorities the directive specifically accepts that such authorities may have different approaches to organisation and practice. ENSREG publishes a list of national regulators, with their websites, but there is, at present, no way for the general public to make comparative assessments between their own national regulatory regime and those of other European countries. It is therefore suggested that, as part of the background to the peer review process, ENSREG commissions and publishes an independent comparative review of the structure, accountability, governance and management of all European national regulators. This is again an important element for the public in relation to building confidence on the way nuclear safety is managed at the national level.

40 Fri, 01/20/2012 - 15:54

Part 1/3

EUST. ENSI and EUST.KKM do not match any previous PSR or the HSK91 licence basis documentation. Instead ENSI and KKM are "resurrecting" so-called safety train 1. Whole buildings hosting the supposed safety equipment of train 1 are missing from the report. Examples: Pump House (water intake, sand screens, pumps, etc.), Machine House (diesel, pipes, etc.), Waste Treatment Building (ventilation paths, including CDS). Up to PSR2007 these buildings are all OBE classified only. The operations buildings (switchgear, batteries, MCR, etc.) is suddenly reported as DBE proof, contrary to any previous PSR or the HSK91. Latest PSR2007 building classification see p. 6-3, equipment classification and SSE availability see p. 3-8. Fragilities reported in EUST.KKM show a factor 3 to 5 increase. Examples: operations building EUST.KKM 0.28g vs. HSK91 p 6-17: 0.09g, reactor building EUST.KKM: 0.77g vs. PSR2002 p. 6-6: 0.15g (while noting onset of damage to reactor building/secondary containment 0.15m dome top).

If safety classification/earthquake qualification according to regulation standards is restored, collapse of the operations building with the MCR must be assumed. Qualified operating personnel must be assumed lost. Manual intervention credited in EUST.KKM and EUST. ENSI must be rejected for the time it takes to restore the crew. Replacement crew living nearby might also be affected by the earthquake.

41 Fri, 01/20/2012 - 16:29

Part 2/3

Flooding

As vaguely presented in EUST.KKM p. 70 "V.", deterministic safety analysis of the DBF.PMP has shown that AM with mobile fire pumps must be credited to reach acceptance criteria. The pumps are used to bypass a fine screen that is blocked by organic material transported in the flood. The pumps are used to cool the only credited AC diesel generator and switchgear inside SUSAN as well as providing the last remaining UHS for decay heat removal. This violates defence in depth INSAG 10, article 43 "Accident management may not be used to excuse design deficiencies at prior levels", the WENRA reference levels issue E, article 8.3 and issue G, article 2.2 as well as the very definition of the term Accident Management in the IAEA Safety Glossary 2007.

In HSK91 ENSI is claiming that major damage to [concrete] dams is only thinkable due to earthquakes [p. 2-4 quote:

"Massive Beschädigungen von Staumauern sind nur durch Erdbeben denkbar"]. At the same time, HSK91 is postulating dam break DBF scenarios only. However EUST. ENSI and EUST.KKM flood assessments are freely crediting safety features that failed earthquake requalification, notably safety train 1 equipment and buildings [PSR2007 p. 6-3/p. 3-8].

On the other hand, "DAM FAILURES RESULTING FROM CAUSES OTHER THAN HYDROLOGICAL AND SEISMIC" were never considered despite IAEA NS-G-3.5 article 9.28.

42 Fri, 01/20/2012 - 16:33

Part 3/3

Margins and Cliff Edges

In this discussion, earthquake qualification is ignored. The "feed and bleed" scenario mentioned will not work, because most notably the hilltop reservoir and water line from there, the cold condensate storage have all failed earthquake requalification. CDS credited for venting will be unavailable, as the waste treatment building is lost (see part 1). CDS venting will fail or lead into areas with probable ignition sources. H2 from CDS does mix with oxygen in the outer torus (not inerted) at the very foundation of the reactor building (-11m) and will form a deflagration/detonation "shape charge". Building damage should be examined. 48 tubes (0.5m) lead diagonally upwards to the inside of the reactor building, where the inner torus and (without exception!) all the primary cooling safety systems are located. Deflagration/detonation could eject water into this room causing damage.

Loss of Electrical Power and UHS

EUST.SPEC directs NPPs to consider "loss of safety function from any initiating event conceivable at the plant site". However EUST. ENSI and EUST.KKM perform "sunshine" assessments, postulating the loss of just these safety functions without consideration of PIE context. All other safety functions are simply considered available.

ENSI is not adhering to EUST.SPEC definition of the UHS as one "medium". Instead it is crediting each river inlet as a separate UHS. Consequently the EUST on UHS is lead ad absurdum.

43 Fri, 01/20/2012 - 16:45

Although at present a change in frequency and intensity of extreme weather events might not be statistically proven, common sense and the precautionary principle would require that possible changes due to climate change must be taken into account when testing the resilience of nuclear power plants against such events.

If it was not already part of the self-evaluations, then the peer review groups should explicitly ask for information on whether any evaluations by meteorologists were made regarding possible changes in extreme events and if so, what external events were considered and what structural, organizational, etc. changes have become necessary to cope with these.

A table in the final report by the peers on this issue (NPP, has a study been made? which events? which outcome?) would be highly appreciated.

44 Fri, 01/20/2012 - 19:22

The independence of NRA and TSO from operators and political influences is not addressed. Stress tests must address this problem beyond a mere look at the legal situation. Analysis of career paths of nuclear engineers, documentation of known or suspected political interference, e.g. in cases of dismissal of NRA heads, etc. are safety relevant. It should be in the interest of all concerned to achieve more independence for the above named organisations, and this would be a chance for international support.

Operators and NRAs are not a priori irresponsible and apt to underestimate risks. Frequently it is economic pressure that limits expenditures for safety, even against advice by nuclear engineers. A reasonable minimum ratio of expenditures for safety measures (personnel, inspections, components, etc.), possibly dependant on the age of the NPP, could be defined to characterise this aspect of safety culture in the plant.

If indeed the utilities have primary responsibility for nuclear safety, then likewise the utilities should have primary responsibility for liability. The utilities should, as part of the "stress tests", elaborate on their liability coverage to pay offsite damage costs resulting from accidents in the domain of the "stress tests" (that is, natural and man-made hazards resulting in long-term safety function losses to multiple facilities on a single site owing to a common-cause).

Some plants are known not to meet present day safety standards. Detailed assessments are not necessary. How will the peer review group deal with these?

45 Fri, 01/20/2012 - 23:46

Comment 1

If the non-nuclear-power Member States of ENSREG not just want to point at deficiencies of others, they should instead set an example by exposing their own nuclear installations (low & intermediate waste disposals, research reactors) to similar stress tests.

If this work cannot be carried out within the scheduled stress tests (why not?), a different process should be initiated by ENSREG.

Comment 2

The earthquake and tsunami on the eastern coast of Japan has damaged many industrial and especially hazardous chemical plants also. ENSREG should comment on that issue and encourage the EC to initiate similar stress tests for the European chemical industry.

Comment 3

The IAEA in its safety guidelines has recommended to estimate the earthquake hazard by state of the art methods, and expressively mentioned to use paleoseismology, geomorphology, active tectonics, by trenching and dating even the prehistoric activity of tectonic faults. This has rarely been done. After Fukushima such investigations are long time overdue and should be implemented by ENSREG.

46 Fri, 01/20/2012 - 23:54

While natural hazards, including extreme weather events, are addressed, no mention is made of climate change, an essential issue in defining the extremes of the weather. All meteorological assessments made in the course of the licensing procedures need to be reassessed in view of the changes brought about by past and future climate change. This could mean e.g. less availability of cooling water, more and higher floods, sea level rise, increased storm and tornado frequencies, etc.

The involvement of independent experts is at best marginal in the peer review teams. There are considerable conflicts of interest. These should at least be made transparent by publishing a list of contracts the peer review team members had with involved parties.

The stress tests are in the hands of the same players as nuclear safety was in the past. Considering the spirit of some of these players as characterised by the text in the Japanese CNS Report 2010 this does not inspire confidence in the procedure.: "Through measures undertaken to prevent abnormal events, to prevent progression of abnormal events into accidents and to mitigate the consequences of accidents it is possible to reduce the potential for the occurrence of a severe accident to the extent that its actual occurrence would be technologically inconceivable". Had the accident not occurred before the report was discussed in the CNS, how many members of the peer review groups would have nodded complaisant agreement as national delegates?

47 Fri, 01/20/2012 - 23:55

Full transparency of the process is not guaranteed. All documents referenced in the peer review and the national reports should be made public.

The studies must include spent fuel pool accidents. This is (paradoxically) particularly critical for plants with in-containment spent fuel pools because spent fuel accidents can produce far more hydrogen than a reactor accident, potentially overwhelming the hydrogen mitigation systems, producing containment failure as well as possibly a reactor accident.

How will peer review members deal with the problem of stemming from different countries with different safety standards at times contradicting each other.