

List of Question from Countries to Countries for the National Action Plans Workshop, April 2013

Final version: Thursday 21 March 2013 - 12:00					
Country asking the question	Country to which the question is addressed	Topic number (1-2-3)	Page number of NAcP	Text of question / comment	Answer
Public	France			No structural assessment for the site seismic loads is foreseen? Hence, no seismic strengthening of the existing bearing structures?	<p>The robustness to natural hazards is checked at each stage in the life of the nuclear installations (examination of the safety options, creation authorisation, commissioning authorisation, etc.) and re-examined systematically during the 10-year periodic safety reviews. During these periodic safety reviews, ASN specifically requested the changes to the safety requirements and new scientific knowledge in the field of this hazard and the paraseismic justification to be taken into account.</p> <p>It is important to note that the updating of the “Safe Shutdown Earthquake” SSE on the site is simply one aspect of the periodic safety reviews regarding the seismic field. The development of methods and computing resources used for paraseismic engineering has fine-tuned the evaluation of the seismic strength of buildings and equipment. Reinforcements may therefore be decided, not simply on the basis of a reassessment of the hazard, which constitutes input data for the calculation of structures and equipment, but also on the basis of developments in paraseismic engineering.</p> <p>For example, seismic reinforcements were implemented during the second and third ten-yearly outage inspections (VD2 and VD3) at Bugey, Fessenheim, Gravelines and Tricastin.</p>
Public	France			I am rather sceptical about the notion of "noyau dur" (hard core) promoted by ASN. I can imagine a bunker located a few hundred meter from the reactor but to be operational the various connections (pipes, cables to operate the various items etc) must also be "hardened" and I wonder how this can be done.	<p>The hardened safety core (HSC) is not limited to an off-set building, but relates to the whole of the safety functions required in these situations. The requirements on equipments structures and components of the HSC comprise reinforced requirements whatever is their localization.</p> <p>The functional perimeter of the hardened safety core (HSC), as proposed by EDF, was presented before the standing group of experts on December 13th, 2012. The standing group of experts indicated that this HSC proposed by EDF must be complemented with additional mitigating functions. The final list of hard core SSCs must thus be supplemented and can not yet be considered as finalized. ASN will issue a regulatory resolution to define more precisely the different SSC that will have to be included into the HSC and the corresponding requirements. This resolution should be published mid 2013. This definition is composed of several steps : definition of beyond design hazard for the hard core, definition of new safety missions for beyond design situations, allocation of these safety missions to SSC, design of these SSC with appropriate requirements, implementation. Setting up the complete list of SSC for each NPP is among the late steps of the design process and shall be available by mid 2014.</p> <p>Nonetheless major SSCs that represents the most important part of the safety core are already identified and in the process of implementation (new ultimate diesel generator and building, ultimate heat sink, new management centre for crisis management...).</p>
Public	France			What is the return period considered for the external initating events ?	<p>The natural hazards design has been developed adequately according to the French regulation, based on a deterministic approach. The return period considered for the external initiating events is based on the state of the art (most recent scientific knowledge).</p> <p>The safety objective of external flooding and earthquake is fixed at a return period of 10-4/year:</p> <ul style="list-style-type: none">- the design basis flood is defined considering statistical extrapolations limited to 10-3/y supplemented by a margin or a conventional combination to reach a return period of 10-4/y- the design basis earthquake is defined considering known historical earthquake, taking account of historical observations over a period of about 1,000 years. Significant margins are added to reach the safety objective of 10-4/y. <p>Concerning meteorological hazards, the technical background is derived from statistical data, past experience and national standards for the design of civil structures. The return period is defined in function of the state of the art of the different fields. Following Fukushima, further studies have been requested, concerning wind (direct and indirect effects), lightning and hail.</p>
Public	France			<p>Les systèmes passifs ne semblent pas avoir été assez pris en considération dans les possibilités de diversification des systèmes de sauvegarde pour parer à un scénario de type Fukushima.</p> <p>En fait ils remettraient en cause la conception des réacteurs PWR qui n'ont pas été étudiés suffisamment pour supporter des contraintes de type accident grave.</p>	<p>Some PWR safety systems are active and others are passive (for example, hydrogen recombiners). The passive systems, very as much as the active systems are conceived according to design requirements. The major difference between active systems and passive systems liability is that an active system needs an energy source to function. Nonetheless, in the event of accident, a passive system is as much sensitive as an active system but for different reasons. In the event of accident the active system will be sensitive to the loss in energy supply, a passive system will be sensitive to situations where design requiremets are not fulfilled. The safety of a system is thus not brought by its active or passive character but by its robustness, i.e. its capacity to answer an expected behaviour, including beyond its design requirements (importance of the use of margins, and linear behaviour beyond design). In some cases, for example operation in a degraded situations, an active system can be preferable.</p> <p>In addition, when systems rest massively on a passive behaviour, their design generally was notably simplified, which can limit their flexibility in terms of reconfiguration if that proves to be necessary. Lastly, testability is an important requirement for the implementation of safety systems. Testability of passive systems in appropriate situation is not often easy.</p>
Public	France			Les équipes de crises française réalisent de 2 à trois exercices de crise par an. Est ce suffisant pour pouvoir se préparer à des accident dont les causes et les conséquences sont nombreuses et variées. De plus la cinétique des phénomènes est telle que les réactions des équipes tant locales que nationales risques d'être rapidement prise de vitesse.	<p>The number of exercises conducted each year on French nuclear sites is compliant with the regulation and the PUI requirements (PUI, that are the onsite emergency plans, are subjected to the agreement of the ASN).</p> <p>In EDF sites, different types of exercises are organized every year to test all aspects of PUI. Each emergency worker has to participate at least one "PUI" exercise a year. National exercises are organized at least every five years for each site. On site and off site plans are tested and involve licensee's and public services' response organizations. The decision/command and communication chains are tested, regardless of the scenarios.</p> <p>The national level of EDF is involved in every national exercise and participate in every feedback organized by the ASN. The national level is also able to relay to the sites good practices identified, as well as areas for improvement. Each exercise is an opportunity to test symptom based SAMG in realistic conditions. This realistic testing is a complement to operator training with operating simulators.</p>