Complementary Safety Assessments

of French nuclear installations

15 September 2011

Summary

France considers that the accident on March, 11 2011 at the Fukushima Daiichi nuclear power plant in Japan, is a major event and that it is essential to learn all lessons possible from the accident.

The French Nuclear Safety Authority (ASN), tasked with the nuclear safety regulation of French civilian nuclear installations, ensured that a comprehensive feedback process from the Fukushima's accident was promptly initiated.

As in the case of Three Mile Island and Chernobyl accidents, this experience feedback will be a long process taking several years.

The Fukushima accident was triggered by an earthquake and a tsunami of exceptional magnitude. According to the risk profile of the French sites, phenomena of equal importance are virtually excluded. In this context and in the light of its knowledge of the 150 French nuclear installations which are under its supervision, ASN considered :

- it was not necessary to take immediate emergency measures;
- a complementary safety assessment of nuclear installations with respect to similar events should be conducted within a short term.

This assessment process also enables to respond to the French Government initiative, as Prime Minister requested, on March, 23 2011, ASN to carry out a safety audit of French nuclear installations.

The French approach to conduct complementary safety assessments meets the expectations of the European Council conclusions specified during its meeting on 24 and 25 March, 2011 and is consistent with the specifications approved by ENSREG (European Nuclear Safety REgulators' Group) on May, 25.

The French approach also takes into account following specificities:

- it concerns almost all of the 150 French installations (58 pressurized water reactors, EPR reactor under construction, research facilities, fuel cycle plants,…)
- the involvement of stakeholders, in particular the French High Committee for Transparency and Information on Nuclear Security (HCTISN), which led to focus on social/organisational and human factors and in particular the issue of sub-contracting. The scope of the complementary assessments has been thus extended to these topics.

As the complementary safety assessment approach concerns a large number of installations and that they are operated by a limited number of operators, ASN introduced an intermediate step in the assessment process : operators have submitted by June, 1 2011 at the latest, memoranda describing the methodology they adopted in order to conduct the complementary safety assessments. These documents have been reviewed by ASN and its technical support organisation, the Institute for Radiation Protection and Nuclear Safety (Institut de radioprotection et de sûreté nucléaire – IRSN).

This present report provides notably the summary of that scoping work which is quite essential if it is considered that ASN must proceed *de facto* with the complementary safety assessment of more than one-third of the European nuclear-power fleet. Its purpose is not to draw the first results that would identify concretely the improvements to be brought to any specific French reactor. In fact, since the French nuclear fleet is standardised, a large number of analyses must apply generically to all reactors, and presenting isolated – and obviously troncated – individual results would not be appropriate. Hence, French authorities prefer that a comprehensive and consolidated report, including the complementary safety assessment results for all nuclear-power reactors, be submitted at the end of 2011.

For 80 priority installations, including all nuclear power plants, operators are required to submit their conclusions no later than September, 15 2011. For most of the installations with lower priority, operators will have to submit their report at the latest on September, 15 2012. These reports will be available on the ASN's website (www.asn.fr).

The reports related to complementary safety assessments of priority installations will be reviewed by ASN with the support of IRSN and of Advisory Groups (Groupe permanent d'experts). On the basis of this analysis, ASN will provide its opinion to the French Government by the end of 2011. The French authorities will then send their final report to the European Commission by December, 31 2011, as requested in ENSREG's specifications.

1. The organisation of nuclear safety in France

The French civilian nuclear fleet is the second largest worldwide. It comprises 150 nuclear installations, including 58 pressurised water reactors which produce the large majority of the electricity consumed in France, one EPR reactor under construction, several reactors undergoing decommissioning, various facilities involved in the fuel cycle, and research facilities and plants that are virtually unique in the world.

In France, the regulation of civilian nuclear safety and radiation protection depends essentially on three players: the Government, the Parliament, and ASN. Their respective areas of competence are defined by Act 2006-686 of 13 June 2006 on "Transparency and Security in the Nuclear Field (TSN Act).

The Government exercises the regulatory power. It is responsible for enacting the general regulations relative to transparency, to nuclear safety and radiation protection. It takes also major decisions relative to the nuclear installations (creation decree, final shutdown decree), decisions that are supported by proposals or opinions from ASN. It also has advisory authorities such as the HCTISN (High Committee for Transparency and Information on Nuclear Security). The Government is also responsible for disaster and emergency services in emergency radiological situations.

Parliament contributes more specifically to nuclear safety and radiation protection by passing acts. It passed two major acts in 2006 : the Act of 13 June 2006 relative to transparency and security in the nuclear field (TSN), and the act of 28 June 2006 relative to the sustainable management of radioactive materials and waste.

On behalf of the State, ASN, which was created as an independent administrative authority by the TSN Act, regulates nuclear safety and radiation protection in order to protect workers, patients, the public and the environment from the risks related to civilian nuclear activities. ASN contributes to informing the public in these domains.

The TSN Act has improved and clarified the status of ASN with regard to nuclear safety and radiation protection by establishing its independence with respect to the Government. ASN also has enhanced powers that enable it to punish infringements and take any necessary measures in an emergency situation.

The ASN is directed by a commission of five commissioners who are irrevocable and whose mandate of six years is not renewable.

ASN relies on the technical assistance and expertise of IRSN and advisory committees of experts appointed *intuitu personae* for their competence in the fields concerned. These experts can come from varied backgrounds, such as universities, associations, research and expert bodies or coming from other industrial sectors than the nuclear one. The participation of foreign experts can bring new approaches to issues and the benefit of international experience.

2. ASN regulation of the civilian nuclear installations

ASN regulated all the French civilian nuclear installations. ASN carries out every year more than 700 inspections in these nuclear facilities.

In addition to this continuous regulation, licensees are required to perform a nuclear safety review of their installation every ten years, pursuant to paragraph III of article 29 of the TSN Act. The ten-yearly nuclear safety review goes beyond a simple "health checkup" of the installation. It is primarily the opportunity to make an in-depth verification of compliance with its own nuclear safety requirements, but it also serves to make modifications to improve the safety of the installations in order to make this safety level as close as possible of the one of more recent nuclear installations. This periodic safety review is also useful for ASN to determine whether these installations can continue to be operated until the next ten-yearly safety review.

Furthermore, ASN analyses abnormal events that occur in the nuclear installations. It checks that the licensee has suitably analysed the event, taken appropriate actions to correct the situation and prevent its recurrence, and circulated the operating experience feedback. Both ASN and IRSN make also a general examination of experience feedback from events. This can lead to requests to improve

the condition of the licensee's facilities and its operating organisation, but also to changes in the technical regulations.

Operating experience feedback encompasses the events occurring in France and abroad from the moment it is appropriate to take them into account to enhance nuclear safety or radiation protection.

Finally, ASN devotes considerable efforts to international relations with it foreign counterparts on bilateral, European and international basis. It has concluded more than 20 bilateral cooperation agreements with other Regulatory Bodies, is a member of several Regulatory Bodies associations (including on radiation protection). Moreover, in compliance with the TSN Act and on request from the Government, ASN takes part in the French delegations in international and European organizations on matters related to nuclear safety and radiation protection.

3. The French complementary safety assessment approach

As for the Three Mile Island and Chernobyl accidents, the in-depth experience feedback from the Fukushima accident will be a long process spanning several years[1].

In the short term, ASN has organised complementary safety assessments of the French civilian nuclear installations with respect to events of the same nature as occurred at Fukushima. These assessments come in addition to the permanent safety supervision process described earlier.

These complementary safety assessments fall within a dual framework: firstly the organisation of safety assessments ("stress tests") requested by the European Council at its meeting of 24-25 March 2011, and secondly the carrying out of a nuclear safety audit of the French civilian nuclear installations further to the Fukushima events, demanded in a letter of referral by the Prime Minister in application of article 8 of the TSN Act.

▪ Specifications consistent with the European specifications

Pursuant to article 29 of the TSN Act, ASN took 12 decisions on 5 May 2011 instructing the various nuclear installation licensees to perform these complementary safety assessments in accordance with a framework of precise specifications. These 12 decisions are enclosed in appendix A.

To maximise consistency between the European and French approaches, the drafting of the French specifications for the complementary safety assessments was based on the European specifications drawn up by the Western European Nuclear Regulators Association (WENRA). Its content is consistent with the specifications adopted by ENSREG (European Nuclear Safety Regulators' Group) last 25 May 2011., but contains additional topics (*ie*. scope extended).

The complementary safety assessment will thus consist in a targeted re-evaluation of the safety margins of the nuclear installations in the light of the events at Fukushima, that is to say natural phenomena on an extreme scale (earthquake, flooding, and their summed effect), severely taxing the safety functions of the installations and leading to a severe accident. The assessment will firstly focus on the effects of these natural phenomena; it will then look at the loss of one or more of the safety functions implicated at Fukushima (electrical power supplies and cooling systems), whatever the probability or the cause of the loss of these functions; lastly it will address the organization and the management of the severe accidents that can result from such events.

This assessment must include three key aspects:

- The provisions taken into account in the design basis of the installation, and the conformity of the installation with the applicable design requirements;
- The robustness of the installation beyond design basis; the licensee shall more specifically identify the situations that could lead to a sudden deterioration in the accident sequences ("cliff edge effects"[2]) and present the measures to avoid them;

[1] For example, it took six years after the Three Mile Island accident to evaluate the proportion of the reactor core that had melted.

- Any possible modification that could improve the level of safety of the installation.

- **Specifications with an extended scope than the one of the European specifications**

ASN has decided to apply the complementary safety assessments to all the French nuclear installations and not just the power reactors. Consequently, virtually all of the 150 nuclear installations in France will undergo a complementary safety assessment, including for example the EPR reactor currently under construction and the La Hague fuel reprocessing plant[3]. This required the introduction of a number of adaptations in the French specifications with respect to the ENSREG specifications.

Moreover, as requested by French stakeholders as the High Committee for Transparency and Information on Nuclear Security (HCTISN)ASN has decided to go beyond the European specifications regarding the integration of socio-organisational and human factors, and notably subcontracting. This is because the Fukushima accident showed that the quality of the relation between the licensee and its contractors, their common ability to organise themselves to work under severe accident conditions is essential for the control of such situations. This organisational capacity is also essential in the prevention of such accidents, the maintenance of the installations and the quality of their operation. Consequently, the conditions of use of subcontractors are addressed in the French complementary safety assessments.

- **Carrying out of the complementary safety assessments**

In accordance with the principle of licensee primary responsibility, which is the cornerstone of the international legal instruments on nuclear safety, the results of the complementary safety assessments will initially be recorded by each nuclear installation licensee in a report complying with ASN's specifications.

Each report will then be examined by ASN, assisted by experts. Over and beyond the expertise of the IRSN, ASN has decided to mobilise two of the seven advisory committees it calls upon for the most important subjects: the advisory committee for reactors and the advisory committee for laboratories and plants. These advisory committees comprising French and foreign experts will give ASN their opinion and make any recommendations they consider appropriate.

On the basis of these expert appraisals, ASN will then give its opinion to the Government, and might impose additional instructions to enhance the nuclear safety of installations if it deems necessary or, in some cases and when needed, to ask to stop the activities of the installations.

The magnitude of such task has led ASN to undertake a significant methological endeavour with the relevant French operators in order to carry out the corresponding complementary safety assessments under the best conditions and with the highest chances of success. In order to achieve that goal, ASN has requested operators to submit a preliminary note describing the selected methodology for conducting them.

That scoping work which is quite essential if it is considered that ASN must proceed *de facto* with the complementary safety assessment of more than one-third of the European nuclear-power fleet. Its purpose is not to draw the first results that would identify concretely the improvements to be brought to any specific French reactor. In fact, since the French nuclear fleet is standardised, a large number of analyses must apply generically to all reactors, and presenting isolated – and obviously troncated – individual results would not be appropriate. Hence, French authorities prefer that a comprehensive and consolidated report, including the complementary safety assessment results for all nuclear-power reactors, be submitted at the end of 2011.

[2] For instance, in the case of flooding, the water level would progressively increase and a cliff edge effect would be reached when significant flooding of plant area starts after water overtopping a protection dike.
[3] Installations whose decommissioning is nearing completion have been excluded.

- **Strong determination to involve the stakeholders**

Consultations will be held throughout this process.

The HCTISN, a national body of elected officials, non-governmental organisations, union representatives, qualified individuals, licensees and representatives of the public authorities, was consulted about the specifications for the complementary safety assessments. It is above all the discussions with the HCTISN that led to the development of aspects related to subcontracting within the French specifications. The HCTISN issued a favourable opinion on the French specifications on 3 May 2011 (appendix B). Members of the HCTISN were moreover invited to participate in the work of the advisory committees mobilised by ASN to review the licensees' report and to participate in the inspections of the installations organized by ASN to assess their safety at the light of the Fukushima events subject to the operator agreement (see above).

The local information committees (CLIs) that exist for individual nuclear installations and comprise local elected officials, non-governmental associations, union representatives and qualified individuals, were also invited to take part in the process. ASN has asked them more particularly to examine the conclusions of the complementary safety assessments submitted by the licensee. Members of CLI are also invited to participate in the inspections of the installations subject to the operator agreement (see above).

- **A transparent approach**

ASN attaches great importance to the openness and transparency of the complementary safety assessments approach.

The licensees' reports will be available on the ASN's website (www.asn.fr) upon receipt.

Furthermore, ASN's conclusions will be made public, as well as the opinions of the advisory committees mobilised by ASN.

Moreover, foreign experts from Germany, Switzerland, Belgium and Luxembourg participated at their request in the work of the advisory committee meetings called by ASN. They are also invited to participate in the inspections of the installations carried out by ASN and targeted on specific topics related to the Fukushima accident, subject to the operator agreement (see above).

- **The installations concerned and the time schedule**

The complementary safety assessments concern virtually all the nuclear installations. Less than ten installations whose decommissioning is nearing completion have been excluded

These installations have been divided into three categories according to their vulnerability to the phenomena that caused the Fukushima accident and the extent of the consequences of such an accident on them.

The operators of the 80 priority installations (notably all the power reactors in operation or under construction) gave ASN a memorandum presenting the chosen assessment methodology on 1 June 2011, and must submit an initial report by 15 September 2011 at the latest.

In order to examine these documents, ASN mobilised the expertise of IRSN and its advisory committees. They all met on 6 July 2011 to analyse the methodological memoranda, and will hold another session from 8 to 10 November to examine the complementary safety assessment reports.

ASN will communicate its opinion to the Government on the basis of these expert appraisals by the end of 2011. The French authorities will send the final report to the European Commission before 31 December 2011, in compliance with the ENSREG specifications.

For the lower priority installations, the operators will have until 15 September 2012 to carry out their complementary safety assessment. If a licensee is concerned only by this second category, it will have until 15 January 2012 to submit its methodology memorandum to ASN.

Lastly, the non-priority installations shall be treated by tailored requests from ASN, notably during their next ten-yearly safety review.

The nuclear installations and their priorities are listed in the appendix C.

4. Presentation of the methodological memoranda submitted by the operators

All the licensees of priority installations having to undergo a complementary safety assessment in 2011 (EDF, CEA, AREVA and the Laue Langevin Institute) submitted their methodological memoranda by 1 June 2011, as required by the ASN decisions taken on 5 May 2011.

These memoranda present the chosen methodology for the complementary safety assessment, the organisation put in place to meet the set deadlines and the planned detailed structure of the reports. The methodological memoranda submitted by the licensees are included in the appendix D.

IRSN made an initial analysis of these memoranda during which the licensees were asked to give certain commitments that supplement the memoranda submitted on 1 June 2011.

These commitments concerned more particularly:

For all the licensees:

- Consideration of the mechanical effects associated with water dynamic or static load in the flood risk assessment;
- Identification and justification of the initial considered conditions of the installation;
- Verification of the effective conformity of the structures, systems and key components and, where applicable, proposal of a plan of actions;
- Consideration of the cumulative effect (earthquake and flooding), explaining the method used;
- Submission of a dossier estimating the levels of hazard beyond which the availability of fundamental safety functions cannot be demonstrated, the identified weak points, the assessment of the plausible/foreseeable nature of the levels attained by the earthquake or flood, and the measures envisaged to increase the robustness of the installation.

For EDF:

- An assessment of the robustness of the safeguard systems, with a generic approach and on the basis of existing knowledge;
- Identification of the equipment essential for managing a severe accident with total loss of the electrical power and cooling fluid supplies;
- A presentation of the accident progression scenarios used to identify the cliff edge effects;
- The description of feasible human actions, notably the operation of key equipment (manual valves, alignments, …) under ambient and access conditions during a severe accident;
- The review of potential dependencies between the management of a severe accident affecting the reactor and the de-activation pool, as well as the review of the possibilities of hydrogen transfers between premises;
- The complementarity of the local and national crisis management and intervention means, so as to prevent any radioactive discharge into the environment, and insofar as possible, reactor core meltdown.

For the CEA:

- An assessment of the radiological or toxicological consequences and the kinetics of the various scenarios considered, to position them with respect to the consequences used for the dimensioning of the off-site emergency plans;
- Verifying that the means proposed by the French Atomic Energy and Alternative Energies Commission (*Commissariat à l'énergie atomique et aux énergies alternatives* – CEA) during crisis situations are robust against all hazards under study in complementary safety assessments (earthquakes, floods or any combination of both beyond initial design basis, impact of the accidents themselves) and remain operational in case of loss of electrical supply or loss the heat sink or hazards/induced events.

For AREVA

- In the light of experience feedback from the Fukushima accident, presentation of the technical subjects that need to be addressed at the next periodic safety review and the corresponding schedule of R&D studies and actions already identified;
- A general examination with a suitable level of detail of all the targeted installations, including those for which the source term represents a "low" hazard potential, including the active and inactive links between the installations or the units, and summing the consequences for the site as a whole;
- Integration of the notion of severity of substantial discharges into the ground and pollution of the water table, or pollutions that are difficult to remedy, and the corresponding crisis management actions;
- The identification of hazards and events that can be induced within the installation by an earthquake, a flood that exceeds the contingencies for the site, or their summed effects;
- Verification that the means implemented in a crisis situation are robust with respect to the hazards considered and remain operational and accessible in the event of loss of the electrical power supplies or cooling sources in particular;
- Explanation of the method and criteria used to assess the robustness of the installations.

For the Laue Langevin Institute

- In the light of experience feedback from the Fukushima accident, presentation of the technical subjects that warrant re-examination at the next periodic safety review and the corresponding schedule of R&D studies and actions;
- Integration of the notion of severity of substantial discharges into the ground and pollution of the water table, or pollutions that are difficult to remedy, and the corresponding crisis management actions.

The advisory committees convened by ASN on 6 July 2011 examined the licensee's methodological memoranda, along with the above additional commitments and the first analysis by IRSN.

The advisory committees underlined the ambitiousness of assessing the robustness of the installations with respect to extreme situations referred in the assigned times. The opinion and recommendations of the advisory committees were handed over to ASN and are appended (Appendix E).

5. ASN's opinion on the methodological memoranda

On the basis of this review, ASN considers that the methodological memoranda submitted by the licensees are on the whole satisfactory, on condition that they submit the required complementary information during the analysis and comply with the requests made by ASN.

These requests focus essentially on:

- EDF taking into account in its method for listing conformity deviations that impact the robustness of the installations, all the deviations known on 30 June 2011. ASN has asked for the selected deviations to be integrated in the dossiers transmitted by 15 September 2011;
- EDF and the Laue Langevin Institute developing for 15 September 2011 a plan of actions to ensure that the required robustness of the structures, systems and components is not called into question by their actual condition;
- An examination of the consequences of the progressive loss of the installation's means of protection against flooding, which is not postulated in their reference requirements. More particularly, ASN has asked that the licensees examine:
  - for EDF, the consequences of failure of the dykes of the Grand Canal d'Alsace near the Fessenhiem NPP;
  - for EDF and AREVA, the consequences of failure of the dykes of the Donzère Canal near the Tricastin NPP;
  - for the CEA, the consequences of failure of the Provence Canal near the Cadarache site.
- The verification by EDF of the robustness of the provisions and equipment necessary for managing a total loss of the heat sink or electrical power supplies, and limiting discharge in the event of a severe accident, integrating the risks of hazards or events (fire, explosion, etc.) induced by an earthquake or a flood.
- The dossiers that EDF and the CEA must submit for 15 September 2011 shall present, for all the types of situation considered, a qualitative analysis of the risks induced on the conditions of operation and intervention on their installations, by:
  - other nuclear installations or installations on the site classified under the Seveso directive, or other industrial facilities in the vicinity of the site, if applicable, the roads or railways passing near the site.
  - An initial assessment by CEA of the availability and accessibility - throughout the accident duration - of the resources common to the sites and which can be used for the installations examined,on 15 September 2011. This assessment will be supplemented in the dossier to be submitted in September 2012;
- The presentation by EDF of the possible complementary measures for managing a severe accident situation that could induce a risk for the environment and the local populations through groundwater pollution.

The opinions of ASN and the advisory committees on the methodological memoranda and letters sent to the licensees were posted on the web site www.asn.fr on 25 July. These opinions are appended (Appendix F and G).

6. Targeted inspections

In addition to the complementary safety assessments, ASN has initiated in the second quarter of the year, a campaign of targeted inspections on subjects relating to the Fukushima accident. These inspections, which are conducted on all the high-priority nuclear installations, provide an on-site verification of the conformity of the licensee's equipment and organisation with respect to the existing safety requirements.

These inspections address the following subjects:

- protection against external hazards, particularly earthquakes and flooding,
- loss of the electrical power supplies,
- loss of the cooling sources,

- operational management of radiological emergency situations.

- **Organisation of the targeted inspections**

38 inspections have been scheduled and are being carried out by teams comprising several ASN inspectors and experts from IRSN. This inspection campaign represents 110 days of on-site inspection.

These "targeted" inspections are scheduled between June and October 2011. For a given site, they are carried out as tightened inspections spanning several days (successive or not) covering all the subjects mentioned above. They are based on a frame of reference common to the nuclear power plants on the one hand, and to other civilian nuclear facilities on the other, and give preference to field inspections over documentary verifications.

Inspection follow-up letters are then sent to the licensees.

71% of the targeted inspections have been undertaken at that day. ASN will analyse the conclusions of the targeted inspections by the end of 2011, and give its conclusions in the complementary safety assessments report submitted to the Government. If ASN deems necessary, it may impose additional instructions to enhance installation nuclear safety.

- **Transparency and public information**

As is the case with all the other ASN inspection follow-up letters, the post-Fukushima targeted inspection follow-up letters will all be posted on the ASN web site (www.asn.fr).

Furthermore, ASN wished to involve representatives of civil society in its inspections. It thus proposed that the local information committees (CLIs) for the nuclear installations and the HCTISN (High Committee for Transparency and Information on Nuclear Security) attend a few targeted inspections as observers subject to the operator agreement (see above).

Lastly, ASN also invited inspectors from the German, Swiss, Belgian and Luxembourg safety authorities to attend targeted inspections in France as observers.

To date, 51 external observers have participated in the ASN's targeted inspections, chiefly on the NPP sites.

7. General conclusion

In order to obtain initial experience feedback from the Fukushima accident, the French Government decided to organise complementary safety assessments of the French civilian nuclear installations with respect to events of the same nature as occurred at Fukushima. These assessments come in addition to ASN's permanent safety monitoring actions.

The French approach of carrying out the complementary safety assessments, led by ASN, in compliance with the request letter from the Prime minister, is consistent with the frame established by the European Council. It goes even further, since it covers all civilian nuclear installations and not just power reactors, and it takes aspects relating to the subcontracting into account.

Through decisions of 5 May 2011, ASN asked the licensees of the priority nuclear installations (AREVA, CEA, EDF, Laue Langevin Institute) to submit by 1 June 2011 at the latest, a memorandum presenting the chosen methodology for conducting these complementary safety assessments.
After analysing these memoranda, ASN considers that the methodological procedures submitted by the licensees are on the whole satisfactory, on condition that they submit the required complementary information during the analysis and comply with the requests made by ASN.

The licensees of the priority nuclear installations shall submit their reports on the results of the complementary safety assessments no later than 15 September 2011. these reports will be available on ASN's website upon receipt. ASN will give its opinion to the Government by the end of 2011, and this opinion will be made public. The HCTISN, the CLIs and the foreign experts concerned will be

associated with the process. In compliance with the time schedule set up at the European level, a final national report on the complementary safety assessments will be sent by the French authorities at the latest on 31 December 2011.

While conducting the complementary safety assessments and even prior to the drafting of the final national report, the French authorities will not fail to submit to the European Commission any technical information or significant concrete result.

France underlines that the complementary safety assessments represent a first stage in the process of experience feedback following the Fukushima accident. Complementary appraisals will have to be carried out as of 2012 to gain deeper insight into the Fukushima accident and enhance the protection of French nuclear installations.

Glossary

AREVA	Industrial company dealing with fuel supply and management, and a vendor of nuclear reactors. AREVA was created on 3 September 2001. Issued from the merging of CEA-Inustries, Framatome-ANP and COGEMA activities; it is now one of the main worldwide companies in the nuclear field.
ASN	Autorité de Sûreté Nucléaire (*French Nuclear Safety Authority*)
CEA	The Commissariat à l'Energie Atomique et aux Energies Alternatives *(Atomic Energy and Alternative Energies Commission)* is a scientific and industrial organization and a prominent player for research, development and innovation in the fields of energy defence, information, communication and health technologies.
EDF	Electricité de France, SA, producing electricity, in charge of the operation and maintenance of its power plants, and of the sale of electricity
HCTISN	Haut Comité pour la Transparence et l'Information sur la Sécurité Nucléaire (*High Committee for Transparency and Information on Nuclear Security*), created by the TSN Act of 13 June 2006.
IRSN	Institut de Radioprotection et de Sûreté Nucléaire (*Institute for Radiation Protection and Nuclear Safety*)
TSN Act	Act on Transparency and Security in Nuclear field of 13 June 2006 – n°2006-686

List of appendices

A. 12 ASN decisions
Only the resolution related to EDF is translated in English and ***enclosed***

B. Opinions of the HCTISN
Only in French.
Not enclosed

C. List of the nuclear installations and their priority
Translated in English
Enclosed

D. Methodological memoranda submitted on 1 June
Only in French.
Not enclosed

E. Opinions and recommendations of the advisory committees
Only in French.
Not enclosed

F. ASN opinions on the methodological memos
Translated in English
Enclosed

G. Advisory Committee follow-up letters sent to the licensees
Only in French.
Not enclosed