

# Preparatory Committee for the 2015 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons

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## Third session

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### **Action taken by France in support of the International Atomic Energy Agency's Action Plan on Nuclear Safety**

France, for both its own nuclear facilities and as part of its cooperation with third parties, considers nuclear safety and its continuous improvement as a top priority and an essential condition for the responsible development of nuclear energy, without which the trust of the general public in nuclear energy could not be sustained. As Chair of the Group of Eight and the Group of 20 at the time of the accident at the Fukushima Daiichi nuclear power plant, France worked with its partners to provide emergency assistance to Japan and to ensure that the nuclear community took stock of the accident and learned lessons from it for the future. Its initiatives in the weeks following the accident (ministerial-level meeting and meetings of nuclear safety authorities in Paris, proposals for strengthening international emergency preparedness and response mechanisms under the aegis of the International Atomic Energy Agency) made an effective contribution to the development and implementation of the Agency's Action Plan on Nuclear Safety in September 2011.

Responsibility for implementing the Action Plan lies not only with the Agency but also with each of its member States. France, as a signatory of the Convention on Early Notification of a Nuclear Accident, the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency, the Convention on Nuclear Safety and the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management, is committed to fulfilling all its responsibilities for the application of these agreements and the principles they set out and to working with its partners to ensure that the international safety framework is actually strengthened. France is also convinced that the highest levels of safety can only be reached and maintained if each operator and nuclear country assumes its full responsibility in this regard.

Immediately following the events of 11 March 2011, France committed itself to the reinforcement of nuclear safety both at the national and European levels, through safety assessments of all its nuclear installations, and through its international action. France began in 2012 to compile a summary of the actions taken, structured according to the 12 areas identified in the Agency's Action Plan on Nuclear Safety. This document was submitted to the second session of the Preparatory Committee in 2013 in a working paper ([NPT/CONF.2015/PC.II/WP.47](#));



and an updated version is presented in the table below with actions carried out since then.

In the field of nuclear safety, transparency is absolutely essential, and the submission of the attached table contribute to that end. Nuclear safety is also a collective responsibility. France plans to continue working to ensure that nuclear safety is improved and maintained at the highest levels throughout the world.

Action 1: Safety assessments in the light of the accident at Tokyo Electric Power Company's Fukushima Daiichi Nuclear Power Station				
IAEA Action Plan on Nuclear Safety	Actions taken by France			
	National actions		Bilateral and international actions	
<p><i>Member States to promptly undertake a national assessment of the design of plants against site specific extreme natural hazards and to implement the necessary actions in a timely manner.</i></p>	<p>➤ <b>Organization of targeted inspection campaigns by the French nuclear safety authority (ASN — <i>Autorité de sûreté nucléaire</i>)</b></p> <p>During the months following the Fukushima Daiichi accident, 38 campaigns were conducted to verify compliance of operators' equipment and organization with the existing safety reference framework on topics related to Fukushima (loss of power supply, loss of cooling capacity, etc.). For the installations subject to targeted inspections in 2011, ASN conducted checking actions in 2012 in order to verify on the field that the requests were taken into account. These checking actions confirmed that the operators implemented in a satisfactory manner the actions they committed to implement in 2011.</p> <p>ASN continued in 2012 its targeted inspections campaign on the French nuclear installations on topics linked to the Fukushima Daiichi accident. ASN conducted between January and September 2012 a second campaign of 19 targeted inspections on 22 laboratories and facilities (lot 2 of the complementary safety assessments).</p>	→ Completed	<p>➤ <b>Implementation of stress tests</b></p> <p>Following a decision taken at the European Council meeting held on 24-25 March 2011, for all European power reactors; stress tests were conducted between June 2011 and April 2012, in compliance with strict specifications drawn up by the European Nuclear Safety Regulators Group (ENSREG), on the basis of proposals by the Western European Nuclear Regulators Association. A peer review of actions conducted in the different countries was organized during the first trimester of 2012 in the framework of ENSREG. The recommendations issued by ENSREG following these stress tests are currently being implemented by the member States as part of European-level and national action plans.</p> <p>A national action plan was published by ASN on 20 December 2012 and presented during an European workshop in April 2013.</p> <p>After this workshop, members States decided to organize a follow-up on the implementation of the recommendations in 2015.</p>	→ Completed
	<p>➤ <b>Complementary safety assessments</b></p> <p>At the request of the Prime Minister, in March 2011, ASN asked operators to conduct complementary safety assessments in order to verify the resistance of their nuclear facilities to extreme natural threats. The specifications for the complementary safety assessments were developed in line with those of European stress tests and concerned not only power reactors but also</p>	→ Completed		

	<p>research facilities and fuel cycle plants; a total of 79 nuclear facilities were given priority status (lot 1). The analysis of the reports by operators within this context were subject to a report by ASN submitted to the French Prime Minister on 3 January 2012 (see below, actions by the operators). ASN adopted, on 26 June and 10 July 2012, 32 decisions that each describes about 30 complementary measures. These measures aim at strengthening strongly safety margins beyond the facilities' capacities. These decisions are legally binding and the operators shall implement important works that include, in particular, investments in human resources and shall define a hard core of organizational and technical measures.</p> <p>Some of these measures were already in effect by the end of 2013 (see below, actions by operators) and complementary measures on the core will be or were communicated during the first trimester of 2014. For the 20 facilities of lot 1, the hard core was the subject of the meeting of permanent experts on April 3 and 4 2013. Measures will be taken for facilities also requiring a hard core.</p> <p>The same exercise was carried out for an additional 22 facilities called "lot 2". They include reactors undergoing dismantling, the International Thermonuclear Experimental Reactor (ITER) facility and a radiopharmaceutical isotopes production facility. In accordance with ASN decisions of 5 May 2011 on the implementation of complementary safety assessments, nuclear operators submitted their reports before 15 September 2012.</p> <p>The reports were analysed by ASN and its technical support, the IRSN (<i>Institut de Radioprotection et de Sûreté Nucléaire</i> — French Institute for Radiological Protection and Nuclear Safety). On the basis of the advice of the permanent groups and</p>	<p>→ <b>Under way</b></p> <p>→ <b>Under way</b></p>		
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	<p>the commitments by operators, ASN will draft measures for the necessary installations and site, according to a proportionate approach.</p> <p>Finally, for the majority of lot 3 facilities, ASN fixed the dates for submitting the reports.</p> <p>The reports should be submitted before the next safety review, public investigations or operating licence request. If the next safety review is too late, the submission of the reports should be done in advance. All reports on complementary safety assessments should be submitted before 2020.</p> <p>➤ <b>Actions by operators</b></p> <ul style="list-style-type: none"> <li>– In addition to checking the compliance of facilities and the existence of safety margins with regard to threats taken into account in the design basis, an additional level of defence in depth has been defined and proposed for safety facilities, so that under all circumstances the availability of functions essential to the safety of the facility can be maintained, for a sufficient period of time, under any extreme environmental conditions. This additional level of defence requires the strengthening and/or installation of equipment essential to the management of extreme situations, able to withstand large earthquakes or floods in excess of the existing design basis. This minimum essential equipment would therefore constitute a “hardened safety core” and would have to be extremely robust, available under all circumstances, so as to be able to prevent a serious accident or restrict its consequences. The complementary safety assessments are just the first step in a long feedback process following the Fukushima accident. In France, they will lead to a strengthening of the capacity of facilities to</li> </ul>	<p>→ <b>Under way</b></p> <p>→ <b>Under way</b></p>		
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	<p>maintain their fundamental safety functions in the face of markedly more severe threats than those taken into consideration in their design.</p> <ul style="list-style-type: none"> <li>– The creation of a French nuclear rapid response team (<i>FARN — Force d'Action Rapide Nucléaire</i>), able to respond to a situation on any Electricité de France (EDF) site within 24 hours. This team should be able to intervene on one reactor of a site. It shall be able to intervene on all the reactors of a site at the same time before the end of 2014 (on a site with four units), and by the end of 2015 (for a site with six units).</li> <li>– In 2013, the company AREVA defined a road map and the procedures for the AREVA National Response Force (ANRF), comprising resources and equipment dedicated to on-site response interventions. The ANRF will be fully operational by the end of 2016.</li> <li>– Strengthening of on-site communications resources for extreme situations (strengthening of the self-sufficiency of communications resources, satellite communications).</li> <li>– Strengthening of the shared resources made available by EDF, AREVA and the Atomic Energy Commission (<i>Commissariat à l'Energie Atomique — CEA</i>) and currently restricted to automated robotic equipment for operation in highly radioactive conditions.</li> <li>– Creation of an action plan to study and address the risks related to the nearby industrial environment in the event of extreme situations.</li> <li>– The works for the implementation of the hard core have already started for some operators (Institut Laue Langevin for example) and will</li> </ul>	<p>→ Under way</p> <p>→ Under way</p> <p>→ Under way</p> <p>→ Under way</p>		
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	continue for several years. For the more complex measures, with a remote deadline, the decisions call for transitory measures. ASN pays special attention to the follow-up of the implementation of all measures it prescribes. Generally speaking, the response of the operators is satisfactory overall.			
<i>The IAEA Secretariat, taking into account existing experiences, to develop a methodology and make it available for Member States that may wish to use it in carrying out their national assessments.</i>				
<i>The IAEA secretariat, upon request, to provide assistance and support to Member States in the implementation of a national assessment of the design of nuclear power plants against site-specific extreme natural hazards.</i>				
<i>The IAEA secretariat, upon request, to undertake peer reviews of national assessment, and to provide additional support to Member States.</i>				

Action 2: Peer reviews				
IAEA Action Plan on Nuclear Safety	Actions taken by France			
	National actions		Bilateral and international actions	
<i>The IAEA secretariat to strengthen existing IAEA peer reviews by incorporating lessons learned and by ensuring that these reviews appropriately address regulatory effectiveness, operational safety, design safety and emergency preparedness and response; Member States to provide experts for peer review missions.</i>			<ul style="list-style-type: none"> <li>➤ Participation of French experts in IAEA peer review missions. On average, experts from the ASN take part in four IRRS missions a year.</li> <li>➤ New permanent resources made available to the Agency to directly help it complete IRRSs (CFE ASN) and design reviews for new reactor models submitted to the Agency by Member States (CFE AREVA).</li> </ul>	→ <b>Regular</b>
<i>The IAEA secretariat, in order to enhance transparency, to provide summary information on where and when IAEA peer reviews have taken place, and to make publicly available in a timely manner the results of such reviews with the consent of the State concerned.</i>	The ASN publishes reports on International Regulatory Review Service (IRRS) and Operational Safety Review Team (OSART) missions conducted in France on its website.	→ <b>Regular</b>	<ul style="list-style-type: none"> <li>➤ Agreement given by France for information on IAEA peer review missions already conducted or planned in France to appear on the website for the Action Plan on Safety (message from the Governor of 28 March 2012).</li> <li>➤ Agreement in principle given by France for the IAEA to publish the results of certain types of peer review missions conducted in France (message from the Governor of 16 May 2012).</li> </ul>	→ <b>Completed</b>



<p><i>Member States to be strongly encouraged to voluntarily host IAEA peer reviews, including follow-up reviews, on a regular basis; the IAEA secretariat to respond in a timely manner to requests for such reviews.</i></p>	<ul style="list-style-type: none"> <li>➤ One IRRS mission hosted in 2006, with a follow-up mission in 2009 and the next mission planned for 2014.</li> <li>➤ One OSART mission (pre-OSART, OSART and follow-up) hosted in France each year.</li> <li>➤ 25 OSART missions hosted since 1985.</li> <li>➤ After the Chooz mission in 2013, all French nuclear power reactors will have been subject to an OSART mission.</li> <li>➤ EDF will welcome a “Corporate OSART” mission in 2014</li> </ul>	→ <b>Regular</b>		
<p><i>The IAEA secretariat to assess, and enhance as necessary, the effectiveness of the IAEA peer reviews.</i></p>				

Action 3: Emergency preparedness and response				
IAEA Action Plan on Nuclear Safety	Actions taken by France			
	National actions	Bilateral and international actions		
<i>Member States to conduct a prompt national review and thereafter regular reviews on their emergency preparedness and response arrangements and capabilities, with the IAEA secretariat providing support and assistance through Emergency Preparedness Review (EPREV) missions, as requested.</i>	➤ <b>Public authorities</b>			
	– ASN action plan to improve its crisis management by integrating feedback from the mobilization carried out during the Fukushima Daiichi accident.	→ Completed		
	– Change in IRSN crisis management, integrating feedback from the mobilization carried out during the Fukushima Daiichi accident.	→ Completed		
	– Integration into the planning of nuclear and radiological emergency exercises of the feedback from Fukushima (simulation of accidents with an impact on several facilities at the same time — interministerial circular of 20 December 2011).	→ Under way		
	– On the request of the Prime Minister in June 2011, interministerial works integrating feedback from the Fukushima Daiichi accident were conducted to establish a national plan for response to a major nuclear or radiological accident published in February 2014, designed as an aid to decision-making at the strategic and political level of the emergency planning national organization.	→ Completed		
	– Works ongoing on the field implementation of the national plan to respond to a major nuclear or radiological accident.	→ Under way		

	<p>➤ <b>Operators</b></p> <ul style="list-style-type: none"> <li>– Standardization and streamlining of EDF emergency plans currently under assessment by the ASN.</li> <li>– Integration of a specific emergency plan for climactic and related risks to safety. This plan applies to several facilities.</li> <li>– In 2013, AREVA defined a roadmap and the procedures for the AREVA National Response Force (ANRF), comprising resources and equipment dedicated to on-site response interventions. The training of the dedicated staff is ongoing. The ANRF will be fully operational by the end of 2016.</li> </ul>	<p>→ <b>Completed</b></p> <p>→ <b>Under way</b></p>		
<p><i>The IAEA secretariat, Member States and relevant international organizations to review and strengthen the international emergency preparedness and response framework, taking into account recommendations given in the final report of the International Action Plan for Strengthening the International Preparedness and Response System for Nuclear and Radiological Emergencies, and encouraging greater involvement of the relevant international organizations in the</i></p>		<p>➤ Planned IAEA-IRSN cooperation to support the strengthening of the technical capacities of the IAEA and establish an operational working relationship between the two, based on the sharing of data and expertise. This technical cooperation programme, planned as a multi-year initiative (2012-2015), will be based on a first stage dedicated to the development of the technical capacity of the IEC, followed by a set of actions taken on a periodic basis to maintain and strengthen this capacity.</p> <p>➤ French proposals on the creation, under the aegis of the IAEA, of an International Rapid Response Mechanism for Nuclear and Radiological Emergencies, and a network of several national or regional nuclear crisis management training centres.</p> <p>➤ Declaration by French and British authorities (17 February 2012) to act together to strengthen their own capacity and develop bilateral coordination in terms of the organization and management of emergency situations. Launch of works to this end in summer 2012.</p>	<p>→ <b>Under way</b></p> <p>→ <b>Under way</b></p> <p>→ <b>Under way</b></p>	

<i>Joint Radiation Emergency Management Plan of the International Organizations.</i>			➤ Participation of a French expert in the senior expert group of IAEA (Emergency Preparedness and Response Expert Group).	→ <b>Under way</b>
<i>The IAEA secretariat, Member States and relevant international organizations to strengthen the assistance mechanisms to ensure that necessary assistance is made available promptly. Consideration to be given to enhancing and fully utilizing the IAEA Response and Assistance Network (RANET), including expanding its rapid response capabilities.</i>				
<i>Member States to consider, on a voluntary basis, establishing national rapid response teams that could also be made available internationally through RANET.</i>				
<i>The IAEA secretariat, in case of a nuclear emergency and with the consent of the State concerned, to conduct timely fact-finding missions and to make the results publicly available.</i>				

Action 4: National regulatory bodies				
IAEA Action Plan on Nuclear Safety	Actions deployed by France			
	National actions		Bilateral and international actions	
<i>Member States to conduct a prompt national review and thereafter regular reviews of their regulatory bodies, including an assessment of their effective independence, adequacy of human and financial resources and the need for appropriate technical and scientific support, to fulfil their responsibilities.</i>	Increase in the number of staff members and budget of ASN and IRSN in order to meet the increased workload of ASN resulting from the feedback from the Fukushima Daiichi accident, consistent with the missions of these organizations.	→ <b>Completed</b>		
<i>The IAEA secretariat to enhance the Integrated Regulatory Review Service (IRRS) for peer review of regulatory effectiveness through a more comprehensive assessment of national regulations against IAEA Safety Standards.</i>				
<i>Each Member State with nuclear power plants to voluntarily host, on a regular basis, an IAEA IRRS mission to assess its national regulatory framework. In addition, a follow-up mission to be conducted within three years of the main IRRS mission.</i>	<ul style="list-style-type: none"> <li>➤ IRRS mission hosted in 2006, with a follow-up mission in 2009, and the next mission planned for 2014 (see action 2).</li> <li>➤ In compliance with Directive 2009/71/Euratom on nuclear safety, this international peer review must take place in France at least every 10 years (see action 2).</li> </ul>	→ <b>Regular</b>		

Action 5: Operating organizations				
IAEA Action Plan on Nuclear Safety	Actions taken by France			
	National actions		Bilateral and international actions	
<i>Member States to ensure improvement, as necessary, of management systems, safety culture, human resources management, and scientific and technical capacity in operating organizations; the IAEA secretariat to provide assistance to Member States upon request.</i>	<ul style="list-style-type: none"> <li>➤ France has extended post-Fukushima complementary safety assessments and the resulting provisions to organizational, social and human factors, as part of a continuous improvement approach with regard to safety (see action 1).</li> <li>➤ 8 February 2012: adoption of the decree setting the general rules on basic nuclear installations, which includes provisions on safety policy, safety management system, technical and financial capacities, human resources, subcontractors, etc.</li> <li>➤ Strengthening of crisis organization and related resources (FARN mobile resources, strengthened crisis buildings, etc.) by operators.</li> </ul>	→ <b>Completed</b>	<p>Widening of the scope of action of WANO (World Association of Nuclear Operators) to improve the level of protection and mitigation among nuclear operators worldwide: external threats, management of serious accidents, emergency preparedness for crisis situations, etc.</p> <p>AREVA has been a member of WANO since July 2012. A peer review mission will be organized in The Hague facility in June 2014.</p>	→ <b>Completed</b>
<i>Each Member State with nuclear power plants to voluntarily host at least one IAEA Operational Safety Review Team (OSART) mission during the coming three years, with the initial focus on older nuclear power plants. Thereafter, OSART missions to be voluntarily hosted on a regular basis.</i>	<ul style="list-style-type: none"> <li>➤ One OSART mission (pre-OSART, OSART and follow-up) hosted in France each year.</li> <li>➤ 25 OSART missions hosted since 1985.</li> <li>➤ After the Chooz mission in 2013, all French nuclear power reactors will have been subject to an OSART mission.</li> <li>➤ EDF will receive a “Corporate OSART” mission in 2014.</li> </ul>	→ <b>Regular</b>		
<i>The IAEA secretariat to strengthen cooperation with WANO by amending their Memorandum of</i>				

<p><i>Understanding to enhance information exchange on operating experience and on other relevant safety and engineering areas and, in consultation with other relevant stakeholders, to explore mechanisms to enhance communication and interaction among operating organizations.</i></p>				
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Action 6: IAEA Safety Standards				
IAEA Action Plan on Nuclear Safety	Actions taken by France			
	National actions		Bilateral and international actions	
<i>The Commission on Safety Standards and the IAEA secretariat to review, and revise as necessary using the existing process in a more efficient manner, the relevant IAEA Safety Standards in a prioritised sequence.</i>			<p>France contributes to the drafting of IAEA Safety Standards:</p> <ul style="list-style-type: none"> <li>➤ French experts take part in the meetings of the Commission on Safety Standards, as well as those of the four technical committees.</li> <li>➤ Making resources (CFE AREVA, CFE, EDF) available to the Agency to help it update its safety standards, including, as far as necessary, the lessons learned from the Fukushima accident.</li> </ul>	→ <b>Regular</b>
<i>Member States to utilize as broadly and effectively as possible the IAEA Safety Standards in an open, timely and transparent manner. The IAEA secretariat to continue providing support and assistance in the implementation of IAEA Safety Standards.</i>	The French regulatory framework has been developed in accordance with IAEA Safety Standards.			



Action 7: International legal framework				
IAEA Action Plan on Nuclear Safety	Actions taken by France			
	National actions		Bilateral and international actions	
<i>States parties to explore mechanisms to enhance the effective implementation of the Convention on Nuclear Safety, the Joint Convention on the Safety of Spent Fuel Management and the Safety of Radioactive Waste Management, the Convention on the Early Notification of a Nuclear Accident and the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency, and to consider proposals made to amend the Convention on Nuclear Safety and the Convention on the Early Notification of a Nuclear Accident.</i>			<p>➤ Active participation in the extraordinary meeting of the Convention on Nuclear Safety in August 2012, including by submitting proposals for changes to the guides governing the Convention mechanism, in an effort to strengthen the effectiveness of the process established under the Convention</p> <p>➤ ASN participates in the Convention on Nuclear Safety Working Group on Transparency and Effectiveness, and the joint working group of the Convention on Nuclear Safety and the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management, to ensure consistency between the two conventions (working group initiated by France)</p>	<p>→ <b>Completed</b></p> <p>→ <b>Under way</b></p>
<b>Member States to be encouraged to join and effectively implement these Conventions.</b>	<p>➤ <b>France has adhered to the following conventions:</b></p> <ul style="list-style-type: none"> <li>- Convention on Nuclear Safety (France applies the Convention to research reactors on a voluntary basis)</li> <li>- Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management</li> <li>- Convention on Early Notification of a Nuclear Accident</li> <li>- Convention on Assistance in the Case of Nuclear Accident or Radiological Emergency</li> </ul>	<p><b>1995</b></p> <p><b>2000</b></p> <p><b>1989</b></p> <p><b>1989</b></p>	<p>➤ Active participation by France in the meetings of the Contracting Parties to review implementation of these conventions Sixth review meeting of the Convention on Nuclear Safety (24 March-4 April 2014): French chair</p>	<p>→ <b>Regular</b></p>

<p><i>Member States to work towards establishing a global nuclear liability regime that addresses the concerns of all States that might be affected by a nuclear accident with a view to providing appropriate compensation for nuclear damage. The IAEA International Expert Group on Nuclear Liability (INLEX) to recommend actions to facilitate achievement of such a global regime. Member States to give due consideration to the possibility of joining the international nuclear liability instruments as a step toward achieving such a global regime.</i></p>	<ul style="list-style-type: none"> <li>➤ Adherence of France to the Paris and Brussels Conventions</li> <li>➤ Ratification of the Joint Protocol relating to the Application of the Vienna Convention and the Paris Convention on April 2014</li> <li>➤ Anticipated inclusion in French legislation of the increase of compensation ceilings for nuclear operators set out by the amending protocols of 2004. A draft law ratifying order No. 2012-6 dated 5 January 2012 modifying books I and V of the environment code, the public health code and the defence code [text No. 481 (2011-2012)] was submitted to the French Senate on 21 March 2012.</li> <li>➤ The ratification process for the 2004 protocols amending the conventions of Paris and Brussels has been completed. The instruments of ratification will be simultaneously deposited by all European Union member States parties to the Paris and Brussels Conventions.</li> </ul>		<ul style="list-style-type: none"> <li>➤ Participation of two French experts in the IAEA INLEX group</li> <li>➤ Participation of France in the OECD Nuclear Energy Agency's Nuclear Law Committee</li> <li>➤ Joint statement with the United States (signed on 13 and 28 August 2014) on civil liability for nuclear damage. This joint statement affirms the commitment of both States to contribute to the establishment of a global civil nuclear liability regime involving a fair indemnification for the victims of nuclear accidents, as recommended by the IAEA.</li> </ul>	<p>→ <b>Permanent</b></p> <p>→ <b>Permanent</b></p> <p>→ <b>Completed</b></p>
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Action 8: Member States planning to embark on a nuclear power programme				
IAEA Action Plan on Nuclear Safety	Actions taken by France			
	National actions		Bilateral and international actions	
<i>Member States to create an appropriate nuclear infrastructure based on IAEA Safety Standards and other relevant guidance, and the IAEA secretariat to provide assistance as may be requested.</i>			<p>➤ France provides assistance to States wishing to launch a nuclear power programme, either as part of IAEA activities or in the form of bilateral cooperation (organization of training and workshops for IAEA, actions by the Agence France Nucléaire International (French international nuclear agency), including developing skills in partnership with the International Institute of Nuclear Energy and CFE IRSN in the IAEA Nuclear Safety Action Team (2012-2014)).</p> <p>➤ ASN responds to requests for assistance through bilateral initiatives or through European and international instruments (European Union Nuclear Safety Cooperation Instrument and IAEA Regulatory Cooperation Forum). The purpose of this cooperation is to enable the countries concerned to establish a suitable regulatory framework and a competent and independent safety authority, and develop a safety and transparency culture, which is essential for a national nuclear safety and radiation protection oversight system.</p>	<p>→ <b>Regular</b></p> <p>→ <b>Regular</b></p>
<i>Member States to voluntarily host Integrated Nuclear Infrastructure Reviews (INIR) and relevant peer review missions, including site and design safety reviews, prior to commissioning the first nuclear power plant.</i>				

Action 9: Capacity-building				
IAEA Action Plan on Nuclear Safety	Actions taken by France			
	National actions		Bilateral and international actions	
<i>Member States with nuclear power programmes and those planning to embark on such a programme to strengthen, develop, maintain and implement their capacity building programs, including education, training and exercises at the national, regional and international levels; to continuously ensure sufficient and competent human resources necessary to assume their responsibility for safe, responsible and sustainable use of nuclear technologies; the IAEA secretariat to assist as requested. Such programmes to cover all the nuclear safety related areas, including safe operation, emergency preparedness and response and regulatory effectiveness and to build upon existing capacity building infrastructures.</i>	➤ Scope of complementary safety assessments conducted by ASN extended to the areas of subcontracting and taking into account organizational and human factors.	→ <b>Completed</b>	➤ France undertakes active cooperation with the Agency as part of its bilateral cooperation (see action 8).	→ <b>Regular</b>
	➤ Creation of the International Institute of Nuclear Energy in 2010.		➤ IRSN and its European partners have created the European Nuclear Safety Training and Tutoring Institute, which provides training to safety professionals in Europe and worldwide.	→ <b>Completed</b>
	➤ 7 February 2012: adoption of decree setting out the general rules for basic nuclear installations on safety policy, safety management system, human resources, subcontracting, etc.).	→ <b>Completed</b>		
	➤ Operator action: implementation of the FARN and training of crisis teams in the use of mobile resources, extension of the scope of exercises to extreme situations affecting several reactors at once.	→ <b>Completed</b>	➤ Under the aegis of IAEA, the Technical Safety Organizations Forum has been created to promote the sharing of information, experiences, lessons and safety cultures, and to harmonize nuclear safety practices in keeping with the highest safety standards.	

<p><i>Member States with nuclear power programmes and those planning to embark on such a programme, to incorporate lessons learned from the accident into their nuclear power programme infrastructure; the IAEA secretariat to assist as requested.</i></p>	<p>France extended post-Fukushima complementary safety assessments and the resulting provisions to organizational, social and human factors, as part of a continuous improvement approach with regard to safety (see actions 1 and 5).</p>			
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Action 10: Protection of people and the environment from ionizing radiation				
IAEA Action Plan on Nuclear Safety	Actions taken by France			
	National actions		Bilateral and international actions	
<i>Member States, the IAEA secretariat and other relevant stakeholders to facilitate the use of available information, expertise and techniques for monitoring, decontamination and remediation both on and off nuclear sites and the IAEA secretariat to consider strategies and programmes to improve knowledge and strengthen capabilities in these areas.</i>			<p>➤ <b>Studies at the Fukushima site</b></p> <ul style="list-style-type: none"> <li>– IRSN participation in different studies:</li> <li>– Environmental measurement campaigns around Fukushima (JAEA-MEXT)</li> <li>– FreeBird project on radiation effects on physiology, phenotype and physical shape of birds in the contaminated area around Fukushima. Follow-up of the project on frogs (Tempe University — Tsukuba University)</li> <li>– Report of the United Nations Scientific Committee on the Effects of Atomic Radiation (2011) on radiological situation in the Fukushima region. It deals with workers and populations exposed to atmospheric and environment radiations.</li> <li>– Five-year cooperation agreement with Tsukuba University to study the radiological impact of the Fukushima accident (transfer of contamination in the ground and evolution of the contamination in forests).</li> </ul>	→ <b>Under way</b>
			<p>➤ <b>Generic studies</b></p> <ul style="list-style-type: none"> <li>– Sharing of information on the management of post-accident situations (IRSN-JAEA)</li> <li>– Elements of national doctrine on post-accident management were published in November 2012 by ASN and transmitted to the Government. Work is ongoing to enhance certain elements: waste management, non-food</li> </ul>	→ <b>Completed</b>

			<p>goods control, implication of stakeholders in post-accident management. Annual exercises now include the first phase of post-accident management.</p> <p>– Participation of France in OECD/NEA Committee on Radiation Protection and Public Health.</p>	
<i>Member States, the IAEA secretariat and other relevant stakeholders to facilitate the use of available information, expertise and techniques regarding the removal of damaged nuclear fuel and the management and disposal of radioactive waste resulting from a nuclear emergency.</i>			Thanks to its long experience, AREVA is ready to contribute to the damaged fuel removal.	
<i>Member States, the IAEA secretariat and other relevant stakeholders to share information regarding the assessment of radiation doses and any associated impacts on people and the environment.</i>			Treating people exposed to radiation in the specialized services of French hospitals: IRSN and Percy hospital are currently in discussions with the IAEA and some South American countries with a view to developing an international technical cooperation project.	→ <b>Under way</b>

Action 11: Communication and information dissemination				
IAEA Action Plan on Nuclear Safety	Actions taken by France			
	National actions		Bilateral and international actions	
<i>Member States, with the assistance of the IAEA secretariat, to strengthen the emergency notification system, and reporting and information sharing arrangements and capabilities.</i>	Continuous improvement of the emergency notification system (see actions 1 and 3).	→ Regular		
<i>Member States, with the assistance of the IAEA secretariat, to enhance the transparency and effectiveness of communication among operators, regulators and various international organizations, and strengthen the IAEA's coordinating role in this regard, underlining that the freest possible flow and wide dissemination of safety related technical and technological information enhances nuclear safety.</i>	<ul style="list-style-type: none"> <li>➤ The environment code contains general provisions for informing the public (systematic public consultation on regulatory draft texts, participation of the public in some authorization procedures, right of access of the public to environmental information)</li> <li>➤ It also provides for the right of the public access any information related to nuclear safety and for the creation of local information committees near each nuclear facility.</li> </ul>	→ Completed	Participation of France in the “Fukushima dialogue”, a forum set by the International Commission on Radiological Protection to facilitate discussion between Japanese stakeholders (citizens, associations, elected representatives, teachers, etc.) and international experts.	→ Completed
<i>The IAEA secretariat to provide Member States, international organizations and the general public with timely, clear, factually correct, objective and easily understandable information during a nuclear emergency on its potential consequences, including</i>			Following consultation at national level, France made proposals to the IAEA secretariat to better define the Agency's role in the event of a nuclear crisis. The aim is to promote consultation in the international community, in particular within the context of the Emergency Preparedness and Response Expert Group.	→ Under way



<i>analysis of available information and prognosis of possible scenarios based on evidence, scientific knowledge and the capabilities of Member States.</i>				
<i>The IAEA secretariat to organize international experts meetings to analyse all relevant technical aspects and learn the lessons from the Fukushima Daiichi nuclear power station accident.</i>				
<i>The IAEA secretariat to facilitate and to continue sharing with Member States a fully transparent assessment of the accident at the Tokyo Electric Power Company's Fukushima Daiichi nuclear power station, in cooperation with Japan.</i>				
<i>The IAEA secretariat and Member States, in consultation with the OECD/NEA and the IAEA International Nuclear and Radiological Event Scale (INES) Advisory Committee to review the application of the INES scale as a communication tool.</i>				

Action 12: Research and development				
IAEA Action Plan on Nuclear Safety	Actions taken by France			
	National actions		Bilateral and international actions	
<i>Relevant stakeholders, with assistance provided by the IAEA secretariat as appropriate, to conduct necessary research and development in nuclear safety, technology and engineering, including that related to existing and new design-specific aspects.</i>	<ul style="list-style-type: none"> <li>➤ ASN, supported by its scientific committee, issues and publishes notices which identify subjects on which research is to be strengthened in the field of nuclear safety and radiation protection. Under the aegis of the national agency for research, several research projects related to nuclear safety and radiation protection are going to be carried out by IRSN, CEA, CNRS or universities starting in 2014. IRSN pursues research activities in different fields (human and environmental safety and radiation protection; development of codes; creation of databases ...).</li> <li>➤ CEA, EDF and AREVA cooperate within a joint research institute, coordinating work on second- and third-generation reactors and their fuel.</li> </ul>		<ul style="list-style-type: none"> <li>➤ French entities are strongly involved in research programmes carried out in the Euratom and OECD/NEA frameworks.</li> <li>➤ Participation of France in the OECD/NEA Committee on the Safety of Nuclear Installations.</li> <li>➤ IRSN and Fukushima University signed a five-year collaboration agreement to share scientific information and data and carry out joint research projects involving experts from both entities.</li> <li>➤ Cooperation between IRSN and Japan Nuclear Energy Safety Organization on core fusion phenomena for generations II and III nuclear reactors. Reflection on complementarity of their future experimental programmes and of their computer codes.</li> </ul>	→ <b>Under way</b>
<i>Relevant stakeholders and the IAEA secretariat to utilize the results of research and development and to share them, as appropriate, to the benefit of all Member States.</i>			<ul style="list-style-type: none"> <li>➤ CFE IRSN mentioned in actions 8 and 9.</li> <li>➤ Creation of the Technical Safety Organizations Forum to promote the sharing of information, experiences, lessons and safety cultures and to standardize nuclear safety practices according to the highest safety standards.</li> <li>➤ Participation of French institutes in the IAEA coordinated research projects.</li> <li>➤ Memorandum of understanding between Melodi, l'Alliance, Eurados and NERIS platforms on radiation protection matters</li> </ul>	→ <b>Completed</b>  → <b>Under way</b>