

IRSN

INSTITUT
DE RADIOPROTECTION
ET DE SÛRETÉ NUCLÉAIRE

Enhancing nuclear safety

NUCLEAR ACCIDENT AT FUKUSHIMA-DAIICHI

Timeline of IRSN actions

March 11, 2011 - 14:46 local time

(06:46 in France): an 8.9-magnitude earthquake occurred 80 km off the eastern coast of the Japanese island of Honshu. Following a loss of electrical power at the Fukushima-Daiichi nuclear power plant, the reactors shut down and the emergency generators took over.

March 11, 2011 - 15:41 local time

(07:41 in France): 14-meter tsunami waves hit the coast, overflowing the plant's protective walls. The emergency generators were flooded and the water intakes used for cooling the reactor were damaged.



INTERVIEW WITH...

JACQUES REPUSSARD,
IRSN Director General

The earthquake disaster and the resulting nuclear accident that struck Japan in March 2011 will not be forgotten before long. Now one year on, France and other countries around the world have adopted measures to further reduce the vulnerability of nuclear sites to natural hazards, as the magnitude of these hazards may have been underestimated when the sites were built. However, what people may all too quickly forget is the infinite complexity of the real-time management of a nuclear emergency on this scale, which required an enormous amount of preparation and technical expertise. Fortunately, IRSN was able to rise to the challenge. Urgent action was needed on several fronts simultaneously, even a long way from the disaster, including: anticipating the way the situation was likely to develop at the damaged site and beyond, based on fragmentary and often contradictory information; briefing public decision-makers and the media, answering their many questions, and even providing data to be disseminated directly over the Internet to the general public, particularly the French community in Japan, in partnership with the embassy; looking after the hundreds of people who were concerned about possible contamination due to their presence in the region affected by the radioactive releases; and addressing the operational concerns of French companies based in Japan or importing products from Japan, which were worried about the potential problem of managing contamination. It is essential to keep a record of how the disaster was managed, and this timeline therefore details the sequence of the main actions taken by IRSN during the emergency and provides some key facts and figures.

IRSN actions

Other events

→ 11:00
(French time)

IRSN's Emergency Response Center activated.

→ 12:50

First IRSN update on the situation. Decisions:

- CTC readied for action and IRSN mobilized;
- General Command Post set up;
- earthquake fact sheet prepared.

→ 11:52

First conference call with Météo France

(which had been alerted by the IAEA), the Department of Civil Defense and Emergency Preparedness of the Interior Ministry, and ASN.

→ 17:39

IRSN update on the information available. In addition:

- numerous media enquiries addressed to IRSN;
- bulletin for ministerial offices prepared.

→ 20:00

First IRSN bulletin sent to ministerial offices:

- significant risk of core meltdown;
- fact sheets issued on Japanese nuclear facilities and on the earthquake.



→ 7:41 (french time)

A tsunami triggered 14-meter waves. The emergency generators of the Fukushima-Daiichi nuclear power plant were flooded and the water intakes used for cooling the reactor were damaged.

→ 15:30

Situation still confused.

First actions to protect the population around the power plant (unconfirmed information: 3 km evacuation zone, 10 km shelter zone).



→ 18:00

First ASN press release announcing the accident.

→ 20:36

TEPCO announced a planned release of steam. (reactor 1)

→ 20:45

First IAEA message.

→ 22:31

AFP dispatch:

evacuation order for residents within 10 km radius of Fukushima-Daiichi (according to an ASN press release).

Radioactivity eight times higher than normal levels on the site, then announcement of radioactivity 1,000 times higher than normal levels on the site (AFP).

“This was a completely new situation. We were facing an unprecedented crisis, as the technology [boiling water reactors] was relatively unknown in France, and information was coming in from various sources and not in real time. And efforts weren't limited to the Emergency Response Center (CTC). Many IRSN colleagues volunteered their skills to analyze the situation.”

MARTIAL JOREL, Director of the Emergency Response Center

“The Fukushima disaster far exceeded any emergency previously encountered. The Emergency Response Center was quickly reorganized, with the arrival of a group of engineers with spoken and written Japanese skills. A health impact unit and an environmental impact unit were also set up to respond to the avalanche of questions that were rolling in.”

ÉRIC COGEZ, emergency situation and emergency response organization expert at IRSN, responsible for ensuring the smooth operation of the Emergency Response Center.

“The need to assess the radiological impact of Fukushima across vast distances rapidly became clear, even though the operational tools the Emergency Response Center uses are designed for calculations over short distances of around 50 to 80 km. We therefore interfaced research and development tools with available meteorological data for Japan. So, as of the first weekend, we were able to estimate the trajectory and impact of a possible radioactive plume over Japan by relying on the Emergency Response Center (CTC) release assumptions to calculate fallout and doses.”

DAMIEN DIDIER, expert at IRSN

→ 11:12

First release calculations based on the assumption that containment had been compromised.

Evaluation sent to ASN.

→ 12:00

First exceptional meeting of the Council of Ministers to discuss the emergency.

→ 13:00

ASN press briefing with Agnès Buzyn, Chairperson, IRSN Board of Directors.

Participation of Jacques Repussard in an emergency meeting at the French Ministry of Foreign Affairs.

It was agreed that an IRSN radiation protection expert would accompany the French civil security delegation heading for Japan and provide technical support to the French embassy.

→ 16:00

Meeting of nuclear stakeholders supporting the Ecology and Industry Ministers.

→ 12:49

Bulletin to the ministerial offices

Reactor 1 no longer appeared to be under control, and reactor 2 had not been stabilized. In this context, IRSN stepped up vigilance with its air monitoring networks.

The results of these measurements would be published on IRSN's website.

→ 9:00

Bulletin to the ministerial offices

Current situation based on information relayed by the international media, statements by the operator TEPCO and the Japanese safety authority (NISA) as well as contact with its German (GRS) and American (NRC) counterparts.

The French Prime Minister's office alerted by Agnès Buzyn about the gravity of the situation.

→ 1:18

Evacuation

3 km radius around Fukushima 2 (AFP).

→ 1:55

TEPCO announced that it had released radioactive steam (AFP).

→ 6:25

High probability of a meltdown in progress in reactor 1 at Fukushima-Daiichi (AFP).

→ 7:36

Explosion at the top of reactor building 1 at Fukushima-Daiichi.



→ 15 h

Evacuation

20 km around the Fukushima-Daiichi plant, and 10 km around Fukushima-Daini (AFP).

→ 12:20

Injection of borated seawater into reactor 1.



INTERVIEW WITH...

AGNÈS BUZYN,
Chairperson, IRSN
Board of Directors

“Given the intense media interest, our aims were to provide information that everyone could understand, and to maintain public confidence. We prepared each interview with the CTC managers to make sure that we presented the most up-to-date information. This would have been an almost impossible task if I hadn't been stationed permanently at the CTC during the first couple of weeks of the crisis. As it was, I was able to supervise the sequence of events and prioritize the risks. Another key aspect for us was to ensure that all the information from those involved was consistent, and we kept a close eye on this at our press conferences with ASN. Last but not least, because of my previous experience as a doctor, I was accustomed to talking about potentially serious and uncertain situations, and I used the same kind of language.”



INTERVIEW WITH... MICHEL BRIÈRE, Deputy Director General, in charge of coordinating the mobilization of IRSN during the accident

“The magnitude of the earthquake and tsunami that struck Japan led, from day one, to the mobilization of French government emergency response groups in support of the French expatriate community, and to the civil security efforts of the Japanese authorities. As soon as it became apparent that this disaster was going to be a nuclear crisis, IRSN became closely involved in this mobilization. In view of the seriousness of the events, we very quickly activated the Emergency Response Center. With requests coming from all sides, we implemented daily electronic bulletins, summarizing our analysis of the status of the Japanese nuclear power plants and the consequences for the population and the environment. The IRSN Chairperson and Director General also participated in the daily meetings organized by the Secretary General of the Presidency and the Prime Minister's Chief of Staff, meetings of the Foreign Ministry's emergency response center, and those of the interministerial emergency response committee, chaired by the Secretary General for Defense and National Security. The analyses produced by the Institute were therefore passed on to the highest authorities of the State, practically in real time, to help them in the decision-making process.”



SUNDAY, MARCH 13, 2011

→ 18:33

Bulletin to the ministerial offices

The situation in reactor 1 could be brought under control again if the cooling operations underway proved effective. There had been releases into the environment as a result of core degradation, and these looked set to continue. No usable environmental radioactivity measurement data was currently available.



→ 20:00

First online update on the accident posted on the IRSN website.

→ 2:35

First long-distance calculations

(on a regional scale) of the pattern of radiological impact based on the first release estimate.

→ 7h

Online update:

- significant releases;
- downwind area extending over large distance.

→ 16:00

IRSN information notice

Sea water injected to cool the reactors in the absence of any external cooling source. TEPCO had to initiate a procedure to vent steam from containments of reactors 1, 2 and 3 at 08:00 (local time).

“IRSN experts supported us by explaining the events we had to deal with in language we could understand. Their technical advice, supplemented by the expertise of the embassy's nuclear advisor from the CEA, guided me in making difficult decisions. In particular, these specialists prepared a daily information bulletin, which was published on the embassy's website, for the French community in Tokyo. We were the only embassy to provide such complete and accurate information. I also held press briefings and meetings with the French community at the embassy twice a day with these experts.”

PHILIPPE FAURE, French Ambassador to Japan at the time of the accident

→ 19:00

Online update: substantial release (updated at 23:00).

- “IRSN fears substantial releases, simultaneously produced during the explosion at the top of reactor building 1.”
- At the same time, the evacuation measures implemented seemed commensurate with the risk.

→ 19:36

IRSN information notice:

IRSN thought that releases must have occurred already.

→ 18:00

First IRSN press briefing.

→ 18:00

Departure of Olivier ISNARD

for Japan with the civil security teams.

→ 0:40

Venting of the containment of reactor 3.

→ 7:06

Pumping in sea water is an act of desperation, according to American specialists (AFP).

→ 7:50

Risk of hydrogen explosion in reactor 3, according to Japanese sources (AFP).



→ 23:24

Reactor 3 no longer had any means of pumping in water (AFP).

→ 6:05

A partial meltdown in reactors 1 and 3 is possible, according to Japanese sources (AFP).

→ 17:00

French embassy advises its citizens to leave the Tokyo area.

→ 17:30

Ministers' press conference giving an update on the accident.

“IRSN supported the French civil security rescue mission sent to Japan. My primary task was to help the French embassy understand the situation and the challenges it posed, with help from IRSN's Emergency Response Center. This liaison was also useful for expatriates and companies. In particular, I made an effort to explain the events we were facing in a way people could readily understand. With this in mind, we published a daily information bulletin for the French community in Japan on the embassy's website. After a few days of atmospheric releases, we worked with the civil security dispatch group to conduct an assessment at the French high school in Tokyo to determine its ability to withstand further earthquakes and its current radiological status. This assessment enabled the site to be reopened.”

OLIVIER ISNARD, IRSN expert

IRSN actions

Other events

MONDAY, MARCH 14, 2011

→ 10:30

Second IRSN press briefing.



→ 8:30

Health impact unit of the CTC set up.

Preparation of an animated map of the drift of the radioactive plume, simulating environmental contamination.

→ 12:30

First alert from IRSN concerning the fuel storage pool of reactor 3.

→ 15:30

Joint statement by André-Claude Lacoste, ASN Chairman, and Agnès Buzyn, Chairperson, IRSN Board of Directors, concerning the commitment to publish online the results of measurements made in France.



→ 22:20

IRSN assessment of the impact expected in Tokyo.



→ 18:00

Participation of Jacques Repussard in an emergency meeting with the French Prime Minister, convened to review the situation.

“The situation is very serious: three nuclear reactor cores are damaged, and spent fuel storage pools have no cooling system.”

THIERRY CHARLES,
IRSN spokesperson

→ 3:00

Explosion at the top of reactor building 3.

→ 7:00

Concern about the rising temperature in the pools.

→ 7:56

Failure of the cooling system of reactor 2 (AFP).

→ 12:00

Core of reactor 2 reportedly uncovered.



→ 18:20

Fukushima-Daiichi reactors 1, 2 and 3 reached cold shutdown.

→ 22:10

Explosion in the torus of reactor 2.

→ 22:14

Fire in the fuel storage pool area of reactor 4.

The Japanese requested assistance from the NRC, the American safety authority, particularly regarding reactor cooling.

“The health impact unit mobilized eight full-time experts, assisted by 16 experts working in rotation, to respond to 1,300 requests received in just five weeks from general practitioners, occupational health physicians, the press, companies and the general public. They were especially busy when the contaminated air masses reached France.”

ALAIN RANNOU, radiation protection expert in the health impact unit



→ 10:00
Jacques Repussard attended an emergency meeting at the French President's official residence on how the situation was developing.

→ 10:30
Information notice: an explosion had occurred inside reactor building 2, damaging the condensation pool and compromising the reactor containment.

→ 11:00
Third IRSN press briefing.

→ 22:00
IRSN information notices – First environment report

- Uncertainty about water level in fuel storage pool 4.
- Calculation of releases and their impact.

IN CLOSE-UP MARINE CONTAMINATION

The marine environment suffered significant radioactive contamination. This was due to contaminated water from the plant being released directly to the sea until about April 8 and, to a lesser extent, to fallout from some of the radionuclides (e.g. cesium-137) released to the atmosphere between March 12 and 22.

→ 9:00

Update on the situation

The water in the fuel storage pool of reactor 4 was boiling, and the temperature in the pools of reactors 5 and 6 was slowly rising. Steam was visibly emerging from reactor 3.

→ 11:00
Jacques Repussard took part in an emergency meeting with the French Prime Minister.

→ 11:00
Fourth IRSN press briefing.

→ 15:30

Joint meeting of the French Parliamentary Office for the Evaluation of Scientific and Technological Choices (OPECST), and economic affairs and sustainable development committees of the National Assembly and the Senate on the crisis in Japan, attended by Agnès Buzyn and Jacques Repussard.



→ 16:47

First query from the Ministry of Health's Directorate General for Health (DGS) concerning the health strategy to be adopted in relation to French citizens living in or returning from Japan.

IRSN actions

Other events

→ 4:00
Press conference with the Japanese Prime Minister, who ordered people within a 30 km radius to take shelter.

→ 4:25
Fire in fuel storage pool 4 confirmed extinguished.

→ 4:27
 Evacuation of plant personnel from the site.

→ 10:00
 First update from the French embassy in Japan.

→ 13:46
 ASN rated the accident at level 6 on the INES scale (Le Monde.fr).

→ 16:00
 TEPCO considering using a helicopter to drop water on the fuel storage pool of reactor 4 (AFP).

→ 18:30
 Japanese TV broadcaster NHK confirmed increase in workers' dose limit (100 -> 250 mSv).

→ 21:45
Fire in the north-west of reactor building 4.

→ 19:15
 On the advice of IRSN, the civil security group withdrew towards the Misawa airbase (dose rate > 6 times the authorized limit).

“The demands placed on the environmental impact, health impact and communication units were on a totally different scale to what we had envisaged during exercises. We had to find translators to work into and from Japanese, redirect hundreds of calls from professionals and members of the general public to the three units, distribute various messages and documents, and also take care of the day-to-day needs of the teams at the Center, which included providing meals, booking taxis, and so on. The thing that I particularly remember from the crisis is providing support for everyone so that they could take all the necessary action.”

SOPHIE RAVENEL, responsible for organizing the environmental impact, health impact and communication units

IN CLOSE-UP ATMOSPHERIC CONTAMINATION

The series of decompressions and explosions resulted in the significant release of radionuclides to the atmosphere, such as iodine-131 and cesium-137. A few hours after the accident began, the Japanese authorities decided to evacuate 80,000 people within a 20 km radius of the site and ordered those living within a 20-30 km radius to stay indoors.



→ 19:30
 The NRC recommended a 80-mile (approx. 80 km) exclusion zone.

THURSDAY, MARCH 17, 2011

“ We responded to a whole range of different requests. For example, we helped a ship that had to repair an underwater telecommunications cable that was damaged in the earthquake, 120 km off Fukushima. We trained the crew in the radiological risks and assessed the situation. The monitoring system set up, which confirmed that there was no risk, and the hands-on support from IRSN during the operations at sea reassured the crew and enabled them to get on with their repair job. ”

JEAN-PIERRE VIDAL,
educational delegation

→ 6:00

Update on the situation

According to IRSN's calculations, the water in the fuel storage pools of reactors 3 and 4 was boiling. Radiation levels in the control rooms of reactors 1, 2 and 3 were very high, limiting workers' exposure time.

→ 11:00

Visit to IRSN by the Ministers of Ecology and Industry.



“ IRSN keeps us informed and we make this information public right away, in a transparent manner. ”

NATHALIE KOSCIUSKO-MORIZET,
Minister of Ecology, March 16, 2011,
at the National Assembly hearing.

→ 8:30

Jacques Repussard attended an emergency meeting at the French Ecology Ministry.

→ 11:30

Fifth IRSN press briefing with ministers.



→ 12:00

Jacques Repussard took part in an emergency meeting at the French President's official residence, chaired by the Secretary General.

→ 15:00

First meeting of the interministerial emergency response group (CIC).

IRSN participated in this CIC, which subsequently convened every day at 09:00.

“ IRSN took part in meetings of the interministerial emergency response group (CIC), which included representatives from the President's office and the Prime Minister's office, ministers involved in managing the impact of the Fukushima accident, nuclear stakeholders (EDF, CEA, Areva, etc.) and ASN. The CIC had three primary concerns: one, to help Japan; two, to protect French citizens; and three, to assess the impact of the accident in France, including the question of Japanese imports. IRSN provided technical expertise throughout the entire crisis, both to inform the CIC of the situation with regard to nuclear facilities and the impact of radioactive releases to the environment, and to provide technical input to the various authorities so that they could make decisions. For instance, IRSN suggested dividing Japan into zones in terms of agricultural contamination, enabling a strategy for checking Japanese imports to be devised. It was also on the basis of advice from IRSN that a strategy for checking air freight and then maritime freight was put in place. ”

JEAN-CHRISTOPHE GARIEL, talking about the participation of IRSN in the CIC

Helicopter dropped water on fuel storage pool 3

Concern about the rise in temperature in the pools.



90

responses to queries and formal requests:
**32 ASN, 6 DGS,
52 others (embassy,
ministries, companies).**

IRSN actions

Other events

MARCH 18-23, 2011

AFTER MARCH 23, 2011



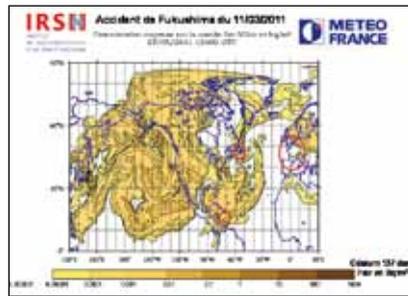
→ 03/18
Teleray radiation monitor set up in Tokyo.

→ 03/18
Participation of Jacques Repussard in a meeting at the French President's official residence, chaired by the Secretary General.

Exceptional meeting of the Council of Ministers, attended by Agnès Buzyn.

→ 03/19
Environmental impact unit set up and radiological monitoring in France stepped up.

Simulation of the dispersion of radioactive releases in the atmosphere worldwide posted online in the form of an animated map. IRSN was the first organization in the world to publish an initial estimate of the radioactive releases resulting from the accident.



→ 03/24
Participation of IRSN in a meeting of the French high committee for transparency and information on nuclear safety to review the situation.

5,000
press articles quoting
IRSN over the four weeks
following Fukushima.

“ To supplement the measurements obtained by our Teleray network, we had to urgently install new sensors in Tokyo and in the French overseas departments, regions and territories likely to be affected before France. Thanks to the use of the diplomatic pouch, the resources of the National Gendarmerie, the Ministry for Overseas France and the IRSN remote monitoring team, the French embassy in Tokyo was equipped with a Teleray radiation monitor from March 18 onwards. ”

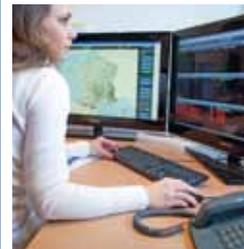
CHRISTOPHE DEBAYLE, head of IRSN's atmospheric monitoring and alert laboratory

→ 03/18
Water makeup in fuel storage pool 3 using fire-fighting systems.

→ 03/20
First addition of water to storage fuel pool 4.

→ 03/21
Night staffing of CTC reduced.

→ 03/24
First summary on environmental monitoring in France.



→ 03/30 - 04/01
Visit by French Minister of Ecology to Japan with a delegation, including Jacques Repussard.

“ We were called upon to get involved in various ways. For example, we provided the autonomous governments of French Polynesia and New Caledonia with information about the radiological situation in Japan, about the possible impact on imported products and about the safety measures to be taken. We also stepped up radiological monitoring throughout the two territories after the installation of the Teleray sensor in Noumea. ”

PATRICK BOUISSET, Laboratory for Environmental Study and Monitoring, set up in Tahiti

→ 03/29
Staffing of CTC reduced – night shifts stopped.

→ 04/04

First report on the impact of the accident on the marine environment posted online.



→ 04/06

First IRSN information bulletin for French citizens living in Japan.

→ 04/08

Radiological tests conducted on 144 French citizens returning from Japan.

→ 04/18

Participation of IRSN in a meeting of the three local information commissions in the Cotentin area (Flamanville, La Hague and La Manche).

•• The environmental impact unit was set up in Le Vésinet near Paris, where all the data obtained from the remote monitoring network across France and from sample processing is centralized. This network was quickly reinforced: sensors were sent to France's overseas departments, regions and territories and to the French embassy in Japan, and activated carbon filters were installed to trap iodine-131, a radioisotope that is a by-product of nuclear fission. We also increased sampling frequency by 50%, performing 1,200 additional analyses over a six-week period. ♥♥

NATHALIE CHAPTAL-GRADOZ, radiation protection expert in the environmental impact unit

→ 05/19 – 05/20

Plenary meeting of the European Nuclear Energy Forum (ENEF) in Prague: address by Jacques Repussard.

→ 06/07

G20
Ministerial seminar on the Fukushima accident.



→ 04/27

IRSN contacted the Inter-Company Expatriation Center (Cindex) to inform the heads of French companies in Japan of the situation.

50 information notices and monitoring bulletins for France

→ 04/08

Participation in a meeting of the local information commission on the major energy facilities at Tricastin

→ 04/12

Doses received from external irradiation due to fallout posted online (based on airborne measurements of the US DoE/NNSA).

1,365
requests for interviews over the four-week period following the accident.

→ 05/05 – 05/16

IRSN public hearings by the parliamentary committee on "nuclear safety, the scope of the nuclear industry and its future in the wake of the Fukushima accident".



→ 05/23

- Publication of a situation analysis report on radiological management of contaminated areas.
- Publication of a report entitled "Assessment on the 66th day of projected external doses for populations living in the north-west fallout zone of the Fukushima nuclear accident".

→ 06/06

Meeting on safety and radiation protection, chaired by the Minister of Ecology.

58
bulletins to ministerial offices and various authorities.

IN CLOSE-UP THE WWW.IRSN.FR WEBSITE

With IRSN in such heavy demand in the media, it was only natural for the public to turn to the Institute's website for further information. On March 23, the day the plume passed over France, 600,000 visits were registered in one day, compared to the normal figure of 35,000 per month. In order to provide public access to the monitoring results, an educational and teaching interface with the Criter database was developed, which enabled measurements of radioactivity from sensors in France and its overseas departments, regions and territories to be disseminated almost in real time.

IN CLOSE-UP SPECIFIC INFORMATION FOR THE CLIs AND THE ANCCLI

In accordance with the IRSN Charter on Openness to Society, the local information commissions (CLIs) were specifically informed of the situation by means of information notices. Two seminars were also organized in September and November with the French national association of local information commissions and committees (ANCCLI) to discuss the safety issues post-Fukushima and the complementary safety assessments (CSAs).

→ 06/07

Visit to the TOSQAN facility by the Minister of Ecology.

→ 06/20

AIEA: international ministerial conference on nuclear safety, at which the main thrusts of an action plan to be implemented by the AIEA (Vienna, Austria) were outlined.

→ 06/08

Participation of IRSN in a meeting of the Saclay CLI, near Paris.

→ 06/14

Meeting between the Japanese special advisor to the Prime Minister on the Fukushima crisis and its aftermath and the Minister of Ecology, also attended by Jacques Repussard.

→ 06/08

Participation of IRSN in the annual conference of the French Association of Engineers (AITF) in Marseille, southern France.

→ 06/09

Meeting of the Committee on the Safety of Nuclear Installations, CSNI (OECD/NEA).

→ 06/17

Selection of the FREE BIRD project by the French National Research Agency and the Japan Science and Technology Agency (JST) in the Flash Japan call for projects launched on June 17, 2011.



→ 06/28

First European Nuclear Safety Regulators Group (ENSREG) conference on nuclear safety (Brussels, Belgium).

→ 06/29

Initial conclusions of the progress report of the French Academy of Science's "Japan solidarity" working group, in which IRSN participates.

→ 09/06

Presentation to OECD-NEA-CSNI-GAMA: "After the Fukushima accident: which challenges for the NPP design and accident management? Some IRSN views from the French situation".

5

information bulletins for French residents in Japan.

→ 07/06

TSO meeting in Cologne on strengthening emergency response.



→ 12/10

Departure of IRSN experts for Japan to participate in environmental measurements around the Fukushima site.

→ 11/08

TSO's EUROSAFE Forum 2011

Workshop devoted to the Fukushima accident.



IN CLOSE-UP AUDIT OF THE SAFETY OF FRENCH FACILITIES

MARCH 23: French prime minister asks ASN to carry out a safety analysis of French nuclear facilities (CSAs).

MAY 5: ASN passes the request to Operators (EDF, Laue-Langevin Institute - ILL, Areva and CEA).

JUNE 1: the Operators submit a document to ASN, presenting the methodology to be used for the CSAs and the organization put in place.

END OF JUNE TO MID-OCTOBER: ASN inspectors accompanied by IRSN experts assess the 79 facilities.

JULY 6: examination of procedures by the Nuclear Safety Advisory Committees for reactors, facilities and laboratories, based on IRSN analysis.

JULY 19: ASN accepts the Operators' methodologies, subject to certain recommendations.

SEPTEMBER 15: ASN receives the Operators' CSA reports with their conclusions. ASN commissions IRSN to review the seven files.

SEPTEMBER 15 TO BEGINNING OF NOVEMBER: review of files by IRSN.

NOVEMBER 4: IRSN's expert report returned to ASN and members of the Nuclear Safety Advisory Committees.

NOVEMBER 8, 9 AND 10: the Nuclear Safety Advisory Committees analyze the CSA reports of the Operators, based on the IRSN review.

NOVEMBER 17: the IRSN report is published.

JANUARY 2012: the ASN report on the CSAs is submitted to the Prime Minister, and ASN prescriptions are addressed to the Operators.

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summaries of monitoring activities across France.

FOR MORE INFORMATION
WWW.IRSN.FR