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IAEA Activities in Response to the Fukushima Accident

Report by the Director General

Summary

The purpose of this document is to inform the Board of the activities carried out by the Agency in response to the very serious accident that occurred at the Fukushima Daiichi nuclear power plant following the major earthquake and devastating tsunami of 11 March 2011. The document covers activities undertaken by the Agency from the time of the activation of the IAEA Incident and Emergency Centre immediately after news was received of the earthquake on 11 March 2011.

IAEA Activities in Response to the Fukushima Accident

Report by the Director General

A. Background

1. On 11 March 2011 an earthquake of magnitude 9.0 struck off the east coast of Honshu, Japan. The Agency's on-call emergency response manager was notified of the earthquake and of the potential for damage at four nuclear power plants on the north-east coast of Japan — Fukushima Daiichi and Fukushima Daini of the Tokyo Electric Power Company (TEPCO), Onagawa (Tohoku Power Company) and Tokai (Japan Atomic Power Company) — as well as the potential for a tsunami.

2. The responsibility for response to a nuclear or radiological incident or emergency and for the protection of workers, the public, property and the environment rests with the operating organization at the level of the facility concerned, and with the affected State at the local, regional and national level.¹

3. At the same time, the Convention on Early Notification of a Nuclear Accident (Early Notification Convention) and the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency (Assistance Convention) are the primary legal instruments that establish an international framework to facilitate the exchange of information and the prompt provision of assistance in the event of a nuclear or radiological emergency, with the aim of mitigating any consequences. These are supplemented by a number of mechanisms and practical arrangements established by the Secretariat, the Agency's policy making organs and the meetings of competent authorities under the Early Notification and Assistance Conventions. Together, these instruments establish the IAEA emergency preparedness and response framework for nuclear and radiological incidents and emergencies². (See Annex 1.)

4. The Agency's central role under this framework includes: prompt notification of the emergency to Member States and international organizations; exchange and/or provision of official (authenticated

¹ As established in the applicable Agency safety standards, the practical goals of emergency response in a nuclear or radiological emergency are: to regain control of the situation; to prevent or mitigate consequences at the scene; to prevent the occurrence of deterministic health effects in workers and the public; to render first aid and to manage the treatment of radiation injuries; to prevent, to the extent practicable, the occurrence of stochastic health effects in the population; to prevent, to the extent practicable, the occurrence of non-radiological effects on individuals and among the population; to protect, to the extent practicable, property and the environment; to prepare, to the extent practicable, for the resumption of normal social and economic activity.

² This framework is implemented by the IAEA independent of whether or not the Early Notification and Assistance Conventions are invoked. In the Fukushima accident, the Assistance Convention was not invoked by Japan, while information was provided in accordance with Article 3 of the Early Notification Convention.

and verified)³ information to Member States and international organizations; coordination of international assistance, upon request of the State concerned; and provision and/or coordination of public information that is timely, accurate and appropriate. The Agency discharges its role through its Incident and Emergency System (IES) consisting of a 24-hour a day contact point and an operational focal point, the Incident and Emergency Centre (IEC)⁴. The internal arrangements for the implementation of the IES are defined in the IAEA's Response Plan for Incidents and Emergencies: Edition 2009 (REPLIE 2009)⁵.

5. The primary inter-agency coordination mechanism with regard to nuclear and radiological emergencies is the Inter-Agency Committee on Radiological and Nuclear Emergencies (IACRNE)⁶. The IACRNE was established following the Chernobyl accident and currently includes 15 international organizations⁷.

6. One of the primary roles of the IACRNE is the development and maintenance of the Joint Radiation Emergency Management Plan of the International Organizations (EPR-JPLAN 2010). The plan identifies the inter-agency framework for emergency preparedness and response, provides a mechanism for coordination and clarifies the roles and capabilities of the participating international organizations in preparing for and responding to nuclear and radiological incidents and emergencies.

7. As indicated, one of the Agency's central activities in response to a nuclear or radiological emergency is to provide official information to Member States and international organizations. The Agency provides a system for providing such information to State official contact points and international organizations through faxes and via the secure, password protected Emergency Notification and Assistance Conventions (ENAC) web site. The ENAC web site is accessible by official contact points designated by Member States (competent authorities under the Early Notification Convention and Assistance Convention and the Permanent Missions in Vienna) and relevant international organizations.

³ In this context, authentication is the process of confirming that the message received originates from an official contact point. Verification is the process of confirming that a message received is clear, consistent and understood.

⁴ The IEC operates in three operational modes: Normal/Ready Mode, Basic Response Mode and Full Response Mode. In Normal/Ready Mode, the IEC is the focal point for incoming messages and operates systems that serve as a 24-hour a day warning point through which incoming messages are received and acted on. The following on-call officers are available to facilitate and coordinate a timely and adequate response: emergency response manager, nuclear installation specialist, radiation safety specialist, nuclear security specialist, external event specialist and logistic support officer. Each event is classified according to the extent of its actual or potential radiological consequences. The response actions vary according to the actual or potential magnitude and seriousness of the event. The on-call emergency response manager determines whether the IEC activates into Basic Response Mode or Full Response Mode.

⁵ <http://oasis.iaea.org/oasis/oasis/iec/documents/nareap.pdf>

⁶ IACRNE, previously known as the Inter-Agency Committee on the Response to Nuclear Accidents (IACRNA), underwent a name change effective 1 January 2009 to better reflect its efforts in the context of all types of nuclear and radiological incidents and emergencies, not simply those that arise as a result of accidents. The Agency provides the Secretariat for IACRNE, pursuant to the Agency's own roles and responsibilities.

⁷ EC, EUROPOL, FAO, IAEA, ICAO, IMO, ICPO-INTERPOL, OECD/NEA, PAHO, UNEP, UN OCHA, UN OOSA, UNSCEAR, WHO and WMO.

B. Agency Activities

B.1. Director General's visit to Japan

8. The Director General visited Tokyo from 17 to 19 March for high level consultations: to express the solidarity and full support of the international community for Japan in dealing with the consequences of the earthquake and tsunami and to convey offers of assistance from more than a dozen countries; to ascertain whether there was any particular assistance the Agency could provide or coordinate (such as expert missions); to obtain information about the accident at first hand; and to stress the importance of the highest level of transparency and the timely provision by Japan to the Agency of official information, and the verification on request of its correct understanding by the Agency.

9. The Director General met the Japanese Prime Minister Naoto Kan, Foreign Minister Takeaki Matsumoto and the Minister of Economy, Trade and Industry, Banri Kaieda. He also had meetings with senior officials from the Tokyo Electric Power Company (TEPCO), the operator of the Fukushima nuclear power plants, and from the Nuclear and Industrial Safety Agency (NISA), and pledged the Agency's full support. Prime Minister Kan expressed his strong commitment to ensuring the highest level of transparency in information sharing and said that every effort would be made to improve the collection and provision to the international community, including the Agency, of accurate, objective information.

10. During the Director General's visit, the Agency's on-the-ground support to Japan became operational. It consisted of three main elements:

- First, a senior Agency official was deployed in Japan to coordinate the Agency's assistance activities and transmit offers of assistance from Member States to the Japanese authorities;
- Second, Agency liaison officers were deployed to Tokyo to facilitate and improve communication between the Agency and NISA;
- Third, the Agency's radiation monitoring team began transmitting measurements to Vienna, from various locations, including locations close to the Fukushima site.

B.2. Meeting of the Board of Governors

11. The Director General called a meeting of the Board of Governors on 21 March 2011. At this meeting, he reported to Member States on the results of his visit to Japan and stressed that the Agency was doing everything possible to provide accurate and factual information on the accident, and that "The Agency is working at full stretch, together with other countries and international organizations, to help Japan bring the crisis to an end and ensure the effects are mitigated as much as possible." It was noted that the Agency would continue to do everything in its power to help Japan to overcome the Fukushima crisis and deal effectively with the aftermath.

12. In his summary of the Board's discussion on the Director General's Report on his visit to Japan, the Chairman of the Board noted, *inter alia*, that, in addition to expressing solidarity with the people of Japan, several Board members had pledged their continued support to the Government and people of Japan. The Board also emphasized that the international community had a shared responsibility to ensure that the general public were provided accurate and reliable information of such emergencies to alleviate their concerns and that they must be kept aware of how the respective

national authorities were responding to those emergencies. The Board emphasized the importance of the universalization of the relevant international instruments in the field of nuclear safety, and reaffirmed the need for Member States' continuous commitment to the application of the highest standards of nuclear safety, to avoiding complacency, and to drawing and acting upon the lessons learned from the Fukushima accident. Following the meeting of the Board of Governors, the Chairman issued a Press Statement summarizing the Board's discussions⁸.

B.3. Activation and operation of the Incident and Emergency Centre

13. At 05:46 UTC (coordinated universal time) on 11 March 2011 an earthquake of magnitude 9.0 occurred off the east coast of Honshu, Japan. At 06:42 UTC the IES was activated following notification from the Agency's International Seismic Safety Centre (ISSC) of the earthquake and of the potential for damage at four nuclear power plants on the north-east coast of Japan⁹ as well as the potential for a tsunami. (See Annex II: Timeline of Events and IAEA Activities.)

14. At 07:21 UTC on 11 March 2011, the IEC established initial communication with the official contact point designated by Japan under the Early Notification Convention and the Assistance Convention, namely the: Ministry of Economy, Trade and Industry/Nuclear and Industrial Safety Agency (METI-NISA). The IEC verified information on the occurrence of the earthquake and the tsunami and commenced enquiries as to the safety of nuclear installations and Category I, II and III radioactive sources¹⁰ in the affected areas of Japan.

15. The IEC was promptly activated, starting operation in Full Response Mode¹¹. Regular IEC staff and other Agency staff members who have been trained in the IES were called into the IEC to fulfil functions in the organizational response structure (under REPLIE 2009) in accordance with their allocated responsibilities and training.

⁸ <http://www.iaea.org/newscenter/statements/misc/2011/parvez210311.html>

⁹ Fukushima Daiichi and Fukushima Daini of the Tokyo Electric Power Company (TEPCO), Onagawa (Tohoku Power Company) and Tokai I (Japan Atomic Power Company).

¹⁰ Radioactive material that is permanently sealed in a capsule or closely bonded and in a solid form and which is not exempt from regulatory control. This also includes any radioactive material released if the radioactive source is leaking or broken, but does not include material encapsulated for disposal, or nuclear material within the nuclear fuel cycles of research and power reactors. This definition is particular to the Code of Conduct on the Safety and Security of Radioactive Sources. See IAEA publication RS-G-1.9 for definitions of radioactive source categories.

¹¹ Once activated, the IEC continued in Full Response Mode by operating 3 × 8-hour per day shifts from 11 March to 14 March 2011. On 14 March 2011 a transition to 2 × 12-hour shifts was made. This 12-hour shift pattern remained in place until 3 May 2011, during which time the IEC utilized the expertise of staff from all Agency Departments: Nuclear Safety and Security, Nuclear Energy, Nuclear Sciences and Applications, Safeguards, Technical Cooperation and Management. Up to 15 May 2011, more than 150 professional staff and more than 50 general services staff throughout the Agency had volunteered for shift work and served in the IEC. This included a number of Japanese staff members who acted as accident State liaison officers and assisted with communications and by translating information from and into Japanese.

On 3 May 2011, the IEC made the transition from Full Response Mode to Basic Response Mode. In contrast to the initial phase of the event, when nuclear safety issues were addressed with priority, the emphasis shifted to aspects of radiological protection and radioactivity measurements, which was reflected in the Status Summary Reports (see para. 20).

In Basic Response Mode the IEC maintains a continuous service. The multidisciplinary profile of the specialists on duty is preserved in day shifts. Information exchange is carried out with the contact points as necessary. Assessments are made during office hours with the involvement of additional staff to facilitate timely response. However, the operational room is not staffed overnight. For night shifts, the service is performed by on-call staff, who have the responsibility to respond immediately to every incoming message. Preparations are in place to move rapidly back to Full Response Mode if necessary.

16. The IEC team worked with experts from the Joint FAO–IAEA Division of Nuclear Techniques in Food and Agriculture, from the World Health Organization (WHO) and from the World Meteorological Organization (WMO)¹² to support a coordinated international response. IEC team members had the following roles: technical team (with experts from nuclear safety, radiation protection and data management), emergency response manager, operations officer, screening officer, accident state liaison officers, international organizations and Member States liaison officers, public information officer, ENAC editor, IEC technician, communications officer, logistics support officer and data clerk. There were up to 20 staff members in each shift in the first few weeks following the accident.

17. An offer of assistance by the Agency (referred to formally as ‘the Agency’s good offices’) was sent to METI–NISA and the Permanent Mission of Japan in Vienna at 07:48 UTC on 11 March 2011. The first message¹³ for Member States and international organizations was published on the ENAC web site at 08:06 UTC on 11 March 2011 and the first press statement was published on the Agency’s web site (www.iaea.org) at 08:30 UTC on 11 March 2011. On 12 March 2011 the Agency again sent an offer of good offices to Japan.

18. The Agency has been in regular communication¹⁴ with the official Japanese contact points: METI-NISA; the Ministry of Education, Culture, Sports, Science and Technology (MEXT); the Ministry of Land, Infrastructure, Transport and Tourism (MLIT); and the Ministry of Foreign Affairs and the Permanent Mission of Japan to the Agency in Vienna. In addition to the official contact points, the Government of Japan assigned responsibilities for different aspects of the response to the earthquake and tsunami, and to the nuclear accident, to other governmental organizations, including the Ministry of Health, Labour and Welfare (MHLW). The Prime Minister’s Office hosts the Nuclear Emergency Response Headquarters, with which the IEC was also in contact.

19. At 08:56 UTC on 11 March 2011, the Agency received the first request for information about the ‘state of the safety of the power reactors in Japan’ from a Member State. Since that time, the Agency has responded to requests for information from official contact points in Member States and State Parties to the Early Notification Convention and the Assistance Convention. Requests received from organizations that are not officially nominated contact points and from members of the public (through the IAEA public web site) were also followed up by the relevant Agency technical division or the Division of Public Information.

20. At 20:02 UTC on 11 March 2011, the IEC published on the ENAC web site its first IEC Status Summary Report. In the first weeks following the accident these Status Summary Reports on conditions at the Fukushima plant and related radiological conditions were prepared twice a day. These reports are prepared on the basis of information received from the referenced official contact points in Japan. They were also sent by fax and/or email to all official contact points under the Early Notification Convention and the Assistance Convention in Member States, international organizations and the Permanent Missions in Vienna. The IEC reports and subsequent technical analysis constituted

¹² Following bilateral agreements on operational arrangements.

¹³ EMERCON message No.1 from METI–NISA. EMERCON is, according to ENATOM arrangements, an emergency conventions code word to be used in communicating a nuclear or radiological event to the Agency.

¹⁴ Under the terms of the Emergency Notification and Assistance Technical Operations Manual (EPR-ENATOM 2007).

the main basis for the Member State briefings and the briefings for the media that were initiated by the Agency on 14 March 2011.¹⁵

21. As of 6 May 2011, the frequency of the distribution of Status Summary Reports was reduced to three times a week. In between the distribution of these summaries the Agency continues to provide special updates as important information is received and verified.

22. In addition, the IEC also alerted its official contact points upon receipt of verified information regarding significant events that have occurred during the emergency (e.g. the explosions in Units 1 and 3, the leakage of water with high radioactivity levels to the sea and the information received on the preliminary evaluation of the accident by NISA).

23. Throughout the emergency, the Agency received offers of assistance to Japan from Member States¹⁶, international organizations and individuals. Copies of the official offers from Member States were published on the ENAC web site and provided to the Government of Japan.¹⁷

24. On 22 March 2011, the Agency received the first monitoring data through official channels from a Member State other than Japan. Since that time, monitoring data have been received from a total of 37 Member States¹⁸. The Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO) also provided data from its global network of radionuclide monitoring stations.

B.4. Fukushima Accident Coordination Team (FACT)

25. In the first days of the Fukushima Daiichi accident, it became evident that the reactors and the spent nuclear fuel in the spent fuel pools could be at severe risk. The Agency established a number of teams to evaluate key issues relating to the accident.

26. To ensure effective inter-departmental coordination, the Director General established the Fukushima Accident Coordination Team (FACT) on 15 March 2011. The FACT is headed by the Director General with the assistance of the Deputy Director General, Head of the Department of Nuclear Safety and Security. The FACT's purpose is to ensure senior level coordination of the Agency's response to the accident. The FACT also ensures the provision of accurate and timely information validated by Japan and other State authorities, to Member States, the news media and the general public, via oral briefings and FACT Update Briefs. (See Section B.8.3.)

Two teams were formed to support the FACT: the Fukushima Nuclear Safety Team (FNST) and the Fukushima Radiological Consequences Team (FRCT)¹⁹. In close coordination with IEC, these teams

¹⁵ The Agency continues to receive daily information updates from various official Japanese sources and publishes Status Summary Reports on the IAEA website.

¹⁶ Argentina, Australia, Belgium, Canada, China, Czech Republic, Finland, France, Germany, Hungary, India, Indonesia, Islamic Republic of Iran, Israel, Kazakhstan, Republic of Korea, Mexico, Pakistan, Russian Federation, Spain, Sweden and the United States of America; also the European Commission.

¹⁷ On 12 March 2011, the Agency sent a communication to all Member States registered under the Response and Assistance Network (RANET) asking about the current status of their capabilities regarding the provision of specialized assistance to Japan, should Japan request it.

¹⁸ Algeria, Austria, Belgium, Bulgaria, Canada, China, Czech Republic, Denmark, Finland, France, Georgia, Germany, Greece, Iceland, India, Islamic Republic of Iran, Ireland, Italy, Republic of Korea, Latvia, Lithuania, Luxembourg, Malaysia, Mexico, Philippines, Poland, Portugal, Romania, Russian Federation, Singapore, Slovakia, Spain, Sri Lanka, Sweden, Switzerland, Ukraine and the United States of America.

¹⁹ The FNST and FRCT are made up of Agency staff of the Departments of Nuclear Safety and Security, Nuclear Energy and Nuclear Sciences and Applications, with the assistance of external experts from Member States, including Argentina, Canada, France, Germany, Italy and the Republic of Korea.

were tasked with: coordinating and assembling the results of technical work performed Agency-wide; providing accurate information to inform the Director General's decision making; providing information for detailed briefings to Member States, international organizations, the media and the public; and informing the dialogue with Japan and other State authorities. Activities undertaken by the two teams are:

- **The Fukushima Nuclear Safety Team (FNST):** The FNST tasks include: focusing on the condition of the plant and its systems, and on the status of the fuel within the reactors and the spent fuel pools. Through analysis of the IEC Status Summary Reports and other information the FNST evaluates the status of plant safety functions and barriers, plant parameters and the progression of actions towards stable shutdown of the units. It also considers potential future developments, their probable consequences for the plant and possible radioactive releases. It provided information on radioactive releases to CTBTO²⁰ and to WMO's Regional Specialized Meteorological Centres (RSMCs) (see Section B.6) for use in atmospheric dispersion modelling. The FNST also evaluated the results of the Boiling Water Reactor expert's mission to Japan. (See Section B.7.1.)
- **The Fukushima Radiological Consequences Team (FRCT):** The FRCT tasks include: analysis of radiological monitoring data provided by Japan; analysis of pathways relevant for public exposure; analysis of trends in environmental monitoring data; evaluation of issues relating to transportation and trade; and elaboration of possible further protective measures. The FRCT consolidated the data provided by Japan with the results of the IAEA Radiation Monitoring teams. (See Section B.7.1.)

Other senior staff with relevant experience and experts from Member States work in cooperation with the FNST, the FRCT and the IEC on subjects ranging from reactor engineering, fuel integrity, other safety assessment issues, radioactive waste treatment and radiation monitoring.

B.5. The Agency's Activities of the Agency's Laboratories

27. The Agency laboratories in Seibersdorf and Monaco are specialized in evaluating terrestrial and marine environmental samples. The laboratory in Seibersdorf focuses on the terrestrial environment and the laboratories in Monaco focus on the marine environment. From the very beginning of the incident at Fukushima, the laboratories were utilized to review the environmental data provided by the Japanese authorities. Contamination of the marine environment was monitored by TEPCO near-field at the discharge areas of the reactors and by MEXT at off-shore stations about 30 km east of the shore line. In addition, the Terrestrial Environment Laboratory in Seibersdorf received more than two hundred samples from Japan for independent analysis.

28. A significant amount of contaminated water used to cool the four reactors was released into the sea and this gave rise to concern for marine life as well as seafood for the population. The IAEA Marine Environment Laboratory in Monaco reviewed all information regarding the marine environment. Information and advice with regard to the potential for contamination and consumption of seafood were also provided to WHO.

29. The IAEA Marine Environment Laboratory in Monaco liaised with a number of centres to set up models to simulate the dispersion of radioactivity released into the Pacific. Simulation of the

²⁰ CTBTO communicated results of the atmospheric dispersion modelling to their Member States.

contamination dispersed in the Pacific was done by the French group SIROCCO from the University of Toulouse at the request of the IAEA Marine Environment Laboratory in Monaco.

30. The Agency's Terrestrial Environment Laboratory in Seibersdorf, provided information and methodological advice to laboratories from the ALMERA²¹ network. The Laboratory received, from 29 March to 6 May 2011, seven sets of samples taken in Japan during IAEA missions. Up to 16 May 2011, about one hundred of the samples had been analysed by high resolution gamma ray spectroscopy.

31. The Agency's Radiation Monitoring and Protection Services laboratories provide radiation protection services and advice to all IAEA staff travelling to Japan as well as to staff of WHO and FAO. The services comprise: individual and workplace monitoring; basic protective clothing and protective equipment; and briefings on the radiological conditions at the plant sites and in the areas of Fukushima and Tokyo.

B.6. Coordination of the inter-agency response to the accident

32. From the early days after the accident, the Director General has been in close contact with United Nations Secretary-General Ban Ki-Moon to ensure effective coordination among different international organizations. He has also consulted with the Director General of WHO, the Executive Secretary of CTBTO, the Director General of FAO and the Secretary General of WMO for effective coordination of activities.

33. In accordance with the Agency's responsibilities under the JPLAN, the Agency on 11 March 2011, through the IEC, promptly notified all international organizations and activated the JPLAN. The Agency initiated coordination of the inter-agency response to the Fukushima accident, with regard in particular to reaching a common understanding of the accident situation, and to coordinating public information.

34. On 15 March 2011, the first IACRNE coordination meeting was conducted. Since then the IEC has held regular video teleconferences of the IACRNE (eleven further video teleconferences to date) to brief relevant international organizations on the current situation, to exchange information among international organizations²², to consider and coordinate response activities to reach a common understanding of the situation and to inform through joint press releases and distribution of public information.

35. At these meetings commonly agreed activities were assigned to specific organizations. For some issues ad hoc task groups were established, for example on transport issues²³ and on dose assessment issues. Joint public statements²⁴ were prepared.

²¹ ALMERA: Analytical Laboratories for the Measurement of Environmental Radioactivity; a network representing at present 122 laboratories from 77 States: <http://www.iaea.org/nael/page.php?page=2244>.

²² Participants of the video conferences were EC, FAO, IMO, ICAO, OECD/NEA, PAHO, UNEP, UN OCHA, UNSCEAR, WHO and WMO. UNWTO and CTBTO participated as observers. In addition, the Permanent Mission of Japan attended the meetings at the IACRNE Secretary's invitation.

²³ The IACRNE facilitated the formation of a task group to address issues relating to transport and tourism that comprised representatives of the ACI, IAEA, IATA, ICAO, IMO, UNWTO, WHO, WMO and UN. The task group met on regular telephone conference calls, starting on 17 March 2011, and has continued to meet on a regular basis throughout the event. ICAO chaired the group, and WHO provided web based document sharing to facilitate collaboration.

²⁴ Joint press releases have been made by the group on several occasions, the first being on 18 March 2011, stating that there were no restrictions on travel to Japan. A further press release on 1 April 2011 responded to misleading press reports and sought to reassure the travelling public that concentrations of radioactive material were very low.

36. In cooperation with the International Air Transport Association (IATA) and International Civil Aviation Organization (ICAO) an industry guideline for aircraft decontamination was reviewed for accuracy. In cooperation with ICAO an exemption and associated guidelines were prepared for the transportation of people who may have been contaminated (internally or externally) with radioactive material. On 12 April 2011 the guidelines were adopted and incorporated, as an addendum, into the ICAO Technical Instructions for the Safe Transport of Dangerous Goods by Air, 2011–2012 Edition, bringing them into force internationally for air transport. In cooperation with the International Maritime Organization (IMO), maritime safety issues were reviewed and guidance was jointly prepared.

37. A delegation of major shipping lines met with the Agency and IMO on 4 May 2011 to discuss means of addressing the monitoring of containers at ports. Support has been provided to the shipping companies through the Agency's Denial of Shipment Network, and an extensive joint guidance document is being prepared by the task group.

38. On 26 March 2011, a questionnaire was sent to Member States requesting information regarding governmental decisions and recommendations made in relation to the Fukushima accident with regard to citizens in or going to Japan, food or goods coming from Japan and the screening of passengers and goods. The information provided by Member States was compiled by the OECD/NEA (as agreed within IACRNE) and published by the IEC on the ENAC web site.

39. Under the JPLAN, the IEC has practical bilateral cooperation arrangements with WMO. Under these arrangements, the WMO's RSMCs provide, upon request by the Agency, long range atmospheric dispersion products (projections) for actual or potential releases of radioactive material to the atmosphere. Their standard meteorological products include the trajectory of particles, deposition and integrated concentration of radioactive materials for up to 72 hours after the initial release and a joint statement of the RSMCs involved in the modelling. The products help the Agency to assess which Member States may be affected by a potential release.

40. At 09:39 UTC on 11 March 2011, the Agency made its first request to the RSMCs to run models for a potential radioactive release from the Fukushima Daiichi plant. Since that time, the Agency has worked with the RSMCs on a regular basis requesting them to run models and provide the products to the IEC. The results of the modelling of the lead RSMCs in the region (Tokyo, Beijing and Obninsk) have been compiled and published on the ENAC web site on a regular basis.

41. The Agency also requested the RSMC Montreal to provide results from a series of more detailed (finer resolution) atmospheric transport modelling runs for the local level and regional level around the Fukushima site, on the basis of the source term estimated by the IEC.

B.7. Agency technical missions to Japan

B.7.1. IAEA monitoring team missions

42. Between 18 March and 18 April 2011, the Agency sent four radiological monitoring teams to Japan to help validate the results of more extensive measurements made by the Japanese authorities. The four teams undertook measurements in the Fukushima region at a number of locations inside and outside the 20 km evacuation zone around the Fukushima plant. One team was also deployed in the general vicinity of Tokyo. The scope of the monitoring included dose rates and surface activity concentrations, as well as the collection of different samples and gamma spectra for selected locations from 20 km to around 80 km from the Fukushima plant, and in Tokyo and the surrounding area. A detailed technical report to include findings and recommendations is being prepared by the Agency. Based upon their measurement activities, the mission pointed out to the Japanese authorities the

importance of creating a ‘contamination map’ to consolidate all the measurements taken by Japan for the use of future mitigation and decontamination activities.

43. A boiling water reactor expert team was sent to Japan on 3 April 2011 and concluded its mission on 12 April 2011. The mission included meetings with several government offices, with the majority of the time dedicated to detailed, technical discussions with TEPCO and NISA. The team had a unique opportunity to communicate directly with those working to mitigate the conditions at the Daiichi and Daini plant sites and to gain a better understanding of the accident. As the first international expert team to visit the Daiichi site, the team visited the Integrated Emergency Management Headquarters in Tokyo, the Fukushima Daiichi Emergency Operations Centre and site facilities, and the Fukushima Daini Technical Support Centre and site facilities. Detailed insights into the accident and the status of the plants were provided and the team were given the full cooperation of the Japanese authorities and the plant operator (TEPCO). The mission proved valuable in helping to understand other information that had been provided to the Agency. The data and findings obtained by the team were used in preparing for the Agency International Fact-Finding Expert Mission to Japan as described in Section B.7.3.

44. Upon request from Japan, the Agency sent an expert on marine monitoring programmes from the IAEA Environmental Laboratories to Japan, from 31 March to 7 April 2011, to participate for two days in the monitoring being done from the research vessel MIRAI, and to observe and give advice on the collection of seawater about 30 km from the coast in the off-shore monitoring campaign. The marine monitoring process, coordinated by MEXT, was reviewed. The mission included seagoing investigations and laboratory visits as well as a briefing on the findings to all parties involved in the process and to the Ministry of Foreign Affairs (MOFA), MEXT and the Ministry of the Environment (MOE), as well as the Office of the Chief Cabinet Secretary.

B.7.2. Joint IAEA/FAO Food Safety Assessment Team Mission

45. A Joint IAEA/FAO Food Safety Assessment Team (FSAT) visited Japan from 26 to 31 March 2011. The team provided advice and assistance to the Japanese authorities, including local government authorities, on technical issues related to food safety and agricultural countermeasures, including sampling and analytical strategies and interpretation of monitoring data to ensure that reliable, continuous updates could be provided on the extent of food contamination in the affected areas. These data were used for the development of possible mitigation and remediation strategies to be shared with authorities at the local and national levels in Japan.

B.7.3. IAEA International Fact-Finding Expert Mission to Japan

46. Based upon an agreement between the Government of Japan and the Agency setting out the terms of reference, an Agency International Fact-Finding Expert Mission, comprising 18 experts from the Agency and Member States, visited Japan from 24 May to 2 June 2011. Under the leadership of Mr M. Weightman, the UK’s Chief Inspector of Nuclear Installations, the mission conducted fact-finding activities for a preliminary assessment of the accident (in particular at the Fukushima Daiichi nuclear power plant). The Mission also collected information on the Fukushima-Daini and Tokai-Daini nuclear power plant sites located in Fukushima Prefecture and in Ibaraki Prefecture, in order to make a preliminary assessment of the generic safety issues associated with the natural events and identify issues that needed further exploration or assessment based on IAEA safety standards.

47. The Mission received information on the progress reached to date on the Japanese assessment of the accident and discussed specific technical issues to develop an informed assessment for sharing with the international nuclear community.

48. The scope of the Mission focused on the following specific areas:

- External events of natural origin;
- Plant safety assessment and defence in depth;
- Plant response after an earthquake and tsunami;
- Severe accident management;
- Spent fuel management under severe facility degradation;
- Emergency preparedness and response; and
- Radiological consequences.

49. The participants included officials of the Government of Japan, governmental Advisory Committee members, representatives of licensees, and academic experts nominated by the Government of Japan, including participants from: the Prime Minister's Office; Ministry of Foreign Affairs (MOFA); NISA; Ministry of Education, Culture, Sports, Science and Technology (MEXT); Nuclear Safety Commission (NSC); Japan Nuclear Energy Safety Organization (JNES); Japan Atomic Energy Agency (JAEA); Tokyo Electric Power Company Limited (TEPCO); and Japan Atomic Power Company Limited (JAPC).

50. The report of the mission will be presented at the forthcoming Ministerial Conference from 20 to 24 June 2011 (see Section C).

B.8. IAEA briefings of Member States

B.8.1. Communication with competent authorities

51. The Agency's ENAC web site was actively used by Member States and international organizations. Official information and web site links received from contact points in Japan, other Member States and international organizations have been published by the IEC on this web site. To date, over 1100 documents have been published, with more than 950 messages received from Japan, 31 received from other Member States, 71 received from WMO and 101 originating at the Agency. Starting from 11 March 2011 and continuing up to date, the ENAC web site, which is restricted to a limited number of users at official emergency contact points, has had more than 9000 visits.

B.8.2. Oral briefings for Member States

52. The Agency provided a total of 19 oral briefings and presentations on the Fukushima accident for Permanent Missions in Vienna and official representatives²⁵.

53. The briefings for Member States covered: the status of Units 1–6 of the Fukushima Daiichi and Units 1–4 Daini plants; the status of the spent fuel cooling pools and the common spent fuel storage pool at the Fukushima Daiichi plant; and results of radiation monitoring — together with trends, findings and conclusions as to their significance — for foodstuffs, with information on current restrictions on the distribution and consumption of foodstuffs and drinking water, and for the marine environment.

²⁵ The briefings for Member States were held every day from 14 to 23 March, on 25, 28 and 30 March, on 1, 4, 12 and 19 April, and on 5 May 2011.

54. Presentations provided by the Agency included: a table showing the status of Units 1–6 and of the spent fuel cooling pools; atmospheric dispersion modelling; time integrated concentrations and total depositions of iodine-131, caesium-134 and caesium-137, the most significant radionuclides from a radiological perspective; radiation monitoring data on land and in the marine environment; and pictures obtained by satellite imagery. In addition background information was provided to help put technical data (such as doses, dose rates and action limits) into an everyday context that could be more easily understood by non-technical audiences. A presentation was also provided to explain the International Nuclear and Radiological Event Scale (INES)²⁶.

55. The Government of Japan and the Agency co-organized a side event during the 5th Review Meeting of the Convention on Nuclear Safety from 4 to 14 April 2011 on “the Fukushima Daiichi Accident and Initial Safety Measures Worldwide”.

B.8.3. Update Briefs for Agency web sites

56. A total of 25 written Update Briefs have been prepared and posted on the Agency’s web sites (www.govatom.iaea.org and www.iaea.org). The Update Briefs were posted daily — including on Saturdays and Sundays — from 14 March to 15 April 2011, and daily on working days from 18 April until 5 May 2011, and on 13 May 2011 to cover the period from 4 to 11 May 2011. The content covered: the status of Units 1–6 and the associated spent fuel cooling pools and the common spent fuel storage pool; radiation monitoring data for iodine-131, caesium-134 and caesium-137; results of radiation monitoring of foodstuffs and information on current restrictions on the distribution and consumption of foodstuffs and drinking water; and data on monitoring in the marine environment.

57. Tables were prepared for the Update Briefs, colour coded to show the Agency’s assessment of severe conditions (‘red’), concerns (‘yellow’) and no immediate concerns (‘green’) with regard to: core and fuel integrity; reactor pressure vessel and reactor containment system integrity; containment integrity; alternating current power; buildings; water level of the reactor pressure vessel; pressure of the reactor pressure vessel; containment pressure; water injection to the reactor pressure vessel; and status of spent fuel.

58. Since TEPCO Road Map announcement on 05 May 2011, the Update Briefs provided the status of Units 1–4 presented in more detailed tables in terms of the fundamental functions of the safety standards for achieving a safe state, namely: control of reactivity; residual heat removal; containment integrity; confining of radioactive material; and limiting effects of releases. The tables are also presented in terms of the Road Map’s goals and proposed measures for moving from the emergency response phase to a phase of planned and stabilizing actions.

B.9. Public information activities

59. From 11 March to 22 April 2011, the Division of Public Information maintained continuous emergency communications with the press and general public. Public information officers supported the Agency, fielding thousands of telephone calls from the media, providing detailed technical responses to hundreds of email queries from the media and drafting over 120 updates for the Agency’s public web site.

60. From 15 March 2011, the Division of Public Information arranged 16 press conferences. These press conferences were initially attended by over 150 journalists from major international news

²⁶ A simple scale, designed for promptly communicating to the public, in consistent terms, the safety significance of events at nuclear facilities. <http://www-ns.iaea.org/tech-areas/emergency/ines.asp>

agencies and broadcasters.²⁷ National media from 37 States attended the briefings, including staff of nine Japanese newspapers and television broadcasters. Information provided during the briefings was mentioned prominently in over 4000 articles published in Arabic, English, French, Italian, German, Japanese, Portuguese, Russian and Spanish. Following each of the briefings, audio and video packages were distributed to the media and were downloaded over 2500 times by registered journalists. A news conference and five media briefings were held during the Director General's visit to Tokyo from 17 to 19 March 2011. In addition, major interviews were given by the Director General²⁸, and some dozen further interviews were scheduled with senior staff of the Agency and international media.

61. The Agency began its response to the public's demand for information within minutes after the earthquake struck. A purpose-built emergency update web site (the AlertLog) was activated on 11 March 2011. In addition, over 260 updates read by 3.6 million visitors were delivered within six weeks. Traffic from Japan, the web site's second-largest national audience in this period, rose from a six-week average of 7000 visitors to over 540 000 visitors. Traffic to the Agency's social media web sites rose significantly. For instance, the updates on the Agency Facebook web site were viewed 7.7 million times, an increase from 270 000 views in a comparable time period. The PowerPoint presentations from the Agency's briefings, which were hosted on the Agency's social media web sites, were viewed over 500 000 times and downloaded 20 000 times. To handle the influx of thousands of telephone calls and emails, extended shifts were established and temporary support staff deployed.

C. IAEA Ministerial Conference on Nuclear Safety

62. On 28 March 2011, the Director General announced his intention to call a special IAEA Ministerial Conference on Nuclear Safety to discuss an initial assessment of the Fukushima accident, to consider the lessons that need to be learned, to help launch a process to enhance nuclear safety throughout the world and to consider ways to further strengthen the response to nuclear accidents and emergencies. The Ministerial Conference will be held from 20 to 24 June 2011 in Vienna.

63. The overall objective of the Conference is to draw on the lessons learned from the accident at the Fukushima Daiichi nuclear power plant in order to strengthen nuclear safety throughout the world. The specific objectives of the Conference are:

- to make a preliminary assessment of the Fukushima Daiichi nuclear power plant accident;
- to assess national, regional and international measures for emergency preparedness and response;
- to review emergency response capabilities in light of the Fukushima nuclear power plant accident, with a view to strengthening them;
- to discuss the safety implications and identify those areas of the global nuclear safety framework that may need to be reviewed with a view to strengthening them and to launch a process to that effect; and
- to identify lessons learned and possible future actions.

²⁷ Including Al Jazeera, BBC World News, CCTV and CNN.

²⁸ With the BBC, CNN, Le Monde, NHK (Japan) and the New York Times.

64. The Resident Representative of Brazil to the IAEA and Governor for Brazil, H.E. Antonio Guerreiro, was elected by Member States to be President of the Ministerial Conference. He is coordinating the consultations among Member States with regard to preparation of the draft Programme and the Annotated Agenda and the Ministerial Declaration to be adopted by the Conference.

LIST OF ABBREVIATIONS

ACI	Airport Council International
CTBTO	Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization
EC	European Commission
EUROPOL	European Police Office
FAO	Food and Agriculture Organization of the United Nations
IACRNE	Inter-Agency Committee on Radiological and Nuclear Emergencies
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
IEC	IAEA's Incident and Emergency Centre
IES	IAEA's Incident and Emergency System
EMERCON	Emergency Conventions; EMERCON is, according to ENATOM arrangements, an emergency conventions code word to be used in communicating a nuclear or radiological event to the Agency
ENAC	Emergency Notification and Assistance Convention web site
ENATOM	Emergency Notification and Assistance Technical Operations Manual
IMO	International Maritime Organization
ICPO-INTERPOL	International Criminal Police Organization-INTERPOL
METI-NISA	Ministry of Economy, Trade and Industry/Nuclear and Industrial Safety Agency of Japan
MEXT	Ministry of Education, Culture, Sports, Science and Technology of Japan
MLITT	Ministry of Land, Infrastructure, Transport and Tourism of Japan
OECD/NEA	Nuclear Energy Agency of the Organization for Economic Co-operation and Development
PAHO	Pan American Health Organization
RSMC	WMO's Regional Specialized Meteorological Centre

TEPCO	Tokyo Electric Power Company
UN OCHA	United Nations Office for the Co-ordination of Humanitarian Affairs
UN OOSA	United Nations Office for Outer Space Affairs
UNEP	United Nations Environment Programme
UNSCEAR	United Nations Scientific Committee on the Effects of Atomic Radiation
UNWTO	United Nations World Tourism Organization
WHO	World Health Organization
WMO	World Meteorological Organization

Annex I

ELEMENTS OF THE IAEA EMERGENCY PREPAREDNESS AND RESPONSE FRAMEWORK FOR NUCLEAR AND RADIOLOGICAL INCIDENTS AND EMERGENCIES

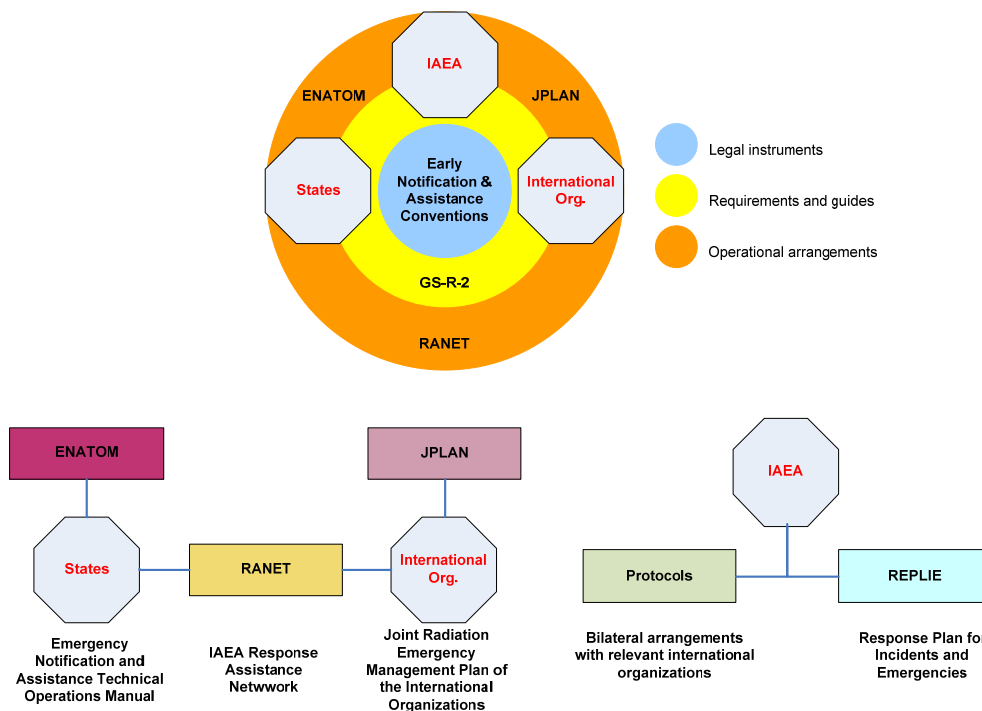


Fig. 1. The International Emergency Preparedness and Response framework.

The Emergency Notification and Assistance Technical Operations Manual — EPR-ENATOM

Facilitates the implementation of those Articles of the Early Notification and Assistance Conventions that are ‘operational’ in nature, such as the provisions on notification and information exchange. The role of the Agency in the context of a ‘General Emergency’ as identified in EPR-ENATOM includes: (i) informing of an initial notification by a notifying State; (ii) offering the IAEA’s good offices to the notifying State; (iii) requesting information from potentially affected States, as needed; and (iv) distributing further emergency information from the notifying State.

The Response and Assistance Network — EPR-RANET (2010)

Provides assistance upon receipt of a request and according to the Agency's role to: (i) evaluate the situation and deploy a fact finding Assistance Mission to the requesting State to further assess the emergency; (ii) recommend activation of specific RANET capabilities, if appropriate; (iii) ensure development of an Assistance Action Plan, in coordination with all parties; (iv) liaise with the requesting State to reach agreement on the Assistance Action; and (v) provide financial, organizational and logistics support, as appropriate.

The Joint Radiation Emergency Management Plan of the International Organizations — EPR-JPLAN 2010

Identifies the inter-agency framework for emergency preparedness and response and the various statutory and other legally assigned functions of the participating organizations. The role of the IAEA includes: (1) activating and coordinating the inter-agency emergency response; (2) informing forthwith and disseminating promptly substantive information; (3) providing advice or assistance (on request directly from a State or through an IGO), including: (i) offering the IAEA's good offices; (ii) to send a request for advice or assistance to relevant IGOs; (iii) to arrange for advice or assistance on potential radiological hazards; (iv) assess facility conditions and accident mitigation; (v) physical dosimetric measurement services; and (vi) radiological assessment and application of international standards, radiation protection support, personnel and equipment for operations in affected areas; and (vii) environmental monitoring and sampling programmes and assessment of long term impact.

IAEA's Response Plan for Incidents and Emergencies: Edition 2009 — REPLIE 2009 .

Describes the high level in-house arrangements of the Secretariat and in particular identifies the IEC as the Agency's focal point for responding to nuclear or radiological incidents and emergencies and sets out the operations of the Secretariat, the IEC's concept of operations in an emergency, as well as the Agency's and IEC's organization and responsibilities.

Annex II TIMELINE OF EVENTS AND IAEA ACTIVITIES

Date	Time [UTC]	Event/Activity
IEC operations		
03-11	05:46	An earthquake of magnitude 9.0 occurred off the east coast of Honshu, Japan.
03-11	06:42	The on-call external events specialist contacted the on-call emergency response manager (ERM) to inform the IEC of the occurrence of the earthquake and the potential effect on the plants
03-11	07:21	The ERM made first contact with NISA
03-11	07:48	The offer of the Agency's assistance sent to NISA and the Permanent Mission of Japan
03-11	08:06	First information for Member States and international organizations — EMERCON message no. 1 from METI-NISA — published on the ENAC web site
03-11	08:20	The IEC activated and declared Full Response Mode operations (staffed continuously)
03-11	08:25	The IEC distributed its first in-house email message
03-11	08:30	First press statement published on the AGENCY web site
03-11	08:45	First EMERCON message from NISA (ENAC web site) received – only the Onagawa plant mentioned
03-11	09:39	First IEC request to the WMO Regional Specialized Meteorological Centres (RSMCs) (lead: Tokyo, Beijing and Obninsk) for standard meteorological products for a potential radioactive release from the Fukushima Daiichi plant sent out
03-11	09:45	Second EMERCON message from NISA received; the Fukushima Daiichi and Onagawa plants mentioned
03-11	10:20	NISA press release published on the ENAC web site
03-11	11:00	The IEC decided to operate in 8 hour shifts
03-11	15:00	First answers to Member States and international organizations which had sent request for information
03-11	20:02	First IEC 'Status Summary Report' published on the ENAC web site and distributed to Member States
03-11	22:00	Updated status of Fukushima Daiichi published and distributed
03-12	09:43	Updated information on explosion in Unit 1 sent to all contact points
03-12	12:00	First updated satellite pictures from AGENCY Safeguards satellite imagery unit received
03-12	12:39	Second offer of assistance sent to METI Japan
03-12	14:17	Response and Assistance Network (RANET) members were contacted on availability of registered services
03-12	17:05	First atmospheric dispersion products published on the ENAC web site (subsequently at least daily)
03-12	19:40	Updated status report sent to all contact points (subsequently twice a day)
03-13	10:33	Reminder to all contact points that information is available on the ENAC web site
03-13	20:00	Updated information on Onagawa plant sent to all contact points
03-14	02:45	Confirmation of explosion at Unit 3 sent to all contact points
03-14		The IEC changes to 2 × 12h shifts to cover 24 hours
03-15		Information on high radiation levels outside Daiichi sent to all contact points
03-15		First video conference of the IACRNE members
03-15		Expert from the Austrian National Weather Service (provided through WMO) joined the IEC
03-15		FAO representative joined the IEC
03-15		Request received from Japan for the Agency's assistance (Note Verbale from the Permanent Mission of Japan)
03-16		The on-site and off-site radiological situation became part of the Status Summary Report for the first time
03-17		First special request for fine resolution atmospheric dispersion products sent to RSMC Montreal Status Summary Report expanded to cover situation at spent fuel pools
03-18		Liaison with AGENCY field team 1 started
03-20		Status Summary Report expanded to include radioactivity concentrations in food and water

Date	Time [UTC]	Event/Activity
03-21		Status Summary Report expanded to include deposition data
03-22		NEA compilation of governmental decisions published for the first time (and updated thereafter regularly)
03-23		Status Summary Report expanded to include isotopic concentrations in air, food, and seawater
03-24		Results of fine resolution atmospheric dispersion modeling around Fukushima site published on the ENAC web site and summary included in Status Summary Report
03-26		Questionnaire sent to Member States requesting information regarding governmental decisions and recommendations made in relation to the Fukushima accident with regard to citizens in or going to Japan, food or goods coming from Japan and the screening of passengers and goods; the information provided by Member States was compiled by the OECD/NEA
03-30		WHO representative joined the IEC for two weeks
04-05		The IEC reduced night shifts staff
04-14		The IEC agreed with the WMO RSMCs to request the meteorological products three times per week
04-22		The IEC reduced number of Status Summary Reports to only one per day
05-03		The IEC operations changed to Basic Response Mode (the IEC staffed during the day 12/7, the on-call officers ready to respond during the night 12/7)
05-09		The IEC reduced the number of Status Summary Reports to three times per week (Monday, Wednesday, Friday)
Assistance to Japan		
03-11		The offer of the Agency's assistance sent to NISA and the Permanent Mission of Japan
03-12		The offer of the Agency's assistance sent again to NISA and the Permanent Mission of Japan
03-12		The IEC sent a communication to all Member States registered as a member of the Response and Assistance Network (RANET); the communication asked registered Member States to advise the IEC of the current status of their capabilities regarding the provision of specialized assistance to Japan
03-15		The Government of Japan requested the Agency's assistance "through the dispatch to Japan of experts in the fields of environmental monitoring and effects of radiation on human health"
03-16		The IEC forwarded a request for assistance from the Government of Japan to contact points in the United States of America and France, for remotely controlled aerial vehicles, robots and remotely controlled ground vehicles for carrying equipment in the high dose rate areas
Missions to Japan		
03-17		The Director General's visit to Japan
03-18		First Agency monitoring team mission
04-03		Boiling Water Reactor Expert Team mission
04-18		Last of four Agency monitoring team missions
03-26		Joint Agency/FAO Food Safety Assessment Team Mission
03-31		Marine monitoring team mission
05-24		Agency International Fact Finding Expert Mission
Other Agency activities		
03-15		Fukushima Accident Coordination Team (FACT) established
03-15		Fukushima Nuclear Safety Team (FNST) established
03-15		Fukushima Radiological Consequences Team (FRCT) established
Coordination with international organizations		
03-15-	11:00	First IACRNE coordination meeting: EC, FAO, OECD/NEA, UNEP/OCHA, UNSCEAR, WHO, WMO
03-17	12:00	Second IACRNE coordination meeting: EC, FAO, IMO, ICAO, OECD/NEA, PAHO, UNEP/OCHA, UNSCEAR, WTO, WHO, WMO
03-21	12:00	Third IACRNE coordination meeting: EC, FAO, IMO, ICAO, OECD/NEA, PAHO, UNEP/OCHA, UNSCEAR, WHO, WMO
03-23	12:00	Fourth IACRNE coordination meeting: EC, FAO, IMO, ICAO, OECD/NEA, PAHO, UNEP/OCHA, UNSCEAR, WHO, WMO

Date	Time [UTC]	Event/Activity
03-25	12:00	Fifth IACRNE coordination meeting: FAO, IMO, ICAO, OECD/NEA, PAHO, UNEP/OCHA, UNSCEAR, WHO, WMO
03-29	12:00	Sixth IACRNE coordination meeting: EC, FAO, IMO, ICAO, OECD/NEA, PAHO, UNSCEAR, WHO, WMO
04-01	12:00	Seventh IACRNE coordination meeting: FAO, IMO, ICAO, OECD/NEA, PAHO, UNSCEAR, WHO, WMO; PM of Japan
04-07	12:00	Eight IACRNE coordination meeting: EC, FAO, IMO, ICAO, OECD/NEA, PAHO, UNSCEAR, WHO, WMO; PM of Japan
04-11	12:00	Ninth IACRNE coordination meeting: EC, FAO, IMO, ICAO, OECD/NEA, UNSCEAR, WHO; CTBTO, PM of Japan
04-21	12:00	Tenth IACRNE coordination meeting: FAO, IMO, ICAO, OECD/NEA, PAHO, UNSCEAR, WHO, WMO; CTBTO, PM of Japan
05-05	12:00	Eleventh IACRNE coordination meeting: FAO, IMO, ICAO, PAHO, UNSCEAR, WHO, WMO; CTBTO, PM of Japan
26-05	12:00	Twelfth coordination meeting: FAO, IMO, ICAO, PAHO, UNSCEAR, WHO, WMO; CTBTO, PM of Japan