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**NUCLEAR ENERGY AGENCY
COMMITTEE ON RADIATION PROTECTION AND PUBLIC HEALTH**

Patterns in Governmental Decisions and Recommendations (GDR) Information Exchange during the Fukushima NPP Accident

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PATTERNS IN GOVERNMENTAL DECISIONS AND RECOMMENDATIONS (GDR) INFORMATION EXCHANGE DURING THE FUKUSHIMA NPP ACCIDENT

While the NEA has no statutory role in responding to radiological and nuclear emergency situations, the NEA is a member of the Inter-Agency Committee on Radiological and Nuclear Emergencies [<http://www-ns.iaea.org/tech-areas/emergency/iacrna/login.asp>, also see Annex 1], and participated in co-ordinational discussions among the member organizations of this Committee from very early in the Fukushima accident situation. As part of its participation in IACRNE meetings, the NEA suggested that it could be valuable to have a list of governmental decisions and recommendations with respect to the accident situation, and on the 17th of March volunteered to collect such information for posting on the IAEA ENAC¹ (Emergency Notification and Assistance Convention) secure web site for internal use by all governments associated with the IAEA Incident and Emergency Centre (IEC). The IACRNE accepted this offer, and charged the NEA with the collection of such governmental decisions and recommendations. To facilitate the collection of this information, the NEA developed and sent out a short list of relevant questions framing the types of governmental decisions and recommendations being made, and asked governments to reply and to keep the NEA Secretariat informed of updates (see questions and summary of responses in Annex 2). In addition, governments were requested to provide the technical basis for their answers and some information about the monitoring of radioactivity in the environment and activation of a call centre for information of the public, if any. In total, 34 governmental organizations responded, including 8 non-OECD member countries, and several organizations from the GHSI² member countries. Information collection and updating of responses on the IAEA secure web site continued until the 21st of April, when it was suspended.

Brief summary of responses

There were 28 countries that recommended their citizens in Japan to follow Japanese government recommendations; however, 12 countries recommended their citizens to evacuate the 80 km zone from the Fukushima Dai-ichi NPS. No restrictions on flights to Japan were recommended (25 countries issued travel warnings) but some countries (13) advised to eliminate non-essential travel to Japan, and also to consider leaving Tokyo in the early days of the accident. Seven countries made airplanes available for flights from Japan to their home countries for their citizens wishing to leave Japan. On a voluntary basis, medical and radiological controls were performed for thyroid uptake and total body counting (7 countries). Special instructions on screening were given to custom officials by 6 countries for the monitoring of passengers, baggage, cargo and airplanes coming from Japan. However, people arriving from affected areas were recommended for screening at special facilities by two countries. 19 countries initiated monitoring of foodstuff from Japan based on EC recommendation (pre-defined EU levels were introduced for food imports in Europe, later adjusted to match those in Japan). In addition, all goods from Japan were required to pass through assigned customs points equipped with radiation control devices (especially for toys, clothes and shoes) by 2 countries. Stable iodine tablets were sent to the embassies in Japan, and distributed by 13 countries.

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1. The ENAC website and the Nuclear Event Web-based System (NEWS) were replaced by the Unified System for Information Exchange on Incidents and Emergencies (USIE) by the IAEA to unify and simplify information exchange during nuclear or radiological emergencies in September 2011.
 2. The Global Health Security Initiative (GHSI) is an informal network of Canada, France, Germany, Italy, Japan, Mexico, the United Kingdom, the United States and the EC to ensure exchange and co-ordination of practices within the health sector in confronting new threats and risks to global health posed by terrorism.

In addition, the intake of stable iodine tablets was recommended only on request of the Japanese or local authorities by 16 countries. Continuous routine monitoring programmes were initiated by 4 countries including gamma dose rate monitoring and air sampling. 8 countries introduced reinforced monitoring programmes (for measurement of air and rain water) by increasing the frequency of monitoring, however special monitoring of the radioactivity of airborne (7), rainwater (2), soils (2) and plants (3) were also introduced. Call centres for public were activated (18) by using mostly electronic platforms, governments extended their working hours (6), all information was made available on web sites (including FAQs with Q&As) (15) and social platforms (Twitter and Facebook) were used by 2 countries.

Patterns in Decisions and Recommendations

The governmental decisions and recommendations that were collected represent an incomplete snapshot in time of the decisions that were taken and the circumstances that drove governments to make them. As such, this simple list of decisions and recommendations is not a sufficient information base from which to draw any conclusions with respect to the value or the nature of the decisions taken. However, the large number of decisions and recommendations does represent an overview of the situation's context, and thus it is valid to identify a few patterns with regard to the subjects and objects of decisions, and to suggest mechanisms or approaches that could improve responses to an accident situation.

- **National Decision Consistency**

Many of the decisions taken and recommendations made were broadly consistent from country to country. This is true of recommendations regarding such things as advice to citizens in Japan, the use of KI (except in one case), and the screening of passengers and cargo returning from Japan. In particular, the advice to evacuate to 80 km quickly became a national consensus outside of Japan. It is not clear through which channels national decisions and recommendations became known by other countries (i.e. via direct bilateral discussions, via reviews of other countries' governmental web-sites or via the list of decisions collected by the NEA, etc.), or whether some national decisions influenced decisions by other countries. However it is clear that many countries very quickly made the similar content recommendations.

Observation: Given that many countries arrived at very similar recommendations, a review mechanism to more quickly and efficiently share such decisions and recommendations could be of value. This could be considered as a pathway to better foster international co-ordination.

- **Addressing Emerging Issues**

As is expected in any accident situation, issues that had not been fully discussed, or did not enjoy international consensus arose, and decisions and recommendations to address such issues seemed to result in less national consistency. This is in particular the case with regard to radiological monitoring criteria for products shipped from areas affected by the accident. There emerged no consistent approach to monitoring products, containers, ships, airplanes, etc. coming from potentially contaminated areas. The question of criteria for acceptance of food or feeding stuffs from affected areas in Japan also arose, and responses were not fully consistent across all participating countries. While more a matter of national circumstance and choice, the portion of incoming merchandise and food monitored at incoming ports, in this case only by air and sea, also showed some differences.

Observation: Governmental approaches to the monitoring protocols for incoming products seemed to be dimensioned as a function of expected volume and of existing procedures. However, different approaches seemed to be taken regarding the selection of radiological criteria for judging the acceptability of incoming products, and whether such products

would require certification from their source. This could be considered as an area that should enjoy more international consensus. Further, arrangements could be considered to facilitate the discussion of other topics that may emerge during “the next accident”, so that consensus approach, if appropriate, can be agreed.

- **Technical Assessment in Uncertain Circumstances**

A key technical issue that arose very quickly was the assessment of the worst credible accident. This assessment drove many governmental decisions regarding advice to their citizens in Japan, and regarding decisions concerning imports and travel. As in the early phase of any accident situation, information regarding the early status of the accident at Fukushima was very sparse both in Japan and internationally. This is to be expected in any accident situations. Early in the accident, several countries collaborated on their technical assessments (e.g. technical support organisations) of the potential evolution of the Fukushima accident through bilateral and multi-lateral approaches.

Observation: *The nature of “the next accident” has generally been something quite different than what had been expected. Technical assessments of the situation as it unfolds are thus essential. The structural planning of arrangements for conducting such technical assessments is perhaps a topic that should be discussed internationally.*

Annex 1

Composition of the Inter-Agency Committee on Radiological and Nuclear Emergencies (IACRNE)

Pursuant to the obligations placed on it by the Emergency Conventions, the IAEA regularly convenes Inter-Agency Committee meetings, whose purpose is to help assure that the roles, responsibilities and actions of member organisations are appropriately coordinated for preparing for and responding to nuclear and radiological emergencies. The IACRNE is chaired by the IAEA. The IAEA called routine meetings of the IACRNE during the Fukushima accident. Currently IACRNE members include the following organisations:

- European Commission (EC)
- European Police Office (EUROPOL)
- Food and Agriculture Organization of the UN (FAO)
- International Civil Aviation Organization (ICAO)
- International Atomic Energy Agency (IAEA)
- International Criminal Police Organization (INTERPOL)
- International Maritime Organization (IMO)
- OECD Nuclear Energy Agency (OECD/NEA)
- Pan American Health Organization (PAHO)
- United Nations Environment Programme (UNEP)
- United Nations Office for the Co-ordination of Humanitarian Affairs (OCHA)
- United Nations Office for Outer Space Affairs (OOSA)
- United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR)
- World Health Organization (WHO)
- World Meteorological Organization (WMO)

Annex 2

Governmental Decisions and Recommendations (GDR) Survey Questions and Main Findings

Q1: What has your government recommended with regard to your citizens living in or visiting Japan?

Responding countries: Australia, Austria, Belgium, Canada, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Islamic Republic of Iran, Ireland, Italy, Latvia, Lithuania, Luxembourg, New Zealand, Norway, Poland, Portugal, Republic of Korea, Romania, Serbia, Slovenia, Spain, Sweden, Switzerland, Turkey, the United Kingdom, the United States (33 countries) + EUROPOL

Very consistent responses: don't go if not necessary; evacuate to 80 km; follow Japanese instructions; leave Tokyo and go south if possible

Main common findings	Details
Evacuate from affected area (28)	<ul style="list-style-type: none"> - Citizens in Japan were not advised to leave or move to the south of Japan (4) - People within 80 km (12) or 100 km (1) zone from the Fukushima Dai-ichi NPP should leave the area - Citizens living in the affected areas should leave those areas (11), including Kanto area (Tokyo, Yokohama and North of Tokyo)(12) and Chubu area (1), in particular families with children (4) and pregnant women (2) - People within a radius of 250 km, including the Tokyo region, were recommended to stay indoors with closed windows and ventilation (1)
Travel warnings (25)	<ul style="list-style-type: none"> - Avoid all travel to Japan(6) - Advising against non-essential travel to Japan and avoid all travel to affected area (13) - Recommendation to avoid non-essential travel to north-east area in Japan including Kanto area (Tokyo-Yokohama) (8)
Flight support (7)	<ul style="list-style-type: none"> - For those people willing to leave Japan, airplanes were made available for flights from Japan to their home countries (7)
Follow the directions of the Japanese government (26)	<ul style="list-style-type: none"> - People decided to stay in Japan were recommended to follow the directions of the Japanese government and local authorities (26)
Health check (2)	<ul style="list-style-type: none"> - People returning home from Japan were not required to monitor for radioactivity. If requested, contact with local GP (2)
Iodine tablet (10)	<ul style="list-style-type: none"> - There is no current need for those returning from Japan or those in Japan outside the exclusion Zone to consider the use of KI pills. (2)

- KI pills were sent to the Embassy in Tokyo but preventive use are not recommended, use only in emergency case. (3)
 - KI pills were sent to the Embassy in Tokyo (or provided to people in Japan), intake of them on request of the authorities. (5)
- Foods (4)
- People living in Japan should not consume the food from the affected areas and should avoid buying the food at local market places. (1)
 - Follow the advice of the local authorities according to food and drink. (3)
- Governmental support (7)
- Show a daily information and FAQ on the official website. (4)
 - Special supporting staffs to advice on radiation-related issues were sent to the embassies in Japan. (2)
 - Special emergency phone lines were established. (2)

*Number in parenthesis indicates the number of countries responding

Q2: What has your government recommended with respect to the monitoring of passengers returning, by air, from Japan?

Responding countries: Austria, Belgium, Canada, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Islamic Republic of Iran, Ireland, Italy, Latvia, Lithuania, Luxemburg, the Netherlands, New Zealand, Norway, Poland, Portugal, Republic of Korea, Romania, Serbia, Slovakia, Spain, Sweden, Switzerland, Portugal, Turkey, the United Kingdom, the United States (33 countries)

Very consistent responses: programmes in place to advise travellers; travellers may request monitoring; mostly not monitoring all passengers

Main common findings	Details
No specific recommendation (11)	<ul style="list-style-type: none"> - There is no official statement on this issue at this time (3) - At present not recommended, but depending on the development of the situation, upon request, this recommendation may be changed (2) - No official statement to date, but contingency plans are being developed (1) - No specific recommendation because there are no direct flight from Japan (4)
Voluntary basis screening at airport (11)	<ul style="list-style-type: none"> - Voluntary basis of medical and radiological control will be performed, thyroid uptake and total body counting. (7) (Including 3 countries which has no direct flight from Japan) - There is no official recommendation, but if people wish, health check will be performed (5) - Voluntary basis of medical and radiological control will be performed for people who spend within 80 km from Fukushima NPPs (1)
Routine screening (10)	<ul style="list-style-type: none"> - Special instructions have been given to customs and all passengers, baggage, cargo and airplanes coming from Japan need to have screening at airport. (6) (including 1 country which has no direct flight from Japan) - Passengers from affected area of Japan are offered monitoring (3) - People arriving from affected area are recommended to have screening at special facilities (2) - All citizens already turned back from Japan and be monitored. (1)
Give information (3)	<ul style="list-style-type: none"> - A special phone number and an e-mail account are available for all people coming from Japan to ask for advice (1)

- Information and questionnaire available at official website (2)

Q3: What has your government recommended with respect to the importing of food or goods from Japan?

Responding countries: Austria, Belgium, Canada, Czech Republic, Cyprus, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Islamic Republic of Iran, Ireland, Italy, Latvia, Lithuania, Luxemburg, New Zealand, Norway, Poland, Republic of Korea, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Portugal, Turkey, the United Kingdom, the United States (32 countries)

Some variation: Some tested all incoming packages; some tested a fraction of incoming packages at random; some had programmes in place for testing in normal circumstances

For food and feeding stuffs

Main common findings	Details
Monitoring of food- and feeding stuffs from Japan based on EC recommendation (19)	<p>EC Recommendations</p> <ul style="list-style-type: none"> - Upon arrival in the EU, the competent authorities of the Border Inspection Posts (BIP) or of the consignment's Designated Point of Entry (DPE) will carry out document and identity checks on all food and feed consignments from Japan; - Physical checks, including laboratory analysis, will be carried out on at least 10% of the consignments of food or feed coming from 12 prefectures mentioned above. Physical checks will also be carried out on at least 20% of the consignments coming from the remaining 35 prefectures; - Pending the availability of the test results, products shall be kept under official control for a maximum of five working days. The consignments will be released when the importer will present to the custom authorities the favorable results of the official controls mentioned above; - Products that are found to exceed the maximum permitted levels shall not be placed on the market and will either be safely disposed of or returned to Japan.
Additional registration with EC recommendation (5)	<ul style="list-style-type: none"> - Sampling fishery products originated from Asia and the Pacific area and screening them. (2) - All foodstuffs from Japan are monitored. (2) - All foodstuffs produced after 11 March 2011 must be monitored. (2)
National registration (Not a member of EU) (7)	<ul style="list-style-type: none"> - Enhanced import controls on food and feeding stuffs from Japan, the monitoring on food has been implemented at every port (5) - Spot checks of imported food and foodstuffs (2)
Prohibit (2)	<ul style="list-style-type: none"> - Avoid the food from the area of the nuclear accident of about 100 km. (1)

- No restriction (2)
- Importing of goods from Japan will be potentially suspended. (1)
 - No food has been imported since the accident at the nuclear power plant. (2)

For goods (6)

- For goods imported from Japan additional radiological controls are not required (2)
- Random sampling tests on goods from Japan (1)
- All goods from Japan are required to pass through assigned customs points equipped with radiation monitoring devices and should be subjected to radiation controls. (especially toys, clothes and shoes) (2)
- The importing of goods from Japan will be potentially suspended for the items specified as the suspension of shipment (1)

Q4: What are your policies or plans with respect to KI distribution to nationals in Japan?

Responding countries: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Islamic Republic of Iran, Italy, Japan, Latvia, Lithuania, New Zealand, Norway, Portugal, Republic of Korea, Serbia, Sweden, Turkey, the United Kingdom, the United States (24 countries)

Very consistent responses: KI distributed to embassies; citizens can get KI at embassy; advised not to take KI unless instructed by the Japanese (or by their own government). Only one exception to this consistency.

Main common findings	Details
Distribution of KI for citizens (20)	<ul style="list-style-type: none"> - Iodine tablets were sent to the embassy in Japan, but it hasn't distributed to citizens (6) - Iodine tablets were sent to the embassy in Japan, and already distributed or made available (13) - Distributing KI to nationals in Japan with priority for children and pregnant or breast-feeding women (1)
How to take KI (17)	<ul style="list-style-type: none"> - The intake of the iodine tablets is recommended only on request of the Japanese or the local authorities. Follow the recommendation of them. (16) - A special guide on how to administer iodine tablet including special precautions for children, pregnant woman etc. is supplied. (1) - The Government has dispatched one health physicist to the embassy in Japan. (1) - Government recommended for people who are located in 250 km distance from Fukushima Daiichi to intake KI as a precaution. (2)
KI is not necessary (1)	<ul style="list-style-type: none"> - Strong advice against the preventative intake of KI tablets. (1)
For travelling people (2)	<ul style="list-style-type: none"> - For persons who must travel to Japan it can be relevant to have KI tablets for personal use with them in case of worsening of the situation or new releases of radioactivity from the NPPs (1) - Persons travelling to Japan should follow the advice of Japanese authorities. (2) - For travel to countries in areas around Japan it is not considered necessary with iodine tablets. (1)

Q5: Have you established any recommendations regarding screening of passengers, baggage and transport arriving from Japan in terms of;

- Screening of passengers and crew
- Screening of baggage and cargo
- Screening of cabins (on airplane or on ships)
- Screening of outer surfaces (of airplanes or of ships)

If you have established such recommendations, what are they, and what is their technical basis?

Responding countries: Australia, Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Islamic Republic of Iran, Italy, Latvia, Lithuania, New Zealand, Portugal, Republic of Korea, Serbia, Sweden, Switzerland, Turkey (21 countries)

Fairly consistent responses: screening of passengers not mandatory, but available on request (if travelled in 80 km zone in some cases); if direct flights from Japan, baggage checked

Countries which have direct flight from Japan (14)

Screening of passengers and crew	<ul style="list-style-type: none"> - No general recommendations by the government, at this point in time (4) - Total body and thyroid uptake measurements will be performed on a voluntary basis to passengers and crew (4) - All passengers and crew, upon their arrival from Japan, are screened at airport (4) - All crew are screened, but passengers aren't need (1) - Passengers and crew, upon their arrival from affected area of Japan, are screened (1)
Screening of baggage and cargo	<ul style="list-style-type: none"> - No general recommendations by the government, at this point in time (5) - The option of monitoring upon baggage arrival from Japan is provided on a voluntary basis. (1) - Radiation monitoring of all baggage and cargo from Japan are performed. (5) - Random sampling tests on goods from Japan are carried out. (1) - All cargo from Japan has to be monitored, but baggage is not recommended. (1)
Screening of cabins (on airplane or on ships)	<ul style="list-style-type: none"> - No general recommendations by the government. (4) - Radiation monitoring of airplane cabins is preformed (4), but not recommended for ships (1).
Screening of outer surfaces (of airplanes or of ships)	<ul style="list-style-type: none"> - No general recommendation by the government for airplane and ships arriving from Japan (6), but ships has been issued (1). - Monitoring for airplanes and ships has been implemented on a voluntary basis. (1)

- Monitoring for airplane and ships are recommended. (5)
Monitoring for airplane are recommended but not for ships. (1)
- The possibility of performing measurements for surface contamination is under consideration (for ships). (1)

Countries with no direct flight from Japan (7)

Airplane;

- Screening is not required (3), warning messages (1)
- Screening of passengers returning back from Japan is provided on a voluntary basis; depending on the request of passengers (4), and baggage is also screened on a voluntary basis. (3)

Ships;

- For sea travel it takes long time, therefore no actions in the next three weeks, (2)
screening for crew will be performed on a voluntary base. (1)

Additional Question 1: Monitoring of the radioactivity in the environment

Responding countries; Austria, Czech Republic, Finland, France, Hungary, Iceland, Islamic Republic of Iran, Ireland, Italy, Lithuania, New Zealand, Portugal, Romania, Serbia, Sweden, Switzerland, Greece, Norway, Turkey (19 countries) + EUROPOL

Very consistent responses: air sampling increased; results made public on web sites

Continue the routine monitoring program (4)

- Gamma dose rate monitoring, air samplers

The regular monitoring program continues and reinforced (8)

- The frequency of monitoring has been increased. (Air (4), rainwater (2), milk (1))
- Measurements of additional air filter (3), high altitude air samples (1).
- People screening voluntary (thyroid, whole body counting) (1)
- Measurement of food from Japan (1)

Special monitoring (9)

- Monitoring of the radioactivity of airborne (7), fallout (2), rainwater (2), soils (2) and plants (3). (Gamma dose rate and concentration of I^{131} , Cs^{137} and Ru)
- Monitoring of milk and water (3).
- Monitoring of goods and food from Japan(2)
- Passengers coming from Japan(voluntary) (2)

Additional Question 2: Activation of a call centre for information of the public

Responding countries; Austria, Belgium, Canada, Czech Republic, Denmark, Finland, France, Hungary, Iceland, Islamic Republic of Iran, Ireland, Italy, Latvia, Lithuania, New Zealand, Portugal, Greece, Norway, Serbia, Sweden, Turkey (21 countries)

Very consistent responses: Call centres activated; FAQ's put on web sites

- Call centre for public have been activated. (18)
- Government extended their working hours (6)
- All information were made available on web sites (15), use of social media (Twitter and Facebook) (2) including FAQs and Q&As (3)
- Frequent media coverage with interviews (6)

General Question: It is likely that, in the coming weeks, there will be discussion of the collective dose received by the Japanese population. I also feel that it is likely that there will be, in the press, discussion of the number of projected cancer deaths, using the collective dose and the 5%/Sv risk factor. Given this situation, I feel that it would be useful for the RP community represented by the CRPPH to consider how such claims could be addressed.

- Do you agree that we could address this issue?
- If so, what would be your response should you be asked about an estimate of projected deaths based on a collective dose estimate?

There was general agreement that the issue of collective dose could be misinterpreted, and that a consistent approach should be used to respond should estimates appear.