Comhshaol, Pobal agus Rialtas Áitiúil
Environment, Community and Local Government

CONVENTION ON NUCLEAR SAFETY:
2nd Extraordinary Meeting

National Report on actions, responses and new developments that have been initiated or influenced by the accident at the Fukushima Daiichi NPPs

IRELAND

DEPARTMENT OF ENVIRONMENT, COMMUNITY & LOCAL GOVERNMENT

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Introduction

Ireland has rejected the use of nuclear power for energy requirements and does not therefore have any nuclear installations, research reactors or fuel storage/recycling facilities. Ireland's policy priorities concentrate therefore on improving nuclear safety and radiological protection and on emergency preparedness. This involves close contact with regulatory authorities in other countries. Ireland also participates in a number of IAEA, NEA and EU committees and working groups on a range of issues relating to nuclear safety.

The Convention on Nuclear Safety (CNS) is important to Ireland. It recognises that nuclear safety is a matter for all of us. While specific safety provisions remain, in the first instance, a matter for each country, the potential transboundary impact of a nuclear accident means that nuclear safety in any one country is a matter of concern to all others, whether or not they have chosen to develop a nuclear energy industry of their own. The risks to human health and the environment that a nuclear accident carries, and the possible transboundary consequences mean that international cooperation is essential to provide assurance, including to the public, that the right measures are in place and that they are effectively implemented.

Transparency and effective communications are an essential part of nuclear safety and emergency response. One aspect of this to which Ireland attaches particular importance is effective communication between governments and the CNS encourages States to provide appropriate information to the Competent Authorities of other States in the vicinity of a nuclear installation for emergency planning and response. Ireland places great importance on the CNS review process and looks forward to working with all other Contracting Parties to ensure the CNS is effective and that the co-operation developed between Contracting Parties to date continues to improve.

As Ireland does not have any nuclear installations as defined in the Convention, the Topics 1 to 3 do not apply to Ireland. Also, as Ireland has no nuclear facility operators, this report reflects actions taken and planned by Government Departments and the Regulator only. This report provides information on Topics 4, 5 and 6.

Ireland's National Emergency Plan for Nuclear Accidents was established in the early 1990s and so the response to the Fukushima Nuclear Accident was the first live test of the plan since its inception.

Topic 4 – National Organizations

In Ireland, responsibility for nuclear policy is vested in the Minister for the Environment, Community and Local Government, while the roles of radiation safety regulator and technical advisor to the Government lie with the Radiological Protection Institute of Ireland (RPII).

The national response to a widespread radiological emergency or crisis involves mobilisation of the resources and expertise from a broad range of public authorities/agencies within the State. Ireland's response to the Fukushima Nuclear Accident was coordinated by the National Coordination Group for the National Emergency Plan for Nuclear Accidents (NEPNA), of which the Department of the Environment, Community and Local Government is the lead Government Department and the RPII is one of the key technical advisory agencies.

The roles assigned to the RPII under the NEPNA are:

- Maintain arrangements for early warning and operation of an on-call duty officer system and act as National Competent Authority for the EC and IAEA Early Notification and Assistance Conventions.
- Maintain the National Radiation Monitoring Network.
- Develop and maintain the capabilities necessary to make technical assessments of potential accidents and their radiological consequences for Ireland.
- Maintain a national laboratory for the measurement of levels of radioactivity in the environment.
- Liaise with other organisations to establish arrangements for the collection of environmental, foodstuffs and other samples and coordinate the collection of samples in an emergency.
- Provide for the certification of radioactivity levels in foodstuffs and other products in the event of an emergency.
- Assist the Government Information Service and the National Coordination Group in the preparation of information to be provided to the public and media.
- Provide advice to the National Coordination Group and Government Departments on possible protective actions to minimise radiation doses to the Irish population.

Other organisations that had significant roles in response to the Fukushima Nuclear Accident were the Department of Foreign Affairs (including the Irish Embassy in Tokyo), the Department of Agriculture, Food and Marine, the Food Safety Authority of Ireland, the Office of Emergency Planning (Department of Defence), Met Éireann (the national meteorological service), Customs & Excise, and the Health Service Executive.

The NEPNA sets out the roles and responsibilities for a number of Government Department and Agencies; the experience gained in responding to the Fukushima Nuclear Accident did identify a gap in the plan for arrangements for the control of potentially contaminated non-food imports. During the response to the emergency, this was addressed by collaboration with the Department of Enterprise, Trade and Innovation (DETI) and the National Consumer Agency. The links were initiated through the DETI representatives on the Government Task Force for Emergency Planning, a cross-Government forum for senior officials responsible for emergency planning from all Government Departments. No other gaps or significant changes to roles and responsibilities were identified.

Topic 5 – Emergency Preparedness and Response and Post-Accident Management (Off Site)

Review of Response to Fukushima

Ireland's response to the Fukushima Nuclear Accident was in the following areas: advice to Government and public on implications of the radioactive releases, provision of information to the media, advice to Irish citizens in Japan, advice to Irish importers of Japanese goods, answering public and media queries, testing of food/pharmaceutical goods imported from Japan, enhanced environmental monitoring to provide data on radiation levels and use of atmospheric dispersion models to predict plume transport and dispersion.

The Radiological Protection Institute of Ireland, as the main Government agency involved in the response to Fukushima, carried out a review of its response. This review was carried out in two stages: firstly, each response team (media/public communications, environmental monitoring, technical assessment, support services) carried out a sector-specific review shortly after its response stepped down, then at the end of 2011, a global review was carried out with the assistance of an independent expert on emergency management. This review was carried out in line with the recently developed national template for review of response to emergencies.

The template is based around the following topics[1]:

- How the additional demands on the responding agency during an emergency impacted on the day-to-day activities.
- Completion of generic emergency management functions.
- Mobilisation of personnel and resources.
- Task delegation and division of labour.
- Information management.
- Execution of decision making.
- Co-ordination within and between agencies.
- Working relationships between responding agencies.
- Communication with the public.
- Use of the National Emergency Co- ordination Centre (NECC).

The template prompts the responding agencies/reviewers to identify recommendations on what can be achieved in the short, medium and longer (three to five years) term.

The review of the RPII's response highlighted the following emergency management areas for improvement: internal communications between RPII teams, resource allocation and the need to train additional staff for response roles. In terms of specific technical areas, the team-specific reviews have highlighted the importance of high volume air particulate sampling and long-range atmospheric dispersion modelling in tracking plumes (and the need to improve Ireland's resilience in this area) and the need to ensure adequate numbers of staff have experience in interpretation of gamma spectra, aerosol sampling (particularly for iodine releases) and operation of the atmospheric dispersion models.

[1] See Appendix 1 for further detail on the topics covered by the review template.

Another key finding of the review was the importance of strong links between responding organisations and individual experts/officials; this area was seen to have worked well during the response and so it is a question of maintaining these links.

For 2012-13, the following follow-up actions are planned by RPII:

- Incorporate findings of the review in the RPII's response plan.
- Train all staff in the RPII for one of the designated response roles (coordination, external liaison, information management, technical assessment (including dispersion modelling) environmental measurement, media liaison, IT support, administrative support).
- Update technical assessment procedures to cover early phase when very little information is likely to be available from the accident state and to cover procedures for long-range dispersion modelling.
- Update procedures to reflect all of the new and updated international channels of information (including USIE, CTBTO network and WebECURIE – once it is launched).
- Review and strengthen emergency communications capability, including improving information provision via the RPII website.

Protection of Food and Agriculture

Given the distance from the nearest nuclear facility to Ireland (110 km) the most significant potential route of radiation exposure following a nuclear accident is via contaminated food. Following the Fukushima Nuclear Accident, the food and agriculture expert group was reconvened and refresher training provided by the RPII on radiation issues. The expert group was originally formed to customise, for Irish conditions, a handbook on protective actions for agricultural and food production systems following a nuclear accident and includes experts from the following areas:

- Dairy Sector (Department of Agriculture, Food and Marine)
- Horticulture & Plant Health (Department of Agriculture, Food and Marine)
- Animal feed and crops (Department of Agriculture, Food and Marine)
- Meat Sector/Veterinary Science (Department of Agriculture, Food and Marine)
- Animal By Products (Department of Agriculture, Food and Marine)
- Food Safety (Department of Agriculture, Food and Marine)
- Sea Fisheries Protection Authority
- Food Safety Authority of Ireland
- Environmental Protection Agency

Information to the public on radiation levels

The aims of the monitoring carried out by the RPII after the Fukushima Nuclear Accident were to assess the levels of radioactivity from the accident reaching Ireland and to provide data on which to base the RPII's advice to the Government and public. In addition to publishing the monitoring data on the RPII website during the response the event, the data collected was collated and published in a comprehensive report[2] to coincide with the first anniversary of the Great East Japan Earthquake and Tsunamis.

[2] Report available on http://www.rpii.ie/getdoc/d6fe2631-7e63-4691-9929-1726839d8f62/Assessment-of-the-Impact-on-Ireland-of-the-2011-Fu.aspx

Topic 6 – International Cooperation

ENSREG Nuclear Stress Tests

Following the events at Fukushima, the European Council requested a review of safety at all European nuclear power plants. The European Commission, supported by the European Nuclear Safety Regulatory Group (ENSREG) produced criteria and a plan for this work, now known as the "stress tests". All EU Member States with operational nuclear power plants (NPP) plus Lithuania (all NPPs shutdown), Switzerland, and Ukraine have participated in this process.

The process required plant operators to re-assess the safety of a nuclear plant if subjected to the type of extreme events that occurred at Fukushima (and to report on the work). Specifically, the process considered three topics: (i) external initiating events (such as earthquake, tsunami, flooding or severe weather), (ii) the impact of losing safety functions (i.e., loss of electrical power or the ability to cool the reactor cool core and fuel ponds), and (iii) severe accident management (i.e., how the nuclear plant systems and operators protect against and manage severe accidents). The country's nuclear regulatory organisation then reviewed the operators' reports and commented on the findings, identifying areas for further work and/or plant improvements. The national regulatory organisations submitted a summary of all this work in the form of a 'national report' to the EC.

Each of the 17 national reports then underwent peer review. The review process was completed in two stages. First, all of the national reports underwent a 'Topical Review'. For this task three review teams were established to look at one of the three topics identified above, with the intention of reviewing the reports and identifying differences/commonalities in approaches in the 17 countries. Following the topical reviews, each country with a nuclear programme underwent a country review where the national report was considered in its entirety.

While Ireland has no nuclear facilities and so did not undertake stress tests, the Irish regulator (RPII) did nominate one of its experts to participate in the peer review process for the severe accident management topic and for two of the country reviews.

As part of the public engagement on the stress tests, a public meeting was organised in Brussels in January. This seminar discussed the stress test process, with a further meeting planned for later in the year to present the findings of the stress tests. At the January meeting, the Head of Ireland's regulatory body acted as the facilitator for the question and answer session on the peer review process.

Cooperation in the framework of international working groups

The legislative Act underpinning the RPII's role sets out a number of particular functions for RPII that provide for a strong international dimension to its work. These include monitoring developments internationally, exchanging information, providing assistance, cooperating, and representing Ireland across the range of activities within RPII's remit. At present RPII staff routinely attend meetings of about 20 standing committees under the auspices of the EU, International Atomic Energy Agency (IAEA) and OECD Nuclear Energy Agency (NEA). In addition, RPII participates on a further 20 - 25 committees/groups that are more focussed on operational issues directly linked to RPII's remit. A number of these are based on bi-lateral agreements (e.g. with UK, France and Norway) while others are topic focussed.

In relation to international activities with a Fukushima follow-up dimension, the RPII is currently actively involved in:

- NEA Committee on Radiation Protection and Public Health (RPII chair)
- NEA Working Party on Nuclear Emergency Matters (RPII deputy chair)
- NEA Expert Group on the Radiological Protection Aspects of the Fukushima Accident (RPII chair)
- NEA Working Group on Public Communication of Nuclear Regulatory Organisations
- NEA Fukushima Steering Committee
- Heads of European Radiation Protection Competent Authorities (HERCA) Working Group on Emergencies
- European Nuclear Safety Regulators Group (ENSREG)

Hosting International Peer Review:

One of the requirements of the European Council Directive (Directive 2009/71/EURATOM) establishing a Community framework for the safety of nuclear installations is for Member States to arrange for self-assessments of their national framework and competent regulatory authorities and invite an international peer review team to assess these aspects, at least once every ten years. Prior to the Fukushima Nuclear Accident, Ireland requested an international peer review of its regulatory framework for 2015, with plans to undertake the self assessment in 2014, and a follow-up peer review visit in 2018. The reviews will include emergency preparedness and response (regulatory aspects).

Appendix 1: Guidance Note for Ireland's Response Review

(from Template for Reviews of National Level Response to Emergencies)

1. DEMANDS PLACED ON THE DEPARTMENT/AGENCY

- Identify and document the demands placed on the day to day running of the Department/Agency as result of the emergency.
- Identify and document the demands placed on the Department/Agency as result of the need to provide a response to the emergency.

2. COMPLETION OF GENERIC EMERGENCY MANAGEMENT FUNCTIONS

- Review the efficiency and effectiveness of generic emergency response functions (such as warnings, evacuations, sheltering, emergency medical care, search and rescue, protection of property, mobilisation of emergency personnel and resources, assessing the damage, coordinating emergency management activities, and restoring essential services).

In order to answer this question the Department/Agency could ask/answer the following questions:

- Was the need for the function recognised early?
- Was the function carried out without too many problems?
- Were the recipients satisfied with the functions provided?

3. MOBILISATION OF PERSONNEL AND RESOURCES

The Department/Agency should review the effectiveness with which personnel and resources were mobilised.

- Did they mobilise personnel and resources in an effective manner (in this context effective means the desired and intended result was produced)?
- Did the Department/Agency identify the appropriate personnel and resources?
- Were these resources located quickly and brought to bear correctly?
- Were they appropriate to the problems generated by the emergency?

4. TASK DELEGATION AND DIVISION OF LABOUR

- What tasks "usually" undertaken by the Department/Agency during an emergency response were executed as part of the response to this emergency?
- Were these tasks carried out relatively quickly and with few problems?
- What "new/novel" tasks did the Department/Agency undertake during the response to this emergency? Were these tasks carried out relatively quickly and with few problems?

5. INFORMATION MANAGEMENT

- When reviewing the information management element of the response the Department/Agency should consider the means of communication (how well the technology worked) and the content of what was communicated.
- Five streams of information flow should be examined:

(i) Within the Department/Agency and with the agencies under its remit;
(ii) Between Departments and other organisations involved in the response;
(iii) From the public to the Department/Agency;
(iv) From the Department/Agency to the public;
(v) The international dimension.

6. EXECUTION OF DECISION MAKING

The Department/Agency should provide an overview of decision making during the emergency.

- Was decision making exercised in a proper manner? Decision making within the Department/Agency and across Departments/organisation involved should be examined.

7. CO-ORDINATION

The Department/Agency should comment on the coordination of the response both within the National Coordination Group and within the Department/Agency. The focus should be on coordination (agreement on how to carry out particular tasks) and not on Command and Control.

8. WORKING RELATIONSHIPS

The Department/Agency should comment on interaction with other departments, other agencies and organisations such as community groups, voluntary emergency services, and volunteers.

9. COMMUNICATION WITH THE PUBLIC

The Department/Agency should provide a review of the interaction between the Department/Agency and the media.

- Did citizens receive an accurate picture of what was happening?
- How was the response portrayed across all types of mass media?

10. NATIONAL EMERGENCY CO-ORDINATION CENTRE (NECC)

Each Department/Agency should review their role in the NECC – consider the NECC as a place, a function and a social structure (level, type, experience etc of those in attendance).