

From Experience of Fukushima: To Enhance Local Resilience

PREPARING AGAINST NUCLEAR EMERGENCIES: LESSONS LEARNT FROM FUKUSHIMA AND EUROPE

Objectives

In Europe, after the Chernobyl nuclear accident in 1986, many activities and projects have been initiated to support the affected area for rehabilitation, control of contaminated foods and decontamination operations, including the European Platform on Preparedness for Nuclear and Radiological Emergency Response and Recovery (NERIS platform). Several countries, such as Spain, France, Norway and Slovakia, have implemented emergency preparedness, based on the emergency scenario with relevant stakeholders.

On the other hand, in Japan, after the Fukushima Daiichi Nuclear Power Plant accident, many residents of nearby cities, towns and villages have been forced to evacuate and there have been substantial limitations on their everyday activities, with such evacuations imposed with no planning and no information on SPEEDI (System for Prediction of Environmental Emergency Dose Information).

Thus, based on the lessons learnt from Europe and Fukushima, emergency preparedness for nuclear accidents is crucial to address any possible nuclear accidents in the future and to achieve sustainable development in Japan, Asia-Pacific and the entire world.

This session on “Preparing against nuclear emergencies: lessons learnt from Fukushima and Europe” shared the actual emergency responses to the accident at the Fukushima Daiichi Nuclear Power Plant and presented lessons learnt for what society needs to prepare. It also provided experiences from European countries that have been working with stakeholders on emergency preparedness for nuclear accidents. Discussions centred on clarifying what should be prepared in a nuclear emergency situation based on the Fukushima and European experiences, in order to deal with any possible nuclear accident in the future.

List of Speakers

[Moderator]

Hiroshi Suzuki, Professor Emeritus, Fukushima University /
Chair, Fukushima Prefecture Reconstruction Committee / Senior Fellow, IGES

[Keynote Speaker]

Tamotsu Baba, Mayor of Namie-machi, Fukushima, Japan

[Speakers]

Erich Wirth, Head of Department on Emergency Preparedness, Federal Office of Radiation Protection, Germany

Tatiana Duranova, Mathematician / Emergency Planning Expert, VUJE, Inc., Slovak Republic

Inger Margrethe H. Eikermann, Head of the Section High North, Department of Nuclear Safety and Environmental Radioactivity, Norwegian Radiation Protection Authority, Norway

[Discussants]

Viktor Averin, Director, Research Institute of Radiology, Belarus

Gilles Hériard-Dubreuil, President, MUTADIS, France



Key Messages

- **Nuclear emergency responses with civic participation are important.**
- **It is necessary to consider measures to deal with nuclear emergencies and also create a roadmap for reconstruction when emergencies occur, in collaboration with decontamination, compensation and livelihood rehabilitation, so as not to repeat the tragedies such as those in Chernobyl and Fukushima.**
- **In Europe, an international network for nuclear emergency was established after the Chernobyl accident. A similar network is necessary in Asia.**
- **Scenario-based emergency preparedness with stakeholder involvement is important.**

Summary of the Session

First of all, Prof. Hiroshi Suzuki highlighted the importance of understanding of the emergency responses to the Fukushima Daiichi Nuclear Power Plant accident in 2011 and also introduced the concept of emergency preparedness for nuclear accidents.

Sharing actual emergency responses:

Mr. Tamotsu Baba provided a keynote speech on “Namie Town’s emergency response to the Fukushima Daiichi Nuclear Power Plant Accident”. At the start of his speech, Mayor Baba described Namie before and after the nuclear accident (detailing what the town has lost), including the severity of damage, and then he spoke about the town’s actual emergency phase including doubts about governance, such as information provided by governments. Challenges remain for Namie, and Mr. Baba emphasised the restoration plans, including rehabilitating the life of each citizen and regeneration of the town.

After that, Dr. Viktor S. Averin added his experience in Belarus after the Chernobyl Nuclear Accident in 1986 that the lack of close communication with its residents might have led to a sense of concern and distrust; it was necessary for governments and scientists to give adequate explanations focusing on the positive aspect of reconstruction.

To provide the practical experience of European countries for emergency preparedness against nuclear accident:

Dr. Erich Wirth made a presentation on “Nuclear Emergency Preparedness in Germany”. Dr. Wirth began by referring to the overall structure of external emergency response with three tasks; 1) evaluation (e.g. evaluation of the radiation situation; presentation of results in standardised maps; and information exchange of the results between institutions), 2) decisions (e.g. reviewing the dose evaluation; comparison with reference levels; decision-making on evacuation and sheltering; and communication with the public) and 3) protective measures (e.g. implementation of measures, such as evacuation and sheltering at the early stage, and decontamination and shielding at the late stage, as well as medical care). Dr. Wirth then introduced Integrated Measurement and Information System (IMIS) with the basic components: Decision Supporting Model (RODOS), Monitoring System, Central Data Bank, Tools for Presentation of Results, and Electronic Situation Display.

Dr. Tatiana Duranova made a presentation on “Experiences of Nuclear Emergency Preparedness in Slovakia with Stakeholder Involvement”. Dr. Duranova indicated that Slovakia has been impacted by

the Chernobyl accident but is hosting nuclear activities with four nuclear reactors. She indicated that both management and preparedness processes form the basis for activities related to stakeholder involvement in the area of nuclear or radioactive emergency and post-accident recovery. Dr. Duranova then introduced 1) the EVATECH (Information Requirements and Countermeasure Evaluation Techniques in Nuclear Emergency Management (2001 – 2005)) project in Slovakia; 2) Training Course on Decision Making in Emergency Management; and 3) EURANOS-related activities with stakeholder involvement, including a seminar and facilitated workshop on a Generic Handbook for assisting in the management of contaminated inhabited areas in Europe following a radioactive emergency.

Dr. Inger Eikermann made a presentation on “Post Chernobyl Experience and Nuclear Emergency preparedness involving Stakeholders in Norway”. In Dr. Eikermann’s presentation, she mentioned that Norway was one of the Western European countries most affected, with deposition levels in hot spots reaching 500 kBq/m² and took two approaches: 1) measures in agriculture/food production (food safety) and 2) limit intake by exposed groups (dietary advices in leaflet). As specific examples of stakeholder involvement, Dr. Eikermann mentioned reindeer herders who are engaged in sampling/mapping; authorities, farmers’ and reindeer herders’ unions; food industries etc. involved in this work, and coordination groups on countermeasure R&D and practical implementation.

Mr. Gilles Hériard-Dubreuil made a presentation on “Nuclear Emergency and Post-Emergency Preparedness: The NERIS Framework in Europe”. First of all, Mr. Hériard-Dubreuil described the specifics of a post-nuclear accident situation, as follows: post-accident situations cannot be dealt with using conventional strategies of radiation protection; appropriate actions of protection must be taken by those that perform day-to-day activities in contaminated areas, and so on. Mr. Hériard-Dubreuil then explained the European framework for nuclear accident & post-accident preparedness. For example, local and national entities will develop, in context, specific institutional, legal and technical tools and procedures for radioactive contamination. Mr. Hériard-Dubreuil added that putting radioactive contamination on the agenda of the various entities in society is a very difficult challenge.

After the presentations, the panelists discussed what measures should be taken to prepare for a nuclear emergency situation based on the Fukushima and European experiences, in order to deal with a possible nuclear accident in the future.

In this discussion:

Mr. Tamotsu Baba underlined that Fukushima is no different from the Chernobyl accident and he asked what the lessons have been learnt from the accident. He stressed the necessity of quick information disclosure on radioactive contamination (e.g. seawater as a recent case) by governments and Tokyo Electric Power Co., Inc. (TEPCO). There is still no detailed radiation map. He emphasised that European countries have carried out such activities.

Prof. Hiroshi Suzuki stressed the necessity of active discussion on emergency preparedness for nuclear accidents, as there is little discussion on it in Japan while European countries have implemented the emergency preparedness based on emergency scenarios.

Dr. Viktor S. Averin emphasised how important it was for citizens and scientists to engage in open discussion on the status of radioactive contamination and its risks. He also stated that it was necessary for citizens to gain an understanding of scientists’ views and build up a trusting relationship.

There were some questions from floor (Q&A session):

A member of the audience stated that an emergency situation is inherently unpredictable, and asked whether or not emergency preparedness should be considered when the system of emergency response in Europe does not work or when information that must be shared cannot be obtained.

Dr. Tatiana Duranova described a database of all necessary information that has been developed in Slovakia using both electronic and paper media, in order to address such emergency situations.

Dr. Erich Wirth added that technical preparedness is also needed for emergency response, such as technology to measure radiation levels, and decision-making on standards of radiation levels. Dr. Wirth also mentioned that communication with the public is related to psychological factors.

Dr. Inger Eikermann indicated that it is important to prepare countermeasures, including the development of a radiation contamination map. Dr. Eikermann also referred that it is necessary to present people with an option on whether or not to continue to live in the contamination area after the nuclear accident, and whether they can continue to earn their living by farming and fishery.

Dr. Viktor S. Averin stated that it is also important to present basic information about radiation to the public in an easy-to-understand manner because it is very difficult for people to understand radiation units of becquerels (Bq). Dr. Averin also added that it is necessary to give answers on whether or not people can continue to live in the area and grow crops there.

Another member of the audience asked Mr. Gilles Hériard-Dubreuil whether or not it is difficult to promote discussion on risk management given that there are 50 nuclear power plants in France.

Mr. Hériard-Dubreuil specified that it may well be easier to ignore risk management, but it is important for people to promote discussion on risk management and be involved in decision-making for their own sake. Mr. Hériard-Dubreuil also added that active participation of people will result in changes in governance, not only on nuclear emergency preparedness but also post-accident recovery.