

Chapter 3

Regional Collaborative Activities in European Countries

This chapter should be cited as

Murakami, T. (2015), 'Regional Collaborative Activities in European Countries', in *Building Guidelines and a Cooperative Framework in East Asian Countries for Radioactive Emergencies*. ERIA Research Project Report 2014-37, Jakarta: ERIA, pp.71-78. Available at: http://www.eria.org/RPR_FY2014_No.37_Chapter_3.pdf

Chapter 3

Regional Collaborative Activities in European Countries

3-1. Switzerland

In Switzerland, the National Emergency Operations Centre (NEOC) is the competent federal authority for exceptional incidents. The duties of the NEOC include constantly observing and assessing the situation. If there is an event that results in an increase in radioactivity, if there are biological, chemical or natural events or technical incidents (satellite crash, breakdown of infrastructure, etc.), the NEOC will inform its partner organisations, portraying the overall situation and acting as a coordinator. In the wake of events leading to an increase in radioactivity the NEOC can in urgent cases prescribe measures to protect the population. In certain types of occurrence, such as major chemical incidents, the breaking and spilling over of dams, or if there is a danger of a satellite crashing, the NEOC assumes further situation-specific tasks. Furthermore, the Federal Council may assign additional tasks to the centre at any time.

The ENSI, the Swiss Federal Nuclear Safety Inspectorate, is the national regulatory body with responsibility for the nuclear safety and security of Swiss nuclear facilities. The ENSI is responsible for the supervision of all Swiss nuclear facilities, namely nuclear power stations, the interim storage facility for radioactive waste, the nuclear research facilities at the Paul Scherrer Institute (PSI) in Villigen, the Ecole Polytechnique Fédérale in Lausanne and the University of Basel. Its regulatory remit covers the entire life of a facility, from initial planning, through operation to final decommissioning, including the disposal of radioactive waste. Its remit also includes the safety of staff and the public, and their protection from radiation, sabotage and terrorism.

On 1 June 2011, the operators of Swiss NPPs established a common external storage for emergency equipment at a former munitions depot of the Swiss Army at Reitnau in Aargau. The ENSI ordered operators to set up the store following the Fukushima accident. This accident has shown that NPPs need speedy access to additional pumps, emergency generators, tubing, fuel and other equipment following a serious external event. As a result, the ENSI also insisted that the emergency equipment should

be transportable by helicopter. The equipment at Reitnau is, therefore transportable by air and can be flown quickly to any required location in a Swiss Army Super Puma. The equipment will be used if the emergency diesel supply at a NPP failed, or if water from nearby rivers cannot be used for emergency cooling. The storage is situated at an altitude that is secure from flooding and is located in bunkered buildings. The operators of all NPPs in Switzerland have access to the storage facility.

Figure 3-1-1. A Cable Module Set in the External Storage Centre for Emergency Equipment



Source: Provided by Working Group member.

On 11 February 2015, the ENSI welcomed the international experts of a working group of the Heads of European Radiological Protection Competent Authorities (HERCA). For a number of years now, this working group has focused on the harmonisation of emergency preparedness in Europe. A new Euratom directive (Directive 2013/59/Euratom) came into force in the EU at the start of February 2014. This directive stipulates safety standards to regulate protection against ionizing radiation. The HERCA Action Plan requires measures to be implemented in various areas including emergency

preparedness. The member countries have until February 2018 to implement this directive. It is also envisaged that Switzerland will implement the directive. At the meeting in Brugg, the experts developed a shared understanding of the directive's concepts and requirements. Work was also undertaken on guidelines for bilateral agreements.

Figure 3-1-2. International Meeting at ENSI on Harmonisation of Emergency Preparedness in Europe



Source: Swiss Federal Nuclear Safety Inspectorate ENSI website,
<http://www.ensi.ch/en/2015/02/11/international-meeting-at-ensi-on-harmonisation-of-emergency-preparedness-in-europe/>

3-2. European Union

3-2-1. European Community Urgent Radiological Information Exchange (ECURIE)¹⁷

The European Community Urgent Radiological Information Exchange (ECURIE) system is the technical implementation of Council Decision No. 87/600/Euratom on EU arrangements for the early notification and exchange of information in the event of a radiological or nuclear emergency. This Decision requires all member countries to promptly notify the European Commission (EC) and all member countries potentially affected when a member state intends to take counter-measures to protect its population against the effects of a radiological or nuclear accident. The EC will immediately forward this notification to all member countries. Following this first

¹⁷ <https://rem.jrc.ec.europa.eu/RemWeb/activities/Ecurie.aspx>
http://cordis.europa.eu/result/rcn/156479_en.rtf&rct=j&frm=1&q=&esrc=s&sa=U&ved=0CBQQFjAAahUKEwiKurj-0eHGAhXjGaYKHW-LBSU&usq=AFQjCNFT2hKQ16mwCM0mwLHFjUI6V4Y3zw

notification, all member countries are required to inform the EC at appropriate intervals about the measures being taken and the radioactivity levels that have been measured. All 28 EU member countries, as well as Switzerland, have signed the ECURIE agreement.

The ECURIE system consists of three major components:

1. The Convention Information Structure (CIS), which describes in detail what type of information may be sent, as well as the format in which it has to be sent;
2. Dedicated ECURIE web systems to create, send and receive notifications through different channels, i.e., phone calls, SMS, fax, web services using the International Radiological Information Exchange (IRIX) format; and
3. A network of contact points (CPs) and competent authorities (CAs) officially nominated by each member state and by the EC to operate the ECURIE system.

ECURIE contains several research projects. 'EURANOS,' European approach to nuclear and radiological emergency management and rehabilitation strategies, is an example of one current project. Major meetings and workshops were held from 2002 to 2006 on such workflows as:

- Collate information on the likely effectiveness and consequences of a wide range of countermeasures.
- Provide guidance to emergency management organisations and decision-makers on the establishment of an appropriate response strategy.
- Further enhance advanced decision support systems through feedback from their operational use.
- Create regional initiatives leading to information-exchange based on state-of-the-art information technologies.
- Develop guidance to assist member countries in developing a framework for the sustainable rehabilitation of living conditions in contaminated areas.
- Maintain and enhance knowledge and competence through emergency exercises, training and education, thus fostering best practice in emergency response.

Two generic handbooks, 'Management of contaminated food production systems (Version 2)' and 'Management of contaminated inhabited areas (Version 2)', are the major outputs of this project. The first handbook is to assist in the management of contaminated food production systems, while the second handbook is to assist in the management of contaminated inhabited areas in Europe following a radiological

emergency. Both handbooks have been developed in conjunction with stakeholder panels from around Europe and both provide guidance on customisation at the national/local level, as well as on how to develop processes for engaging stakeholders in the further development and application of the handbooks. The handbooks were translated into Japanese by an expert group in the Atomic Energy Society of Japan in 2011 to provide useful and accurate information to the public.

3-2-2. European Platform on Preparedness for Nuclear and Radiological Emergency Response and Recovery (NERIS)¹⁸

The mission of the NERIS, 'European Platform on preparedness for nuclear and radiological emergency response and recovery' is to establish a forum for dialogue and methodological development between all European organisations and associations taking part in decision-making of protective actions in nuclear and radiological emergencies and recovery in Europe. NERIS-TP and PREPARE are the major projects in the framework of NERIS.

The project NERIS-TP (Technology Platform) aims on the one hand to keep the momentum gained through the European Project EURANOS in establishing a platform where the operational and research community can meet to discuss with all the relevant stakeholders the topics related to emergency response and recovery preparedness. On the other hand, it aims to tackle urgent research topics in the area of nuclear emergency response and recovery preparedness. Through a collaboration of industry, research and governmental organisations in Europe, methodological aspects and computational models will be developed to be consistent with recent recommendations from international bodies such as the International Commission of Radiation Protection (ICRP) and improve Europe's response by coupling decision-support systems with an emergency information system, such as the European-wide information system, ECURIE. Within this project, a platform will be established that will be a unique place for combined meeting of the research and the operational community.

The project PREPARE intends to review existing operational procedures in dealing

¹⁸ <http://www.eu-neris.net/>.

with long-lasting releases, address the cross-border problematic in monitoring and safety of goods, and will further develop still missing functionalities in the decision-support system ranging from improved source term estimation and dispersion modelling to the inclusion of hydrological pathways for European water bodies. As the management of the Fukushima accident was viewed in Europe as being far from optimal, it is proposed to develop the means on a scientific and operational basis to improve information collection, information exchange and the evaluation for such types of accidents. This will be achieved through a collaboration of industry, research and governmental organisations in Europe taking into account the networking activities carried out under the NERIS-TP project. Furthermore, the NERIS Platform member organisations (so far 43 partners) will be actively involved in the development.

3-3. Nordic Countries

3-3-1. History and Outline of Activities

The five Nordic countries (Denmark, Iceland, Finland, Norway, and Sweden) have a long tradition of cooperation, owing to their geographic proximity and facilitated by similar economic, cultural and societal structures. A Nordic mutual assistance agreement for radiation accidents has been in existence since 1963, and all Nordic countries are parties to the IAEA Convention on early notification in case of a nuclear accident, signed in 1986.

There have been three major cornerstones of cooperation in Nordic countries. First, in 1993, Chiefs of the Nordic radiation protection and nuclear safety authorities established a working group, the Nordic working group on Emergency Preparedness (NEP) for co-operation, co-ordination, exchange of information and assistance in the field of emergency planning and response. A work plan is made for a two-year period and approved by the Chiefs Meeting.

Emergency contact information details are kept continuously updated by NEP members. Even temporary short-term changes are communicated. The members of the NEP consist of representatives from all Nordic radiation protection and nuclear safety

authorities that are centrally involved during relevant incidents or emergencies. Each authority nominates its representative(s). The participating authorities are:

- Denmark: Danish Emergency Management Agency (DEMA)
- National Institute of Radiation Hygiene (SIS)
- Finland: Radiation and Nuclear Safety Authority (STUK)
- Iceland: Icelandic Radiation Protection Institute (GR)
- Norway: Norwegian Radiation Protection Authority (NRPA)
- Sweden: Swedish Radiation Safety Authority (SSM)

In 2006, 'The Nordic Manual'¹⁹ was established. The document describes practical arrangements and co-operation to fulfil obligations stated in bilateral agreements between the Nordic states. It also takes into consideration the international definition of nuclear and radiological incidents and emergencies, as well as other important international aspects for preparedness and response in the Nordic states.

Furthermore, in 2014, 'The Nordic Flag Book'²⁰ was published by the Nordic radiation protection and nuclear safety authorities for proactive measures in early and intermediate phases of a nuclear or radiological emergency. The document is intended as generic guidelines covering all types of scenarios and is therefore relevant for both accidents and intentional acts. The Nordic guidelines and recommendations are based on the Finnish guides for radiological emergency situations (STUK, VAL-guides), and further developed through close Nordic cooperation. The VAL-guides implement the new ICRP approach and, in addition, the recommendations are in line with international guidelines and draft available at that time.

3-3-2. Findings and Implications

Through a research trip to Nordic countries and interviews with staff of the nuclear safety authorities during the trip, the following findings were identified:

¹⁹ The manual is titled 'Co-operation, Exchange of Information and Assistance between Nordic Authorities in Nuclear or Radiological Incidents and Emergencies', and it is available here: http://www.stuk.fi/sateilyvaara/fi_FI/index/_files/81806227499122865/default/nordicmanual_rev1_29102008.pdf

²⁰ The book is titled 'Nordic guidelines for nuclear and radiological emergencies' and it is available here: <http://www.stralsakerhetsmyndigheten.se/Global/Pressmeddelanden/2014/Nordic%20Flagbook%20February%202014.pdf>

- Mutual reliance is the top crucial success factor for regionally collaborating in case of an emergency.
- Similar languages and cultures can be one of the keys.
- Each country has an emergency preparedness and response system of its own and these systems are all different.

The major implications that could be learned in Asia from the challenges faced by Nordic countries with regard to regional cooperation in case of emergency include:

- Operational Intervention Levels should be determined considering the reference levels in each country.
- Common 'triggers' should be shared in advance.
- Common database, information platform, joint research or/and training programme are strongly recommended for Asian countries.