

Scenario-based stakeholder engagement and involvement in nuclear emergency in decision making, preparedness – Slovak Republic experience in RODOS

Tatiana Duranova and Jarmila Bohunova, VUJE, Slovak Republic

Introduction on approaches to deal with uncertainty information within the decision-making process in nuclear emergency

Training seminar, 16 April 2019
University of Milan, Italy

Lessons learned after the Chernobyl and Fukushima accidents

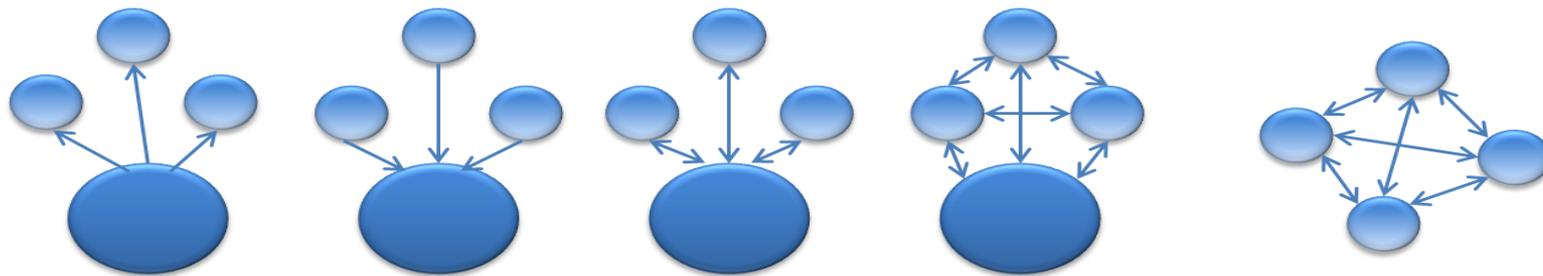
- The human consequences of nuclear accidents and remediation go beyond dose, economic cost and dose reduction
- Emergency preparedness and countermeasure evaluation needs to address these issues
- Stakeholder engagement and dialogue is one approach
- There are different processes and methods of stakeholder engagement
 - Emergency preparedness
 - Countermeasure evaluation
 - Real situations



Context of the Slovak process

- The main goal:
 - to improve and strengthen the emergency and post-accident preparedness and recovery management at all levels: national, regional and local
- The main interest and motivation:
 - to share experience about different initiatives on emergency and rehabilitation preparedness and management throughout Europe
- How to fulfil:
 - to develop and apply methods and models of stakeholder engagement and participation to allow and support dialogue
- The complexity of the emergency preparedness and post-accident management has been recognized and was analyzed deeply in the Slovak Republic what influenced also the process of the radiation protection culture development and improvement

Research Activities as a framework of the Slovak process



Level 1:
Inform or educate

Level 2:
Gather information

Level 3:
Discuss, involve

Level 4:
Engage on complex issues

Level 5: Partner in implementation of solutions

EVATECH

Emergency plans
RP strategies – post accident
RODOS DSS Web-HIPRE
Facilitated workshop, training

EURANOS

Recovery Handbooks development
Case studies - RP focus
Demonstration projects
RODOS DSS scenario use
Seminars, facilitated workshops
Training
RP culture building

NERIS-TP, INEX 4

Case studies
Exercises
Belarus - exchange visit
Facilitated workshops
Training
Education

PREPARE, INEX 5, CONCERT, CONFIDENCE, ENGAGE

Exercises
Emergency plans - review
Facilitated workshops, Training
Education

Characterization of the Slovak process

- Focus on specific issues considered in the process:
 - Management of contaminated inhabited areas,
 - Management of contaminated food production systems
 - Management of drinking water supply,
 - Withdrawal of emergency countermeasures,
 - Rehabilitation of living conditions in the contaminated areas
 - Organization of public authorities
 - Stakeholder involvement
 - Communication
 - Post-accident policy
 - Evaluation tools and methods for supporting the management team
- About 60 people took part to the work of the facilitated workshops, seminars and exercises developing the tools and cooperation practices and habits and forming a post-accident community.

Models of stakeholder engagement and participation

- testing, customization and use of models and tools;
- case studies using scenarios developed;
- building network and trust between partners within the Slovak Republic and within the Europe in the EC projects;
- facilitated workshops, exercises, seminars, training courses
- establishing of the Slovak panel and EURANOS Handbooks Users Group and
- participation in the network involved in development of the EURANOS Handbooks for assisting in the
 - management of contaminated inhabited areas,
 - food production systems and
 - drinking water

Methods, tools, resources

- education seminars,
- facilitated workshops and table-top exercises,
- topical workshops,
- training courses of emergency staff,
- inclusion in national and international exercises (Emergency Response Organization + municipalities, INEX 4 Exercise on consequence management and the transition to recovery, INEX 5 Exercise on),
- development of scenarios (INEX 4, facilitated workshops),
- Exchange visits – Slovak Republic-Belarus,
- Fukushima Mission 2013 and 2015.

Methods, tools, resources (cont.)

Modelling and calculation tools, guidance and handbooks used by stakeholder panels with national, regional and local actors on post-accident issues:

- RODOS/JRodos complex Decision Support System customized to the Slovak Republic conditions (LSMC modules, FDMT, ERMIN, AgriCP modules and other),
- national decision support system RTARC (VUJE, Inc.)
- the Handbooks for assisting in the management of contaminated inhabited area, food production systems and drinking water
- Web-HIPRE (Hierarchical PReference analysis in the World Wide Web) software for structuring decision analytic problems using multi-criteria evaluation and prioritisation with integrated module allowing the import of ESY-files (“RODOS output files”), which contain a selection of appropriate alternatives and attributes

Development of tools, methods & processes

- Facilitated workshop: **“Decision analysis of clean-up actions in inhabited areas in the Slovak Republic after an accidental release of radionuclides”** took place in November 19-20, 2003 with 25 participants.
- Training Course **Decision Making in Emergency Management within the Project Strengthening of the Nuclear Emergency Preparedness – Sharing of New International Experience** (NSP/03-S2), February 14-16, 2005, NEA SR Bratislava, 21 participants, 8 lecturers
- Training course **“Evaluation tools and methods for supporting the emergency management team”** developed and conducted by VUJE under the EURANOS Project (7FP) and national R&D project in VUJE facility Modra-Harmonia, 25.-27.5.2009, 19 participants, 2 lecturers.
- Direct involvement of stakeholders in the development of the **Generic Handbooks for Assisting in the Management of Contaminated Inhabited Areas, Food Production Systems and Drinking Water** in the Recovery Phase. All together 10 seminars and facilitated scenario-based workshops have been developed and conducted attended in average by 16 representatives of different groups of stakeholders in each in the time period May 2005-May 2011

Development of tools, methods & processes – national activities

- Preparation and conducting of **lectures by NRA SR representatives at the Academy of Police Force in Bratislava preparing first responders** together with other risks to be managed, acknowledging that radiation protection is not the only concern in a specific situation or for the target stakeholders.
- **Presentation of Handbooks** by NRA SR related to to:
 - the Mayors during the periodical training – Trnava District , Malacky District, presented by the NRA SR, supervision of the Ministry of Interior
 - the lecturers of the Educational and Technical Institution of the Ministry of Interior in Nitra and Spisska Nova Ves.
- To support development of high level initiative on emergency preparedness and rehabilitation it was agreed to inform about results of stakeholders panels more intensively also at the governmental level, what should have an effect on future development and effectiveness of the process.
- The information should be not only published via media and publications in journals and conferences, but should be prepared as information for the government council and referred by the Nuclear Regulatory Authority Chairman.

Development of tools, methods & processes - exercises

- **INEX 4 Exercise** focused on **Consequence Management and the Transition to Recovery in response to malicious acts involving the release of radioactive materials in an urban setting**. (WPNEM - OECD/NEA), January 26–27, 2011, with 76 participants from 36 organizations
- The exercise outputs encouraged deeper analysis of the situation in the Slovak Republic in the area of emergency planning and preparedness and subsequent Fukushima disaster and response to the situation accelerated the process of design and development of the Concept of the organization and development of Civil Protection and Concept of organization, operation and development of the Integrated Rescue System in the Slovak Republic.
- This exercise has shown the efficiency of the process. It was expressed by stakeholder the clear message, that without all activities, development and improvement of radiation protection culture it will not happen. Lessons learned have been recognized and reported to the OECD/NEA WPNEM working group as well as at the governmental level of Slovak Republic.

Development of tools, methods & processes – technical visit to Belarus

- The capability of experts to listen and understand the concerns of the stakeholders was significantly improved after the **Technical visit of stakeholders group** (11 experts) **from Slovakia to Belarus** within the WP3 activities in the framework of the NERIS-TP Project of the Euratom FP7 (GA 269718) which took place from June 1 to June 7, 2013
- The two topics were blended together during the visit:
- 1) Improvement of national-local cooperation in Slovakia and Belarus, and
- 2) Radiation control and dissemination of radiological culture as the roles of the centres for practical radiological culture implemented and coordinated by RIR.
- The main goal was to share the experience on the process, methodology and tools used for the improvement of the **practical radiological culture of population living at the long term contaminated area.**
- The **experience from Belarus** has shown the way **how to ensure the transmission of radiation protection culture over time** what is the case in Belarus after the Chernobyl accident. Education at school and involvement of children, young generation engagement and collaboration with parents via building local practical radiological centres is the way.

Results from seminars, workshops and training courses

- Community of stakeholders involved in emergency response to potential nuclear emergency has formed
- Regular sharing of experiences with development, customisation and implementation of new decision support tools
- Improvement in communication between stakeholders and also in mutual understanding of work of stakeholders
- Stakeholders would appreciate faster implementation of outcomes of these activities/meetings
- Slovak stakeholder panels has shown that they are able to work together, to communicate problems, to absorb new comers to the working groups

Results from seminars, workshops and training courses (cont)

- Working in the form of facilitated workshops with scenario developed using customized operational tools (RODOS/JRodas, RTARC, Web-HIPRE) makes work more efficient, focus on possible real problem and finding real solutions
- Communication between different stakeholders was found as very important to get a balanced view on various aspects of the issues at stake at the national, regional or local level. It enables a common language and a shared understanding of the challenges to be developed
- There is a common understanding in necessity of continuation of joint meetings of stakeholders and willingness to have organized annually workshops for sharing experiences, identifying gaps and improving preparedness

CONFIDENCE Training course

*Use of uncertain information by decision makers at
the various levels within the decision making process
and its communication*

13-15 May, 2019, VUJE, Okružna 5,
Trnava, Slovak Republic



tatiana.duranova@vuje.sk

CONFIDENCE Dissemination Workshop

Coping with uncertainties for improved modelling and decision making in nuclear emergencies

2-5 December 2019, Lindner Hotel Gallery Central Metodova 4,
Bratislava, Slovak Republic



<https://www.eu-neris.net/home/newsletters/190-confidence-dissemination-workshop-first-announcement-2.html>

ENGAGE Final Workshop

11-13 September 2019

Bratislava, Slovak Republic



<http://www.engage-h2020.eu>

