

A review of off-site nuclear EP&R arrangements in EU MSs and neighbouring countries

Aarhus Convention and Nuclear Roundtable on EP&R

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EU post-Fukushima initiatives

> 2011 Council mandate:

- EU-wide stress tests of nuclear power plants/ENSREG/EC/MS (2011-2012)
- Review legal and regulatory framework for nuclear safety (2014)

Study on off-site nuclear emergency preparedness and response (2013-14)





Aims of the off-site EP&R study*

- Assess existing arrangements for coherence and completeness
- Identify best practice, gaps and inconsistencies
- Indicate how current arrangements could be made more effective
- Make recommendations on potential improvements



ENCO/UJV, Data collected 2013, report issued 2014





Scope

- First-step evaluation to get a rapid overview of current situation based on detailed questionnaire, interviews, workshops, case-studies
- **Based on the declared arrangements**/self-assessed by the competent authorities in each country
- Findings and recommendations reviewed stakeholder group (50 members – industry assoc, regulators, NGOs's, local authorities, citizen groups, topic experts, civil protection)





Study Methodology

• 28 EU MS, plus neighbours (CH, NO, AM)







Study approach

- Questionnaire on arrangements and capabilities
- Evaluated against international benchmarks (EU, IAEA)
 - Emergency Planning Zones
 - Intervention Levels
 - Coordination with stakeholders
 - Exercising
 - Public information
 - Measurement capabilities
 - Medical response capabilities
 - Mutual assistance, cross-border issues





Study Approach

- Benchmarking against international requirements
 - IAEA GS-R-2 (2002)
 - **Euratom legislation** (BSS-96 and Public Information Directives, Regulations e.g. on foodstuffs)
- Inter-comparison/mapping between countries
- Questionnaire covered improvements planned, needed
- Findings/recommendations discussed at workshops with stakeholder group





Benchmarking Findings

- Most countries apply and comply with the requirements
- Compliance with EU legislative requirements generally good
- Compliance with IAEA requirements/guidance more patchy, particularly for:
 - Managing the medical response
 - Agricultural countermeasures, longer term protective measures
 - Recovery, Quality assurance





Mapping by country:

- 22 topics mapped
- To find common practices, potential gaps, further analysis, e.g.
 - Emergency planning zones,
 - Intervention levels
 - Reg. for rescuers, emergency workers
 - Cross-border arrangements
 - National capabilities
 - Public information and communication
 - Protracted emergencies



Mapping EPZ: Sheltering





Mapping EPZ: Iodine



Energy



Key Study Findings



/medical





Self-identified areas for further improvement – Countries with NPP

- Broader range of scenarios for planning
- Planning for complex scenarios natural hazards, protracted emergencies, multiple events
- Need for criteria to end protective measures
- Clarity in roles responsibilities of organisations
- Review and extension of EPZ
- Legal basis and organisational structure more robust
- Policy for remediation
- Decision-makers to be better informed about radiation, nuclear
- Insufficient resources for large scale protracted emergencies
- Strategy for social media





Self-identified areas for further improvement – Countries without NPP

- Better concept for informing the public
- More comprehensive emergency exercises
- Arrangements for contaminated goods (non-food)
- Improved communication between organisations
- Assessing consequences and recommending countermeasures to EU citizens in third countries
- Insufficient resources for protracted emergencies
- Environmental monitoring system to be established
- Better radiation detection equipment at borders



Key Study Recommendations





Study proposals for EU level initiatives for EC consideration





Basic Safety Standards Directive Directive 2013/59/Euratom

- Strengthened requirements, a comprehensive approach
 - **Reference levels** (Art 17)
 - Occupational exposure, em. response (Art 53,69)
 - Emergency management system (Art 97)
 - Emergency preparedness (Art 98)
 - International cooperation (Art 99)
 - Strategies for long-term (Art 100-101)
 - **Public information** (Art 70,71)



Nuclear Safety Directive Amendment Directive 2014/87/Euratom

- Reinforced requirements
 - Independence and role of national regulatory authorities (Art 5)
 - **EU-wide safety objective** (Art 8a)
 - Defence-in-depth, accident prevention mitigation (Art 8b,d)
 - Consistency, continuity on-site EPR and the BSS provisions (Art 8d)
 - European system of topical peer reviews (Art 8e)



European Commission

BSS, NSD Transposition and Implementation



- Benefits of involving civil society in preparedness activities
- Input of civil protection authorities, other stakeholders





Conclusion

- Arrangements and capabilities appear to meet requirements (but stronger demonstration that declared arrangements would work in practice)
- Inconsistencies exist between MS (could be important for cross-border cases)
- Countries themselves identified areas for improvement (scenarios, long term strategies, resources, exercises)
- The transposition and implementation of the NSD and BSS Directives provide opportunities for review, improvements and coherence (Transposition and implementation will be monitored by the Commission)



Study report is available at:

http://ec.europa.eu/energy/en/topics/nuclear-energy/radiation-protection