

Euratom and Emergency P&R

André JOUVE
DG-RTD
Energy - Fission

NERIS Priorities

1. Assessment of and communication about uncertainties.
2. Robust decision-making.
3. Countermeasure strategy preparedness.
4. Atmospheric dispersion modelling.
5. Local radio-ecological models.
6. Monitoring strategies.

EURADOS WG3 action plan

1. Definition of minimal requirements for European early warning dosimetry network systems
2. Development of alternative methods in environmental dosimetry
3. Participation in "MetroERM" for early warning dosimetry network systems
4. Passive dosimetry systems used in Environmental Radiation Monitoring

Strategic research agenda in radioecology

1. Predict human and wildlife exposure more robustly by quantifying key processes
2. Determine ecological consequences under realistic conditions
3. Improve human and environmental protection by integrating radioecology

MELODI Priorities

1. Shape of dose response including biomarkers
2. Epigenetic modifications in radiation-induced...
3. Develop and validate biomarkers
4. Roles of specific target cells
5. Potential impact of individual susceptibility

Directive 2013/59/EURATOM

Annex XI

- *Reference levels, strategies, criteria, coordination*
- Arrangements to accommodate the prevailing conditions
- Comparing the doses against the applicable reference level
- Implementing further protection strategies based on prevailing conditions and available information.

DIRECTIVE 2014/87/EURATOM
**Preventing accidents and, should an
accident occur, mitigating its
consequences and avoiding**

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- (a) early radioactive releases that would require off-site emergency measures but with insufficient time to implement them;
- (b) large radioactive releases that would require protective measures that could not be limited in area or time.



European Parliament resolution 143 of 15 December 2015 on Towards a European Energy Union

Notes that nuclear power provided 27 % of the EU's electricity mix and over half of all EU low-carbon power in 2014, that 130 out of 132 EU nuclear plants are due to be decommissioned by 2050, leaving a major gap in low-carbon base... calls on the Commission to ensure the EU provides an enabling framework for those Member States that wish to pursue new nuclear power projects to do so, within EU internal market and competition rules

Call - Euratom fission 2016-2017

- Continually improving safety and reliability of Generation II and III reactors
 - Research on safety of fast neutron Generation-IV reactors
 - Investigating the safety of closed nuclear fuel cycle options and fuel developments
 - Research on the safety of small modular reactors
- Materials research for Generation-IV reactors

OPERRA/SHAMISEN

- Drawing on experiences gathered in the aftermath of past nuclear emergencies and developing recommendations for future medical and health surveillance of recovery workers, evacuees and residents of contaminated areas
- Take into consideration direct radiation-induced effects and also health effects that are not directly caused by radiation, but indirectly by countermeasures or psychological effects.

OPERRA/CAThyMARA

- Monitoring strategies and assessment of thyroid doses resulting from intakes of radio-iodine
- Relies on a review of existing European means....

OPERRA/HARMONE

- Harmonise and expand the modelling approach of the European decision support systems RODOS and C3X/SYMBIOSE
- Compare the results of SYMBIOSE and RODOS model runs with different accident and release scenarios

OPERRA/VIBRATO

- Validate the use of inflammation-related immune parameters as biological indicators to detect exposure to radiation
- Provide suitable tools for future molecular epidemiology studies and for the assessment of radiation health effects

Conclusions

- *Emergency P&R central for EURATOM*
- *Biomarkers of exposure and sensitivity did not exist at the time of the Euratom Treaty but are about to change the context*
- *Cooperation and synergies accross the programme are an opportunity*
- *Reinforced integration of radiation protection research will facilitate your response to the challenge*

*Thank
you for
your
attention*

