

Task Group 76: Radiological Protection from Naturally Occurring Radioactive Material (NORM) in Industrial Processes



A wide range of practices

- Mining and extractive industries (other than U mines)
- Production of coal, oil, gas
- Production and use of metals (thorium, niobium, zirconium, titanium...)
- Phosphate industry
- Water treatment
- Cement production
- Building materials

Protection of workers

Characterisation of the exposure situation

Integration, as necessary, of RP in common OHS provisions

The approach is then **graded**

Reference Level reflecting the distribution of exposures

- Less than a few mSv/y (most cases)
- Above a few mSv/y but very rarely exceeding 10 mSv/y

By selecting appropriate **protective actions**: 2 series

- **Collective**: related to workplaces and working conditions
- **Individual**: related to each worker

More or less thorough implementation of protective actions

Protection of the environment

Source = discharges and residues

Integrated approach

- All hazards: radiological and non-radiological stressors
- All impacts: human and ecological (non-human species)

Graded approach

- Generic assessment
- Specific assessment
- Detailed Environmental Impact Assessment (EIA)
- Use of tools (RAP...) and criteria (DCRL...) from Pub 124 as appropriate

Stakeholder involvement

Members

Jean-François Lecomte (Chair), France

Dejanira da Costa Lauria, Brazil

Philip Egidi, USA

P.P. Haridasan*, IAEA

Astrid Liland, Norway

Fudong Liu, China

Mika Markkanen, Finland

Stefan Mundigl*, EC

H.Burçin Okyar*, IAEA

Peter Shaw, UK

* Corresponding members

Other contributors

Sylvain Andresz (Secretary), France

Jelena Mrdakovic-Popic, Norway

Characteristics of Industries involving NORM

- **Identified**, already on-going, big size but **not one sector** in itself
- Often **multi-hazards**, radiological risk rarely dominant
- Subject to **authorisation**, not for RP
- Experience in risk management but **poor RP culture**
- NORM **cycle**: Extraction, transformation, use, reuse/recycling, waste
- **Ubiquity, variability** of exposures
- No **real prospect of emergency** leading to tissue reaction or immediate danger to life
- May pose an issue of **environmental contamination**

Protection of the public

Characterisation (who is exposed, when, where, how)

- Exposure pathways analysis
- Dose assessment
- Justification of action
- Optimisation of protection
- Involvement of stakeholders
- Long-term monitoring

Optimisation within a **graded approach** by controlling discharges, waste, recycled residues (e.g. building materials)

Selection of a relevant **Reference Level**

- Generally less than a few of mSv/y

Stakeholder involvement

