

IRPA Task Group on Radiation Protection in Industries Impacted by NORM

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NORM IX

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Outline

- Background and Observations
- IRPA
- Role of Task Group
- Action Plan
- Member Feedback
- Summary
- Perspective

NORM Industries

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Industries with NORM

Industries with NORM

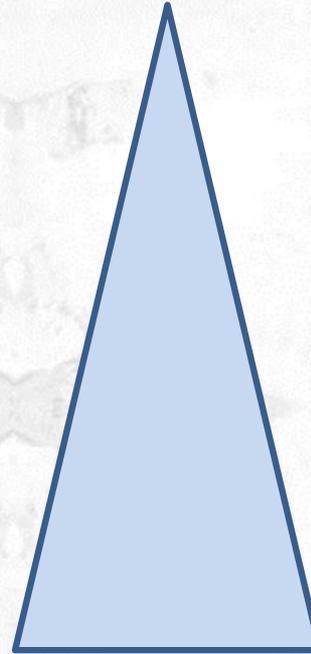


Industries with NORM



Observations - Sites

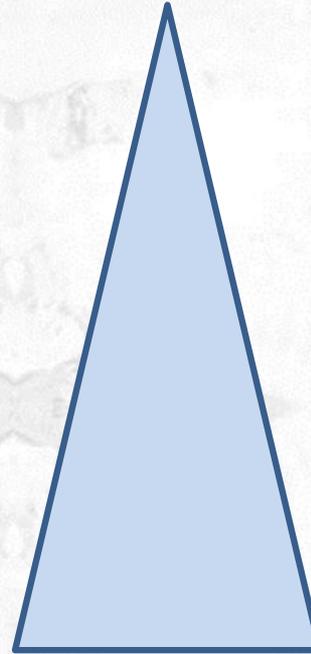
- Uranium mining
- Mineral sands
- Rare earths
- Other NORM
- Other mining/processing



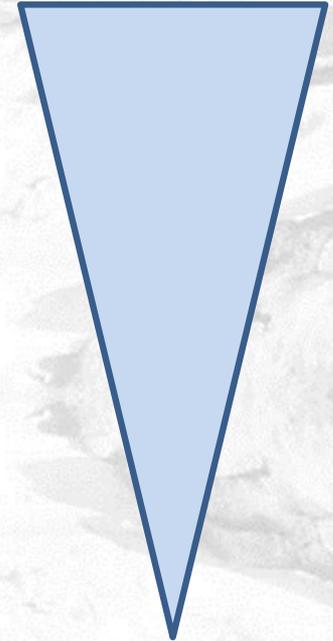
Number of Operations

Observations - Expertise

- Uranium mining
- Mineral sands
- Rare earths
- Other NORM
- Other mining/processing



Number of Operations



Radiation Protection
Expertise

NORM and Keeping Radiation in Perspective

- Radiation hazard is one of many hazards at an operational site
- Industry relies on regulators and legal requirements
- Usually highly regulated
- Raw materials, wastes, products “radioactive”
- Uncertainty over whether materials are dangerous
- Confusion between NORM, radioactive and nuclear
- Materials are “seen” differently
- Added requirements on producer and customers
- Potential trade impediments
- Everyone is cautious and conservative

Practical Implications

- Significant (disproportionate) costs for managing radiation risk
- Implications of perceived impacts of radiation;
 - Generation of the fear of radiation
 - Access to land for exploration
 - Constraints on mine approval and operation
 - Restricts the handover of the rehabilitated site
 - Restrictions on lifestyle
 - Land availability
 - Potential “showstopper”
- Potential nett harm if decisions based on over-rated radiation risk and under-rated other risks
- Balance between demonstrating low doses and not over-emphasising radiation hazard

IRPA



- International voice of the radiation protection profession
- It is an association of radiation protection professionals joining through national and regional radiation protection societies.
- Aim:
 - Promoting the worldwide enhancement of professional competence, radiation protection culture, and practice.
- Achieved by providing benchmarks of good practice and encouraging the application of the highest standards of professional conduct, skills, and knowledge for the benefit of individuals and society.
- An emerging and growing concern in the field of radiation protection is naturally occurring radioactive materials (NORM).

IRPA NORM in Industry Task Group

- The TG aims to increase awareness of issues related to NORM in industry and to develop a common understanding of requirements, good practice and challenges faced by industry practitioners and regulatory bodies
 - Development and promotion of a library of good practice documents
- Influencing policy makers, regulators and industry to ensure that controls for NORM are commensurate with the actual radiological risk
- To identify gaps at a global scale related to ethical foundations of radiation protection in working with NORM and stimulate open discussion of such issues
- Engage with industry and collaborate and co-ordinate with other groups of similar interests in this field, including IAEA
- Promote practical solutions which apply the graded approach to regulation
- Organise workshops and similar events for the dissemination of experience and good radiation protection practice
 - Webinars, position papers and website information

Activities to Date

- Establishment of the TG
- Refinement of the ToR
- Collection of feedback from TG members
- Development of a works plan in response to the ToR items
- Comment on IRCP document on radon
- Outreach to other organisations

Task Group Members

Name	Organisation	Country
Won-chul Choi	KARP	South Korea
Gert Jonkers	NVS	Netherlands
Christian Kunze	FS	Germany
Analía Canoba	SAR	Argentina
Dr. Kazuki Iwaoka	JHPS	Japan
Gregory Onomakere Awiri	NSRP	Nigeria
Nick Chambers	SRP	UK
Rosabianca Trevisi	AIRP	Italy
Katerina Rovenska	CSR	Czech Rep
Juan Carlos Mora	SEPR	Spain
Francis Otoo	GARP	Ghana
Rainer Gellermann	FS (& ENA)	Germany
Jim Hondros	ARPS	Australia
Anne Delos	SFRP	France
Helene Caplin	SFRP	France
Phil Egidi	EPA Technical Adviser	USA

IRPA NORM TG Works Plan

- Collect national examples of activities with NORM
- Development of support documentation
- Maintain a watching brief on the ethical approach to radiation protection
- Develop a position on the graded approach to regulation
- Develop a document with advice for workers on NORM
- Liaise with the IAEA to identify opportunities to work together
- Write to other organisations with an interest in NORM to seek collaboration

TG Member Feedback

Developing and Promoting Good Practice

- Case studies:
 - National approaches where established NORM regulations exist
 - Identification and details on “better” practices eg;
 - measurement methods,
 - dose assessment for workers in different industrial sectors or for different processes,
 - dose assessment for public members and environment,
 - personal protective equipment
 - Practical application of the “the graded approach”
 - Dosimetry and monitoring services
 - Management of NORM related waste (application of exemption levels)
 - Provide comparisons between safety standards (IAEA, EU etc.) and country regulations to identify the better practices for NORM related activities
 - Access learning from the IAEA ORPAS missions.

Developing and Promoting Good Practice

- Development of other support documentation;
 - Provision of support documents for industries with NORM
 - Documents that give easy and clear guidance for implementing the requirements of IAEA and ICRP
 - Prepare a position on radon
 - Easy advice for other industries with NORM (beyond the ones we already know)
 - Develop practical advice for industry
 - Consider advice on NORM in Oil and Gas industries
 - Provide a short FAQ on NORM for the public
- The “graded approach to regulation” - always work towards a reasonable approach to regulation and advise on the appropriate level of regulation rather than over regulation.

Communications about NORM

- Assist with better communication of NORM information into countries with limited experience with regulation of NORM
- Technical forums for regulators and operators (eg; characterisation, measurements and dose assessment)
- Develop a compendium of the existing documents on NORM (eg; from the IAEA) (Japan has a useful resource database on NORM);
 - <https://www.nirs.qst.go.jp/db/anzen/db/NORMDB/ENG/index.php>
 - https://www.nirs.qst.go.jp/db/anzen/db/NORMDB/ENG/1_datasyousai.php
 - https://www.nirs.qst.go.jp/db/anzen/db/NORMDB/ENG/1_dosetool.php
- A resource database of available information on a country's natural background could be useful, for training purposes, context when performing dose assessment, public relations etc.
- A resource similar to the US HPS's 'Ask an expert', could be useful for workers and the public

The Ethical Approach

- Caution when considering “ethics” because it is value based
- Focus on a practical and clear regulatory system (clear and rational requirements to provide certainty, but also recognising that the risk is generally very low)
- Provide clarity on the “graded approach to regulation” and that TG members have the expertise to do so.
- Need to ensure that workers are aware of NORM risks and hazards
- Consideration of environmental effects of NORM were noted
- Occupational dose in context with natural background exposure, with consideration of the significant variability of background
- Understanding/considering natural background exposure is important when performing risk assessment and determining control measures for NORM industries
 - For example: do you do ‘background subtract’, or go ‘worst-case’;
 - Would you spend a significant amount of money achieving a reduction from 100 $\mu\text{Sv}/\text{y}$ to 25 $\mu\text{Sv}/\text{y}$ for an occupational exposure, when people are routinely receiving $\sim 10,000$ $\mu\text{Sv}/\text{y}$ due to Rn in the home...?.

Regional Workshops

- Regional workshops come from a “needs analysis”
- FAQs or information sheet on NORM – develop a common understanding
- IAEA have an extensive series of activities and it is important not to repeat what they have done.
- Link in with other organisations providing NORM workshops
- Closer ties with the IAEA was suggested to work with their programs and activities
- Noted that some member states are in need of assistance for attendance at programmes and advice.

Collaboration

- TG should avoid duplicating what other groups do.
- TG members are also involved in many groups; for example:
 - European COST Action “NORM4Building”
 - ICRP, C4
 - ENVIRONET NORM project (IAEA)
 - Various IAEA working groups
 - ENA
- IRPA provides a very practical perspective (ie; the voice of the practitioner) which can aid other policy focussed organisations
- Provide consolidated TG input (where appropriate) into key consultations (as recently performed for recent ICRP and IAEA documents)
- FAQs or information sheet be prepared that addresses NORM for the benefit of the public

Summary

- TG is “open for business”
- Excellent experienced and qualified team members
- Promote a “graded approach to regulation” through understanding the risks
- Re-inforce good/better practice
- Provide assistance and communications with stakeholders
- Ensure practical expertise is utilised in policy setting
- Risks in perspective



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