Information Exchange Platforms

ORPNET
UMEX
NORMEX

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ORPNET
Occupational Radiation Protection Networks

First link, if you google “IAEA ORPNET”

https://nucleus.iaea.org/sites/orpnet/home/SitePages/Home.aspx
• Web-based network with an ultimate goal to promote optimization of the occupational radiation protection.

• It acts as a focal point for the occupational radiation protection providing:
  • Worldwide comprehensive knowledge / information exchange,
  • Global, regional and national networks (targeted to systems for radiation protection of workers).

• The user can find also information about
  o the upcoming occupational radiation protection related meetings,
  o latest publications,
  o joint projects,
  o posters, and news.

• ORPNET spreads good practices, facilitates ALARA implementation, supports experience exchange, and aims to prevent any overlap of activities at the national and international level.
World-wide networks

- International System on Occupational Exposures (ISOE)
- International System on Occupational Exposure in Medicine, Industry and Research (ISEMIR)
- Information System on Uranium Mining Exposures (UMEX)

Regional networks

- RECAN (The Regional European and Central Asian ALARA Network)
- ARAN (Asian ALARA Network)
- REPROLAM (Red de Optimización de Protección Radiológica Ocupacional en Latino América)
- EAN (European ALARA Network)
- EAN NORM (The European ALARA Network for Naturally Occurring Radioactive Materials)
- EMAN (European Medical ALARA Network)
- French regional Radiation Protection Officer’s networks (CoRPAR)
- ESOREX (European Study on Occupational Radiation Exposure)
ORPNET e-Newsletter

News – June 2019

The Role of Industry in NORM Policy and Decision Making – a Practical Perspective

Free online lecture with invited speakers from Australasian Radiation Protection Society (ARPS) and United States Environmental Protection Agency (EPA).

Registration: https://mailchi.mp/8dc89d5e14d3/orpnet
Information System on Uranium Mining Exposures (UMEX)
An IAEA Survey of Global Uranium Mining and Processing Occupational Doses

https://nucleus.iaea.org/sites/orpnet/worldwide/umex/SitePages/Home.aspx
UMEX – The Idea

- For nuclear industry workers there are a number of databases of occupational doses at both international and national level (Information System on Occupational Exposure, ISOE)
- Similar systems have been developed for medical exposures and industrial workers (ISEMIR)
- The Information System for Uranium Mining Exposures (UMEX) was designed to examine global occupational exposures in uranium mining and processing
UMEX – The Design Requirements

• Important requirements and information to collect:
  – **Capture as many of the uranium workers** as possible across a wide number of jurisdictions
  – Need to know the **type of operation and nature of the work** being performed
  – Need to understand the **key assumptions used to monitor and calculate exposure and dose**
  – **Collect dose information** based on individual pathways
  – Ideally wish to know the **underlying dose distribution**
  – **Record primary control mechanisms to optimise dose**
UMEX – The Design, Limitations & Solutions

- **PRIVACY** – A critical limitation so only amalgamated information received to prevent with no personal identifiers
- **EASE of USE** – To enable the widest possible response needed to make the data entry easy and quick (*otherwise it would not happen*)
- **Multiple Dose Databases** – Used national regulator to determine which is and use the official dose register
- **Variability** – Combination of drop down menus, information tabs and free form fields to structure data entry
- **Different Dose Methodologies** – Capture as much information about monitoring and dose calculation methodologies
UMEX – The Response

• The survey provided a snapshot of the doses in the 2012 calendar year
• Occupational data from 36 operating facilities were received
• This covered production of 58,344t of uranium or approximately 85% of global uranium production
• Amalgamated dose data was received from in excess of 30,000 workers
UMEX – The Results

• They characterise an industry where occupational exposures are well controlled and doses remain within applicable limits

• Average doses were typically less 5mSv/y and the maximum individual dose was 16.5mSv/y

• Majority of doses to personnel were below 2mSv/y
Example of UMEX USE: Different Dose Distributions

• Distributions of doses heavily influenced by the choice of workgroup and who is included
• This distribution variability raises questions about the use of normal statistical methods for interpreting doses
• Also may call into question the use of average dose and how workgroups are defined
• The original UMEX provided a 2012 snapshot of occupational doses in the uranium industry
• The response covered approximately 85% of global uranium production
• The doses show compliance with international recommendations and represent good practice globally
• The findings of the project are incorporated in the IAEA Safety Report (SR-100)
Web-based Information Exchange Platform on ORP in Industries involving NORM (NORMEX)

- Proposal - to develop an overview tool (or a database) through a Working Group to better share RP operational management experience among various industries involving NORM.
- The quantities of NORM, and hence the resulting exposures to workers, differ widely from field to field.
- Lack of real data (as opposed to theoretical assessment) regarding actual exposure of workers in NORM activities – especially regarding internal exposure.
- ORP data is the key for decision making (data from literature or with a survey).
- Measurement of activity concentrations of NORM in any field, and generic modelling of the behaviour of workers, will allow average exposures to be assessed.
- Following this approach, a possible mode for the control of exposures in industries is that the regulatory body, after consultation with the industry, establishes (regulatory guidance document) a level of dose and a methodology for dose assessment.
  - A methodology for acquiring and validating relevant ORP data and regulatory modalities
  - A methodology for analysis and effective dissemination of relevant ORP data (realistic radiological impact assessment)
  - Establishment of a web-based information exchange platform
  - An IAEA report addressing approaches.
Thank you!

IAEA ORNET: https://nucleus.iaea.org/sites/orpnet/home/SitePages/Home.aspx
IAEA UMEX: https://nucleus.iaea.org/sites/orpnet/worldwide/umex/SitePages/Home.aspx