

Historical background and role of ALARA Networks

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Occupational Radiation Protection Unit

RSM, NSRW



IAEA

International Atomic Energy Agency

Occupational Radiation Protection

- Occupational exposure: Exposure of workers incurred in the course of their work
- Under three exposure situations
 - Planned exposure situation
 - Existing exposure situations
 - Emergency Exposure situations
- Following the three ICRP principles
 - Optimization of protection and safety is the cornerstone in the radiation protection programme in authorized practices

Optimization and information exchange

- Assessment of exposure situations
 - Global evaluation of the exposure situation
 - Design and operational stages
 - Job specific evaluation and analysis .
- Means of reducing exposure
- Defining and implementing an ALARA plan
- Data collection for the evaluation and experience exchange
 - Facility level and national level
 - International level
 - **ALARA network needed**

ALARA networks

- To prompt the implementation of radiation protection optimisation
- To maintain and develop competences on ALARA for routine operations and other different situations
- To contribute to harmonisation of radiation protection policies and practices, particularly concerning radiation protection optimisation, at regulatory and operational levels
- To cover radiation protection for all types of practices within different sectors-**regional networks**

Two leading examples of networks

- Information System on Occupational Exposure (ISOE)
- European ALARA Network (EAN)

ISOE: Information System on Occupational Exposure

- Regular meetings of RP managers NPPs in Europe around 1990
- **ISOE was launched by the OECD/NEA in 1992**
- Forum for occupational radiation protection optimization at NPPs
- To facilitate the exchange of experience in the management of occupational exposure among utilities and regulatory authorities
- IAEA joined the ISOE since 1993 to allow the participation of Member States not in the OECD NEA with NPPs
- IAEA provided Joint ISOE Secretariat since 1997

Creation of European ALARA Network (EAN)

- ALARA principle has been part of the European Basic Safety Standards and has been introduced into national regulations since 1980
- ALARA principle was re-emphasised as the cornerstone of the radiological protection system in the Euratom Directive 96-29
- ALARA was integrated into many organisations radiation protection programmes throughout the 1980s and early 1990s particularly in the nuclear industry.

Creation of European ALARA Network (EAN)

- EAN was created by the European Commission in 1996
 - To deal with optimization of all types of occupational exposure
 - To facilitate the dissemination of good ALARA practices within all sectors of the European industry and research. .
- Key outputs:
 - Annual workshop and twice yearly Newsletters
 - To provide recommendations to the EC and other stakeholders involved in radiation protection.
- Coordination : CEPN (France) - HPA (UK)

International Conference on Occupational radiation Protection and Action Plan

- First International Conference on Occupational radiation Protection-Geneva, 26-30 August 2002
- Occupational Radiation Protection: Protecting workers against exposure to ionizing radiation
- Hosted by the Government of Switzerland
- Organized by the IAEA and convened jointly by the ILO
 - Co-sponsor: EC
 - Co-operators: 7 international organizations
- 328 participants from 72 countries and 12 organizations

International Conference on Occupational radiation Protection and Action Plan



- First International Conference on Occupational radiation Protection - Geneva 2002
- International Action Plan on Occupational Radiation Protection (IAPORP), led by IAEA and ILO, supported by other organizations

International Conference on Occupational radiation Protection and Action Plan

IAPORP approved by IAEA Board of Governors in Sept. 2003

- Led by the IAEA and the ILO, supported by other organizations
- 14 actions
- All of the actions were completed and some of them become routine activities.
- Reviewed and oversighted by a Steering Committee



IAEA

Action Plan for Occupational Radiation Protection

Fourteen proposed actions under nine headings:

- ILO Convention 115 (Actions 1-3)
- The ILO code of practice (Action 4)
- Co-operation IAEA – ILO (Action 5)
- **Information exchange (Actions 6, 7)**
- Education and Awareness (Actions 8-10)
- Exposure to natural radiation (Action 11)
- Holistic approach to workplace safety (Action 12)
- Protection of pregnant workers (Action 13)
- Probability of causation (Action 14)

Action 7 in IAPORP

- The IAEA to provide a focal point, on a website, where networks may be established for exchanges of information, experience and lessons learned between interested parties.
 - Web site : Occupational Radiation Protection Networks (ORPNET)
 - Networking : ISEMIR and new regional networks

ORPNET: Focal point for ALARA Networks

- ORPNET: Occupational Radiation Protection Network
- As one of the actions in the Action Plan IAPORP
- To provide a focal point for exchange of information on occupational radiation protection through networking
- <https://nucleus.iaea.org/sites/orpnet/home/SitePages/Home.aspx>
- Launched in September 2010
- Improved in 2011, still in a growing stage

ORPNET: Focal point for ALARA Networks

- Providing information on occupational radiation protection
 - Worldwide comprehensive knowledge / information exchange,
 - Global, regional and national networks
- Users can find also information about
 - upcoming occupational radiation protection related meetings
 - latest publications
 - Training packages/E-learning
 - Software/tools
 - 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.

ISEMIR: Information System on Occupational Exposure in Medicine, Industry & Research

- Arising from the International Action Plan on Occupational Radiation Protection
- Based on experience of ISOE (NPP operators)
- Initiated in 2009, formally released in June 2017
- Specific topical areas:
 - Industrial radiography: ISEMIR IR
 - Interventional cardiology: ISEMIR IC
 - **NORM industries: ISEMIR-N** (under development)
- Online web-based information system
- Tool for optimization of occupational radiation protection
- Global survey on ISEMIR-IR during Oct. 2020~March 2021

A tool for the implementation of optimization of ORP

RECAN: Regional East European and Central Asian ALARA Network

- Starts with history of Central and East European ALARA Network (CEEAN) initiated by IAEA in 2002.
- CEEAN was an important stage in creation of RECAN
 - proved that networking might be living and useful,
 - raised an interest to such kind of information exchange.
- Main outputs
 - Consist of the organization of workshops, publication of a Newsletter and exchange of information through a dedicated website.
 - Links to other networks covering many RP areas.

RECAN Management

- Operates under the control of a Steering Committee
 - Consists of at least 6 members elected by the national representatives,
 - the coordinator of RECAN,
 - one representative of the IAEA (observer status),
 - one representative of the EAN
 - national representative from the host country of the next RECAN activity (such as workshop).
- The network consists of more than 20 countries from Eastern and Central Europe and Central Asia.
- **Current status: not operational since 2015, to be reactivated.**

ARAN: Asia and Pacific ALARA Network

- Kick off meeting in Korea Dec 2007
- 17 countries from RCA as participants
- Japan - Chair, SC
- Republic of Korea – Vice Chair, SC (to 2010)
- Australia- Vice Chair(since 2010)
- **Not operational since 2014**
- Meeting for reactivation : **May 2021**
- Management board meeting: **Nov. 2021**

ARAN: Asia and Pacific ALARA Network

- First Workshop on Industrial Radiography in Japan, October 2008
- Second Workshop on NORM in China , October 2009
- Third Workshop on occupational exposure in medical applications Australia – Adelaide , October 2010
- Other important workshops

Latin America ALARA Network-REPROLAM

- REPROLAM was created in a meeting at the Institute of Radiation Protection and Dosimetry (IRD) in R o de Janeiro, Brazil in June 2011.
- Statutes & Steering Committee were accepted. (Argentina, Brazil, Peru, Costa Rica, Uruguay, IAEA)
- 12 participating countries at the beginning
- Under the framework of TC Latin America
- Newsletter, workshops, etc.

Initiation of Africa ALARA Network

- Decision in RCM in Feb 2017 in Dakar
- Working Group Meeting to Establish the ALARA Network in African Region
 - 10-12 October 2017, Vienna
 - Nine experts
 - T&C proposed
 - Network: AFAN



Launch of Africa Regional ALARA Network

- AFAN was established on 5th December 2017 during side event of IAEA/ILO Regional Workshop on ORP (Antananarivo, Madagascar)
- Under the framework of the IAEA TC projects
- Host/Secretary: Ghana
- Steering committee, Chair, two vice chairs

ALARA networks

- An important approach for ORP optimization
- Global networks
 - ISOE
 - ISEMIR (IC, IR)+NORM
- Regional ALARA networks
 - RECAN, ARAN, REPROLAM, AFAN-supporting
 - EAN-observer
- Other networks on specific topics
- Focal point of the ALARA networks: ORPNET

Challenges for the ALARA Networks

- Sustainable development
- Involvement of different stakeholders on occupational radiation protection
- Cooperation among different networks

Websites for the ALARA Networks

- ISOE: <https://isoe-network.net/>
- ISEMIR: <https://nucleus.iaea.org/sites/orpnet/home/SitePages/Home.aspx>
- EAN: eu-alara.net
- AFAN: <https://african-alara.net/>
- REPROLAM: <http://www.reprolam.com/>
- ARAN: to be recreated
- RECAN: to be recreated
- ORPNET: <https://nucleus.iaea.org/sites/orpnet/home/SitePages/Home.aspx>

Thank you



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