

EU SCIENTIFIC SEMINAR 2015
RISK COMMUNICATION TO WORKERS
John Billard

John Billard

(presented by Richard Wakeford on his behalf)

- **Former union National Secretary at Prospect**
- **Responsibilities in the UK nuclear industry 1992-2006**
- **Chair of the UK Nuclear Industry Compensation Scheme for Radiation-linked Diseases (www.csrid.org.uk) 2007 - current.**

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Who are the workers?

What is the risk?

The regulations

What is the communication?

Difficulties in communication

The UK risk-assessed compensation scheme

Overview

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Exposed workers with an annual dose

| | |
|--------------------------------|---------|
| Above ground (radon) | 4.8 mSv |
| Aircrew | 2.7 mSv |
| Nuclear cycle including mining | 1.8 mSv |
| Industrial radiologists | 0.5 mSv |
| Medical workers | 0.3 mSv |

Source UNSCEAR

UK NRRW includes 175,000 radiation workers in the UK up to 2001

Recent epidemiological studies of workers indicate a radiation-related risk of cancer, but also a “healthy worker effect”.

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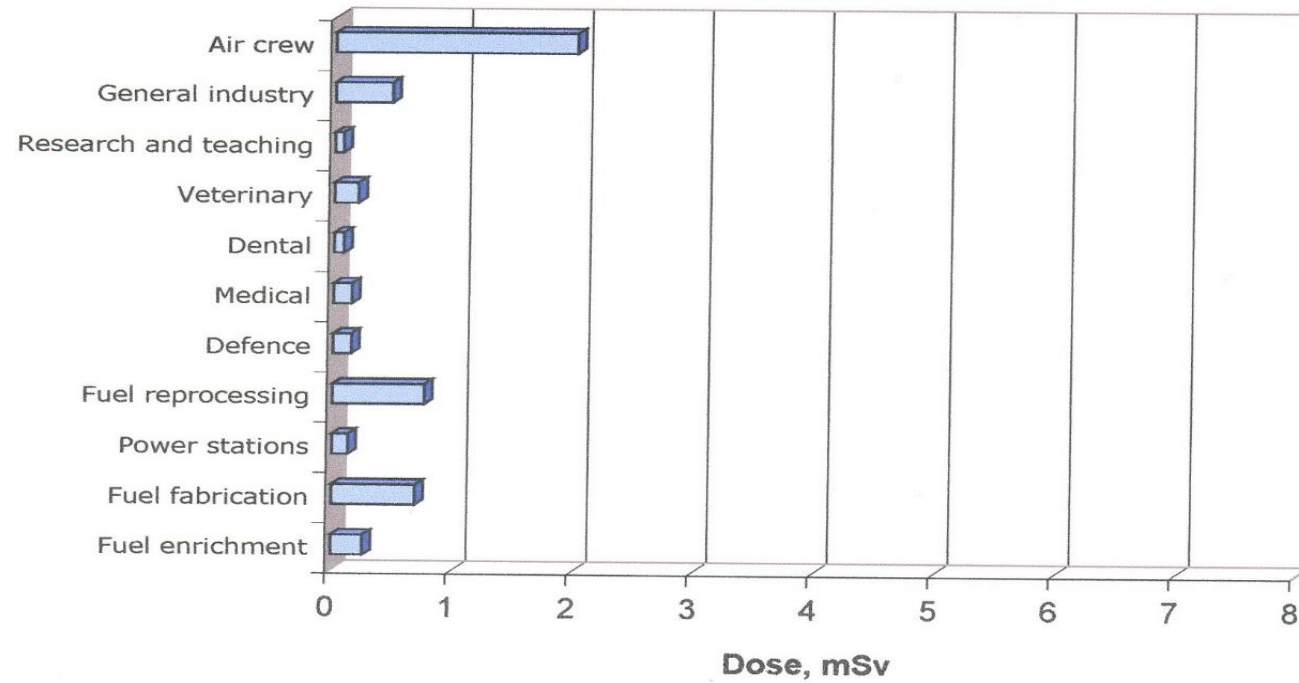


Figure 15 Average doses from various occupations

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| | |
|----------------------------------|-----------|
| Chest X ray | 0.02 mSv |
| Transatlantic flight | 0.07 mSv |
| CT scan of head | 1.4 mSv |
| UK population background average | 2.2 mSv* |
| CT scan of chest | 6.6 mSv |
| Radon dose in Cornwall | 7.8 mSv |
| Whole body CT scan | 10.0 mSv |
| (UK worker legal limit | 20.0 mSv) |

*not required to be taken account when calculating industrial radiation exposure

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IRR99 Regulation 14 requires that all employers should ensure that radiation workers: -

have appropriate training and to know the risks to health,

the precautions that should be taken and the importance of compliance with the law,

adequate information is given to persons directly concerned with this work,

and that female employees are made aware of the possible risk to the foetus and a nursing infant.

IRR99 Regulation 15 requires that separate employers on a common nuclear site should cooperate and share information with each other.

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It is essential that it is communicated that cancer is the consequence of radiation exposure; that there is a close linear relationship with dose which is likely nevertheless to be at low levels and long term i.e. the greater the dose over time the greater the risk. It must be explained that this risk is real but remains very small e.g. a risk factor covering all cancers is at 5 in 100,000 people per millisievert (mSv) or 0.005 percent causation probability per mSv. (INWORKS 2015)

Low doses of radiation are considered acceptable in the work place and in the environment because they present similar risks to those we accept as part of living in an industrial society. Additionally, such cancer risk should be seen alongside the risk in society i.e. about 1 in 3 of the general population incurs cancer from any cause and 1 in 4 dies from it.

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Such risk communication is dependent on cooperation between the regulators, employers and workers. They should be seen as part of the same team. Otherwise there may be impediments that prevent an optimum solution. Cooperation with the workers always provides a better outcome than the alternative. There is a joint interest to protect the worker and the employer in the conduct of its business.

Trust is needed between the parties to provide the best communication. Fortunately, the UK nuclear industry has a tradition of effective worker representation and trade union membership remains at a comparatively high level.

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Risk communication at a UK nuclear licensed site (Site A)

- Induction training for all people on the site
- Specific training for radiation workers and including for example emergency response teams
- Radiation Protection Supervisor training looking at risk factors and biological harm
- Documentation reviewing risks, radiological assessments and safety cases
- Briefs to workers starting a task
- Learning from experience

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However according to another large UK nuclear site employer (Site B)

“There appears to be no company strategy/policy that covers the communication of risk. Rather it is addressed in a piecemeal way depending on the target audience e.g. reference is made in induction training to radiation workers, in local liaison with the public and, rarely, by counselling of workers.

This has been arrived at due to the low doses that are now recorded and therefore a general lack of interest in the workforce. In practice real interest is only expressed post-incident where additional dosimetry (e.g. faecal sampling) is provided. In these cases it is treated very much on an individual basis”.

Following this up with the appropriate Site B local trade union representative no concern was expressed at the level of training and it was thought that IRR 99 was being complied with at the site. However, it may be significant that the union appeared to have no role or control in the matter.

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- By contrast at a further large nuclear licensed site (Site C) it is reported that the management recognises that they have a duty of care to regularly consult with the trade unions and considerable union health and safety training is paid for and there is regular dialogue on safety and radiological issues to the benefit of both sides. On that basis assurances that risk communication based on IRR 99 at that site is handled effectively is that much more likely to be accurate.

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INTERNATIONAL LABOUR ORGANISATION

Convention 21

Requires that those workers who have developed cancer as a result of occupational exposure to radiation should be compensated.

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Overview

Plus

- Cancer and the radiation effect have been well studied
- Legal requirements have to be met (e.g. IRR99)
- Worker representation improves risk communication
- Compensation schemes should be communicated

Minus

- Low doses can cause complacency
- Misunderstanding between acute and chronic risks
- Organisational change can cause rift