Improving the Radiation Protection Safety Culture in the UK

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Introduction

• The most effective way to improve safety in an organisation is to embed safety into its culture

• Everything else is treating the symptoms
What is RP Safety Culture?

• Our focus is RP Safety Culture, but this is part of the wider whole

• Fundamentally, it is the values and behaviours in an organisation and its members that make safety the overriding priority - “The way we do things around here”

• Many organisations have done tremendous work in this area (INPO, IAEA, NRC) - we are not starting from a blank sheet of paper
Examples of a Strong Safety Culture

There are a number of behaviours which are typical of a strong Safety Culture – the following are examples:

• Everyone feel **personally** responsible for safety
• Leaders **demonstrate** their commitment to safety
• **Trust** permeates the organization
• A **Questioning attitude** is cultivated
• **Open reporting** of problems and errors **without** blame

And, crucially, **good operating performance**
Key Areas of Interest

• SRP set up a Working Group which has focussed on two main sectors

• The Medical sector dominates man-made dose to the Public

• The Nuclear sector dominates man-made dose to Employees

UK Health Protection Agency, HPA-RPD-001, Ionising Radiation Exposure of the UK Population, 2005 Review
Overview of Medical Issues

- UK Health Protection Agency has estimated that average radiation dose to the UK public from all diagnostic X-rays has increased by about 20% over the last 10 years to 0.4 mSv - equivalent to about 24,000 person Sv.

- While the risk to an individual is tiny, the collective risk is significant.

- Any reduction in unnecessary dose could therefore give significant benefits.
Medical Issues

• Medical Safety Culture is complex – the whole purpose is to make the patient's life better
• Diagnostic imaging is a critical tool for this
• The focus must therefore be to help the decision makers to
  – reduce unnecessary dose
  – optimise the necessary dose
• Audits show there is still significant scope for reductions in unnecessary x-ray referrals
Computed Tomography Scanning

- CT scanning now accounts for ~70% of the dose from all X-ray procedures
- ~3.4 million CT scans in 2008 - a rise of 140% in 10 years.
- Clinical benefits from CT scanning are huge, but optimisation is essential
- Interestingly, ~20,000 (0.6%) of CT scans were self-initiated by individuals who did not show any symptoms
- The UK Committee on Medical Aspects of Radiation in the Environment (COMARE) have strongly recommended that whole body CT scanning of asymptomatic individuals should cease
Overview of Industrial issues

• Nuclear industry also faces major challenges, as work moves from operations to decommissioning
Overview of Industrial issues

• A great deal of work has been done in the past decades to reduce radiation dose to workers

• One of the main contributions is the replacement of old facilities with new

• Minimising radiation dose was one of the highest priorities
Decommissioning Issues

• Decommissioning involves resuming work in the same facilities responsible for the high radiation doses of the past

• The work can also be more challenging than the past
  – Decommissioning of Reactors, caves, fuel ponds etc.
Where do we go from here?

- The Working group has produced a **draft action plan**
- The plan contains **proposed actions** which we believe will help improve the RP Safety Culture in different organisations
- This is reliant on the **key RP Professionals on the ground (ourselves)** to adapt it to our needs, to implement the relevant elements in our work
- There are a number of important issues
Knowledge of Radiation Risks

- Improvement in awareness and technical knowledge greatly assists a strong safety culture
- Particularly understanding of radiation risks for the benefits are critical
- Need to match to the needs of the profession and the individual
  - A Board member needs different knowledge to a Nurse, Front line worker or Technician
  - The knowledge required by different roles need to be identified in training programmes
Role of the Radiation Protection Advisor & Medical Physics Expert

- The RPA and MPE (the ‘Qualified Expert’) are key roles, but can be misunderstood
- The role is to assist the employer to optimise dose and to maintain legal compliance
- To an employer, it can appear that the role is about creating hurdles to getting the job done simply and effectively
- The RPA/MPE needs to be a change agent, influencing all levels from senior management to the shop floor
- This demands good ‘soft skills’ of communication and persuasion
- SRP and Partner Societies need to be able offer help where needed
Radiation Protection Supervisors (RPS)

• The RPS is usually a front line Supervisor
• Responsible for both management and radiological safety
  – crucial role in developing and maintaining a strong Safety Culture
• Workload is often high with competing pressures.
• Can result in operational priorities taking precedence over control and optimisation of dose.
Regulators

• Regulators are a critical stakeholder group
• Inspectors have a powerful opportunity to offer support and encouragement for developing an effective RP culture.
The Professional Bodies

• The professional bodies (SRP and the Partner Societies) can help promote the development of a strong RP culture.
• Interact with key stakeholders to help improve understanding and support
  – Regulators
  – Employer Organisations
• Need to offer support and help to Members to acquire the skills needed.
Learning from experience

- A true learning organisation is a major attribute of a good culture.
- Without it we are destined to repeat the mistakes and ignore the successes of the past.
- Effective Operational Experience Feedback (OEF) is therefore critical.
- This can be challenging, particularly if there are local sensitivities over releasing information or a perceived risk of litigation.
RP Safety Culture Action Plan

• The Draft Improvement Plan is in the paper to assist
  – Medical Professionals
  – Nuclear Industry Professionals
  – Professional Societies
• Focus is on teamwork and communication between RP professionals, senior managers and front line colleagues to encourage
  – Senior managers to adopt improvement in Safety Culture as policy
  – Colleagues to adopt as working principles
• It also suggests how RP Societies can work with decision makers to assist safety culture improvement
How to succeed

• The future is in our own hands
• In the words of Theodore Roosevelt
  – “The best thing you can do is the right thing; the next best thing you can do is the wrong thing; the worst thing you can do is nothing.”
• Thank you for your attention
Further reading


- U.S. Nuclear Regulatory Commission (NRC) *Development of a Nuclear Safety Culture - Final Safety Culture Policy Statement* *(NRC-2010-0282).*


- The Royal College of Nursing in conjunction with SCoR, GCC, CSP, NHS Alliance, RCR, GOC, HPA - *Clinical Imaging Requests from Non-Medically Qualified Professionals*, (2008) *(www.sor.org/auth/forms/login.php?r=documentlibrary/sor_clinical_imaging_requests_non_medically.pdf for members of SoR).*