Fifth workshop on Science and Values in Radiological Protection Decision making

Group C: Ethics of radiological protection in Occupational Exposure situations
Chair Thierry Schneider
Rapporteur: Augustin Janssens
Input from Day 1 presentations

• Ingemar Lund:
  ✓ Bio-markers,
  ✓ Non-cancer effects
  ✓ Need for training and dialogue

• Nicole Martinez:
  ✓ Analysis of ethical foundations of RP System
  ✓ Pillars of Justice and Accountability (solidarity)
  ✓ Engage Stakeholders in ethical decision making

• Don Cool:
  ✓ Would we do things differently if we knew more about the science?
  ✓ Different management of internal and external exposure?
  ✓ Balanced all-hazards approach

• Jacques Repussard:
  ✓ Conservatism in dose estimates, need for monitoring
  ✓ Regulatory issues (RP framework, dose limits, application to specific situations)
  ✓ Unforeseen occupational exposures (post-accidental)
  ✓ Leadership of the RP Expert
Uncertainties and value judgements

• Uncertainties in biological effects:
  ✓ Move in society towards protection of the individual
  ✓ If combined with evidence of individual sensitivity, puts strain on the RP System

• New exposure situations (NORM, radon)
  ✓ Experts trained in RP often have little knowledge of these situations
  ✓ In NORM industries, radiation is not the main concern, how then to apply ALARA?

• Concept of occupational exposure
  ✓ Broad definition: exposure at work
  ✓ Potentially very large number of workers
  ✓ Need distinguish “exposed worker” and “radiation worker”
  ✓ Responsibility of employer/undertaking
  ✓ Radiation worker: specific training, responsibility for own protection, and for safety of other workers, members of the public or patients
  ✓ Occupational health service with specific responsibilities
Uncertainties and value judgements

• Conservatism in dose assessment
  ✓ Difficult to anticipate actual exposures by design
  ✓ Conservatism not compatible with ALARA
  ✓ Importance of worker’s own attitude (benefit of monitoring)
  ✓ Monitoring in NORM industries: individual exposures or workplace assessment

• Broader all-hazards approach:
  ✓ Judgment of the radiation protection expert
  ✓ Bias about importance of radiation effects
  ✓ Lack of knowledge about other aspects

• Post-accidental situations
  ✓ Steel works and scrap metal dealers: orphan sources are a known risk
  ✓ Post-accidental contamination, need for guidelines?
  ✓ Need for an approach to be implemented promptly in case of an accident?
  ✓ Values are the key parameters!

• Probability of causation
  ✓ Uncertainties in cancer causation
  ✓ Non-cancer effects
  ✓ Different approaches for compensation
Values underlying the RP system

• Biological science
  ✓ Importance of continued fundamental research
  ✓ For occupational protection: current knowledge is a sufficient basis
  ✓ Be open of unexpected scientific results
  ✓ Prudence and accountability require emerging issues to be flagged
  ✓ If biomarkers would be found, their existence should not be hidden

• RP System has developed its own paradigms
  ✓ Historical: Euratom Treaty, international BSS
  ✓ Initial focus on nuclear energy, industry
  ✓ Expertise within the radiation protection community, RP authorities, not elsewhere
  ✓ Comprehensive RP System, needs to be fine-tuned to the new situations
  ✓ Differences ICRP and international standards
  ✓ Build framework for occupational radiation protection on the basis of the science and of the values at stake
Future issues, later workshops

• Broader expertise
  ✓ Occupational health officers in other disciplines, other hazards
  ✓ Occupational medicine

• Interaction between:
  ✓ Radiation protection and (nuclear) safety culture
  ✓ Protection of workers and members of the public

• Examine the application of the core ethical values for occupational protection
  ✓ Beneficence/non-maleficence
  ✓ Prudence
  ✓ Justice/equity
  ✓ Fairness
  ✓ Procedural values
  ✓ ...
  ✓ ...