

OCCUPATIONAL RADIATION PROTECTION:
ENHANCING THE PROTECTION OF WORKERS
— GAPS, CHALLENGES AND DEVELOPMENTS

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CORRIGENDUM

1. Pages 276 and 277. The two paragraphs above ACKNOWLEDGEMENTS on page 276 should be replaced by the revised text overleaf. This correction has already been made in the PDF of the publication that is available for download.

The progress made in the NORM industry with particular focus on underground gold and uranium mining is a testament to cooperation between the authorities and operators, but the process did not come without challenges. The following on-going problems are noted:

- a) There are still workers in the 20 to <50 mSv/a exposure grouping(s).
- b) Some ventilation systems are not fully optimised.
- c) Strategies for sealing programmes have not been fully realised.
- d) Integrated Time and Attendance (T&A) Systems not adopted by all stakeholders.
- e) A great number of the workforce makes up “Roaming”; workers who are deployed on levels in shafts with varying degrees of ²²²Rn levels.
- f) Timeously identification of work areas/levels with high ²²²Rn activity concentrations.
- g) Implementation of Worker Radiation Protection Programmes.

Further challenges that have been identified for the near future include the adoption of updated radon and thoron dose conversion factors (DCF) [9]. The regulations are currently being revised and the discussions surrounding the adoption of the radon dose conversions are in effect. The more conservative nature of the recommended dose conversion factors could result in more mines being classified as Special Case Mines.

CONCLUSION

The occupational exposure of workers is paramount, but due to circumstances and the environment that the workers are employed in, a balance between the risks and the benefit are always drawn. However, the workers must be protected and therefore compliance to the legislation must follow explicitly. In areas where cooperation between the industry and the authorities would lead to mutual benefits, i.e. keeping worker doses as low as reasonably achievable and compliance to legislation on the other hand, it must be encouraged to find common solutions. Careful consideration must be given to the updated radon dose conversion factors as the implication for the industry is obvious.

The need for adequate protection from complex exposure scenarios in the workplace brought significant challenges to the fore. The need to mine and produce more product (e.g. Au, U, etc.) enhances the risks to the workers, but with robust regulatory tools and programmes at hand, occupational exposures can be controlled. The responses to the challenges are measured through regulatory inspections and audits commensurate with the exposures at the facility. In cases where non-compliance to the legislation cannot be achieved, more stringent enforcement activities are enacted. The off-set for the cost and effort that go into the implementation of the optimisation and mitigation measures are ultimately seen in the decreased worker exposures. The process of finding workable solutions to the challenges also highlights the role of the Regulator and the role of the operator, but again a key balance is struck as it is the operator’s responsibility to protect its workers. The one key aspect to finding the solution to the challenge is the appropriate response in legislative revisions that should be brought about where gaps exist. Lastly, as is true for the operator, continual improvement in management and reporting systems for the Regulator, would also apply in dealing with challenges and the implementation of its mandate.