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TOTAL WORKER RISK MINIMIZATION

Keywords: CONTAMINATION PREVENTION; DOSE; EFFECTIVE DOSE EQUIVALENT; RADIATION DOSE; OCCUPATIONAL DOSE; RISK; NON-RADIOLOGICAL RISK; RISK MINIMIZATION; TOTAL WORKER RISK

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Objectives: To minimize total worker risk; to optimize worker protection; to minimize adverse impacts on worker performance; to optimize the use of resources.

The basis of total worker risk minimization is to ensure that the emphasis placed on minimizing worker exposure does not result in increased physiological stresses to the worker which can be more detrimental than radiation exposure. In some instances measures to protect workers from radiological exposure may expose them to increased toxic and industrial hazards, which is not the intent of current regulations. The present study aims to gather the data that will allow health physicists to evaluate the hazards of an actual job, identify industrial and toxic hazards and use simple methods to determine the most suitable measures to ensure that workers are adequately protected from all the hazards in an optimum manner.

Comments: The following elements are under consideration in his study:

- * High temperature and humidity -cardiorespiratory stress -heat stress
- * High energy fluid systems
- * High voltage
- * Chemicals
- * Confined spaces
- * OSHA vs NRC requirements -Protective clothing -Equipment
- * Industrial hazards -slipping, tripping, climbing stairs, climbing ladders
- * Noise - communication in noise
- * Contamination control
- * Resuspension of contamination
- * Vibration
- * Ergonomics
- * Shift work

Remarks: The study will be carried out in the following phases:

1. Identify occupational hazards and their incidence.
2. Define the data available in the literature, the data that is missing and the data that is being developed.
3. Define the data available from plants on ergonomics, back injuries, traumatic injuries, chemical exposure, heat, vibration.

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4. Determine what health effects of occupational hazards are being experienced by the workers.
5. Determine the risk reduction measures already in place, e.g. first aid and health services, wellness programs, safety programs.
6. Define priority for collecting missing data including conducting pilot and full scale studies if necessary.
7. Define the tools needed to enable health physicists to minimize total worker risks for specific jobs, e.g. computer code, artificial intelligence, work book.
8. Conduct pilot intervention programs at selected sites.
9. Evaluate intervention programs.
10. Modify tool as necessary and program to ensure broader applicability to the industry.

References: 1. Hornibrook, C., "Radiation Protection - An Overview," Proceedings, EPRI Radiation Field Control and Chemical Decontamination Seminar, Tampa, Florida, November 6, 1995, available from Electric Power Research Institute, EPRI Distribution Center, P.O. Box 23205, Pleasant Hill, CA 94523.

2. Ibid, "Total Worker Risk Minimization: The Future is Now."

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