Environmental Health and Safety

What Does ALARA Mean?

How many times have you heard the acronym ALARA mentioned at either a radiation safety training session, Radiation Safety Committee (RSC) meeting or an audit / inspection conducted by your friendly Radiation Safety staff member? Most of us quickly think; "I know what that means; ALARA stands for as low as reasonably achievable". We should employ time, distance and shielding to reduce our radiation dose. Typically that is the end of it and we move onto something else. Besides trying to ensure that occupational and public exposure to radiation is kept as low as reasonably achievable (ALARA) and complying with regulatory requirements, is there anything else that should be added or known about the ALARA concept?

Once a philosophy, and now regulation, ALARA is the core concept of any Radiation Safety program. ALARA applies to all radiological situations that can give rise to personal dose including both occupational and public exposures to direct and indirect radiation from either radioactive materials, or radiation producing machines. "Licensees are required to make every reasonable effort to maintain radiation exposures, and releases of radioactive materials in effluents to unrestricted area, as low as reasonably achievable." Dose limits are well defined in the Department of Public Health regulations (105 CMR 120.00) and are set to protect individuals from deterministic effects and unacceptable stochastic risk.

Tufts ALARA program incorporates administrative controls (e.g. ALARA I level = 125 mrem) to monitor radiation exposure and is overseen by the RSC. Radiation dose limits are 10% of the established occupational regulatory limits, are assigned to monitor individual radiation dose and to ensure exposures remain ALARA. Committee members meet on a quarterly basis to review the Radiation Safety Program performance and identify areas within the program that could be further developed or improved.

ALARA is promoted by:

1. Providing appropriate training for workers to enhance Radiation Safety awareness.
2. Posting and labeling accordingly to alert personnel to the presence of potential radiation hazards.
3. Providing appropriate facilities and equipment to contain radiation and radioactive material including shielding, engineered containment, engineered protective equipment, specified handling tools and personnel protective equipment.
4. Investigating deficiencies, conducting audits and radiological assessment to determine areas for improvement
5. Drafting radiological safety procedures or SOPs and reviewing existing policies or procedures for effectiveness
6. Radiation Safety tracking the performance of the Radiation Safety Program in RSC minutes or metrics

More information concerning the Radiation Safety Program is detailed within the Radiation Safety

Manual located at:
http://publicsafety.tufts.edu/ehs/files/Tufts-University-RSC-Policies-and-Procedures-Manual-3_27_13.pdf