

## **Holistic approach for risk management with regards to public doses from discharges**

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In recent years, the UK Government and the Regulators have made a commitment to further improve the operation of the regulatory regime and to its operating within the principles of proportionality, transparency, consistency and accountability which underpin the Government's approach to regulation in general. Particular emphasis was to be placed upon ensuring that there is greater consistency in the treatment of risk and hazard; proportionate and cost effective delivery of public, worker and environmental protection; and an open and transparently applied regulatory system.

This presentation focuses on the practical application of the regulatory regime with regard to radiation protection. It is noteworthy that with regard to radiation protection, there are different limits for public doses and workforce doses, with the latter 15 times greater. Allowable doses for patients are higher still. This discrepancy raises a question in itself. My work here primarily considers the lowest limits, that is, public doses from discharges. Under the Radioactive Substances Act 1993, Operators within the UK nuclear industry are required to employ Best Practicable Means (BPM) to control and minimise radioactive discharges. The requirement for the use of BPM is in order to ensure that doses from discharges are As Low As Reasonably Achievable (ALARA). Scientific assessments to date indicate that there are no expectations of environmental harm from discharges at Sellafield, even where those discharges have historically been up to two orders of magnitude higher than current levels. Current discharges result in doses which are a small fraction of those received by the UK population due to natural background radiation. There is also no evidence to indicate that foreseeable future discharges from Sellafield will make any contribution to environmental harm. This is supported by independent work which illustrates that the public collective dose from Sellafield discharges is almost all delivered at risks of less than one in a billion per annum, orders of magnitude below the level assumed by NRPB in their 1993 valuation of collective dose. Arguably, the Sellafield Operator has already been driven by the Regulator to go considerably beyond the requirements of BPM with respect to discharges from the Sellafield site, and the resources invested to reach the current very low levels of discharges have been clearly disproportionate to any benefits gained. Despite this, the UK nuclear industry is under intense pressure from the regulatory bodies to reduce its already small discharges still further. This is not the case in other European countries such as France. The consequences of such socio-political primacy in decision making has been a significant contributory factor in driving the costs of UK nuclear generation and waste management to levels where the economics of nuclear generation in the UK have been artificially skewed to make it prohibitive.

This presentation questions the practical application of the aforementioned Government and Regulatory commitment, especially consistency in the treatment of risk and hazard; proportionate and cost effective delivery of public, worker and environmental protection.