

SRP meeting - Moving on from BPM/BPEO: The Integrated Waste Strategy (IWS). Royal Society of Medicine, London, 1st November 2006

This one day meeting attracted 120 delegates and consisted of ten invited presentations and two open forum discussion sessions. The morning session was chaired by Cathy Griffiths OBE, President of SRP who opened the meeting and introduced the keynote speaker, Professor Gregg Butler. Professor Butler spoke about the frequent absence of the correct balance in financial costs vs economic value when demonstrating BPM/BPEO to the satisfaction of the Regulator. In the absence of any real policy or political “buy in” to BPEO methodology, the cost of radiation dose reduction is often many times greater than the proposed £1m to save a life. The current policy of openness, transparency and stakeholder involvement make it really challenging to attain a justifiable balance in the decision making process. It is tax payers money that is being spent, and money spent on risk reduction and discharge abatement will not be available to spend elsewhere, such as for improvements in health provision, education and transport schemes. There is an outstanding need for an explicit methodology to measure where money is being spent that is not delivering sufficient benefit, and yet to arrive at a quantitative definition of “grossly disproportionate” would be difficult if not impossible. Achievement of the correct balance for societal benefit will depend on the effectiveness of the BPEO. Progress can be made by quantifying and balancing hazard reduction as a progress measure against increased time and increased cost, accepting that in some circumstances, increased discharges are both necessary and justified. Professor Butler concluded by stating that he believed that the introduction of the IWS is irrelevant to achieving BPEO/BPM.

Professor Lynda Warren then provided an excellent presentation on the legal origin and interpretation of BPM/BPEO in UK Law, clarifying that BPM/BPEO is a uniquely British approach, with BAT being practised throughout Europe. She identified that in fact the main consideration when producing a BPEO assessment centres on the impact to humans rather than the environment, despite it being named “best practicable environmental option”. The BPEO assessment is a procedure rather than an outcome and involves consultation. Whereas the costs to deliver the BPEO should be acceptable, there is nothing in law to say who decides it is acceptable and to whom? Professor Warren concluded her presentation with some personal thoughts and observations on BPEO/BPM and the current shift towards the IWS. There often is no single best practicable environmental option, and often we forget the underlying purpose of the BPEO – protecting people and the environment in a proportionate way. It is questionable whether the move towards the IWS is actually a positive way forward or just the addition of yet another layer of complexity for operators.

Robert Smith, policy advisor from the Environment Agency explained how the BPEO assessment is used to inform the development of the optimised IWS. The IWS was developed as an output of the tripartite working group set up between the NDA, regulators and operators. To achieve optimisation, you

need to define the optimisation function of the parameters under consideration, the boundaries you want to optimise and then apply constraints and consider uncertainty in getting the right balance. Of necessity, this will involve stakeholder engagement. Mr Smith informed that the Environment Agency believes that the IWS has the potential to deliver an accelerated programme of decommissioning & clean up as it will facilitate looking more holistically across sites and the sharing of best practice. In the environment, the IWS would focus on the important issues that need to be resolved and the critical facilities that need to be developed or protected. Among the nuclear sites in the UK, the sharing of R&D, innovation & waste treatment facilities between sites, could lead to the common waste issues being addressed cost effectively.

Mr Terry Selby talked on the NDA's approach to integration and optimisation of waste strategies for its sites. He highlighted that waste management is a key strategic issue for the NDA as it accounts for a large proportion of the £64b expenditure for UK decommissioning and clean up. The BPEO assessment is required as the environmental decision process in developing the IWS. The integrated waste management strategy plays a key role in ensuring optimised work plans and is used to drive improvement. The objective is not just to achieve effective delivery of work plans but effective delivery of the **Right** work plan. Terry identified that joined up thinking will be necessary to achieve integration, optimisation and engagement of stakeholders in developing the IWS, which has the potential to deliver savings to the tax payer.

Dr Andy Baker of the Environment Agency then gave a presentation on the technical issues that will lead to optimisation of near-surface waste repositories, highlighting the factors that need to be considered. He provided examples of waste facilities in other European countries and identified how an emphasis on application of the waste management hierarchy has resulted in the optimisation of the design for waste repositories. The design needs to balance out all of the variables and constraints, not ignoring the importance of location, especially since the UK has coastal erosion problems.

The morning session concluded with a 30 minute open forum, where the speakers collectively responded to a range of questions and comments from the floor. Robert Smith of the EA was in high demand to respond to the questions posed by the delegates.

The afternoon session was chaired by Professor Butler and focussed on the experience of both nuclear and non-nuclear users in working with the requirements to demonstrate BPM/BPEO. The first speaker was Dr Mike Gardiner from AWE, who spoke about three projects relevant to their site. He identified that it is possible to produce a good BPM but on the wrong strategy because the BPEO output was incorrect. This echoed a point raised by Professor Butler during the morning session. Mike further spoke about how BPM/BPEO are moving targets and identified the need to re-visit them. The next speaker was Hugh Abbott from GE Healthcare, who provided a useful comparator on how well our European competitors meet BPM/BPEO

requirements through their application of BAT (best available technology). He re-iterated a point raised previously by Professor Warren, that BPM is uniquely applied in the UK with Europeans not understanding these terms. He provided a useful comparison between Germany, France, Sweden, the Netherlands and the UK on performance in meeting BAT, or BPM/BPEO in the UK. The requirements are more rigorous in Sweden and the Netherlands, UK came in the middle, with a more flexible approach taken in France, with the least restrictive requirements being applied in Germany. For a worldwide company such as GE Healthcare, it is important to recognise that should the impact of regulatory requirements become unduly burdensome in the UK, there is always both the risk and the opportunity to locate their business elsewhere!

Martin Clough of British Nuclear Group then spoke about experience gained and lesson learned from the application of BPM/BPEO requirements to the clean up of the Sellafield site. He spoke about the increasing expectations from the EA regarding BPM and BPEO assessments during the past three years. BNGSL has responded by developing and implementing new procedural arrangements as part of the Site Management System. Over one year commencing October 2004, BNGSL developed and submitted to the EA, BPM cases for >40 plants, such that all major operations on the site are now covered by a BPM case. The first version of the BPEO programme was submitted to the EA in September 2006 and was developed to cover all major strategic and project work on site. BNGSL has taken the decision to integrate the BPM and BAT assessment process, to cover both radiological and non-radiological impacts as part of an Integrated Environmental Assessment (IEA), as they develop the Safety Case.

Dr Peter Marsden of UCL Hospitals then gave both an interesting and amusing presentation on the impact of installation of radioiodine decay holding tanks in a PFI build hospital. Whereas the regulators have previously stated that the installation of decay tanks should be considered for all new hospital builds, the PFI went ahead and installed them ahead of estimates of the impact on worker radiation doses being calculated. Whereas the £0.5m spend to install five decay storage tanks, linked in series below ground, had the potential to reduce the dose to the sewerage treatment workers by an estimated 179 μ Sv/annum, this was at the expense of an unacceptable increase in the dose to the hospital maintenance staff of around 1.5mSv/annum. The question must be asked as to whether the equivalent of a £5m spend was justified to save a dose of <1mSv/annum to the sewerage workers, and can this really be called demonstration of BPM? The last speaker of the afternoon was Mrs Penny Giorgio of the University of Surrey. Penny provided a very useful insight into how they had structured their BPM documentation at the university, linking it to a number of procedural documents that existed on campus. Their BPM document itself is four pages long, and this contrasts quite markedly with the >1000 pages of documentation produced by BNGSL. Penny went on to identify how BPM documentation requirements can be structured to minimise effort when dealing with complex NHS Trusts operating on a number of sites, as well as providing an example of an options appraisal suitable for an incineration

company requiring disposal of spent lime from its acid gas cleaning system. The afternoon concluded with an open forum, providing the delegates with the opportunity to further quiz the speakers about their experiences in meeting BPM/BPEO requirements.

Overall it was an excellent meeting that stimulated a good deal of discussion and provided ample opportunity for sharing knowledge and experience. A key theme arising from the day was that concern exists that the move towards the IWS might just be the addition of a further level of bureaucracy, and that optimisation of expenditure is likely to require further refinements to existing BPEO assessments.

Sonia Nuttall & Cathy Griffiths OBE