

NEA Workshop on Good Practice in Effluent Management for New Build

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The NEA Committee on Radiation Protection and Public Health (CRPPH) asked in 2006 how optimisation and best available techniques (BAT) would be assessed and implemented for the management of effluents from new plants. To answer this question, the CRPPH established the Expert Group on Best Available Techniques (EGBAT) to develop a preliminary report, and organised a workshop, held in January 2012, to invite regulators, operators and reactor vendors to discuss their understanding of best approaches to effluent management.

Expert Group Objectives:

- Comparison of discharge data for potential new build reactors.
- Discussion of discharge data with stakeholders, e.g. reactor operators and vendors.
- Organisation of a workshop on BAT with regulators, operators and vendors.
- Preparation of guidance on BAT, potentially with input into the Multinational Design Evaluation Programme (MDEP).

Workshop Input Document (available at www.oecd-nea.org/download/crpph/EGBATWorkshop24-26January2012.html).

1. Introduction
2. Optimisation in Relation to Effluent Management
3. BAT
4. Examples of Discharge Management
5. Examples of BAT Application
6. Comparability of Discharge Data
7. Use of Collective Dose (in Optimisation and in BAT Assessment)
8. Continual Improvement Approaches for Optimisation and BAT
9. Assessment for Facility Design through Facility Decommissioning
10. Conclusions

Annex 1: BAT for Facilities Outside of the Nuclear Fuel Cycle

Annex 2: Representative Discharge Data (supplied by Sizewell B)

Annex 3: Representative Discharge Data from Finland, Annual Report of Finland, 2008 Radionuclide discharges from nuclear power reactors during normal operation

Annex 4: Information from Sizewell B (UK) Regarding Discharge Measurements

Annex 5: United Kingdom and United States Studies of Historic Nuclear Reactor Discharge Data

Annex 6: Examples of Potential Abatement Techniques

Annex 7: Ancillary Strategic Issues to the Implementation of BAT

Workshop Objectives:

Identify those optimisation and BAT effluent management aspects on which there is agreement, and on which there still remain questions, for example:

- What are the aspects of effluent management that characterise good practice?
- How can bridges be built between good operating practice for Gen-III and New Build.
- What aspects of monitoring and reporting could use some form of harmonisation, and why?
- If you had no constraints to improving your system, what would you change? What priority would you identify to select from such a list of possible improvements?

Workshop Results:

As a result of discussions a series of key questions were identified:

- Will the requirements for new build be more restrictive than for older designs?
- To what extent will the Fukushima accident have an impact on new designs?
- How much conservatism or realism should be used in modelling doses from effluents?
- How should human health effects and environmental impacts be balanced?
- How is proportionality achieved when looking at “costs and benefits”, particularly in terms of such aspects as protection of workers and the public, nuclear safety and effluent management, radiation protection and other risks?
- What types of criteria are the most effective, e.g. optimised dose levels, screening levels, radionuclides with the most significant contributions to dose?
- How are “BAT” and “optimisation” interpreted in terms of knowing when enough has been done?
- How should releases of H-3 and C-14 be managed in new build?

Workshop Product:

Answers to the workshop’s key questions will be addressed through a short questionnaire to participants, and through the assessment of workshop discussions and presentations. A final workshop summary report will be issued by the NEA before the end of 2012.