PPCSGN3 –Determining BAT for Part B Activities.

This guidance note is one of a series of notes that provides a detailed explanation of a particular aspect of the Pollution Prevention and Control Regime for Part B activities. In this case, the guidance note provides detail about the concept of BAT for Part B activities. The other guidance notes in this series are:

- PPCSGN1 The PPC Part B Application Procedure.
- PPCSGN2 Variation and Transfer of Part B Permits.
- PPCSGN4 The meaning of substantial change and triviality for Part B activities.

All of the supplementary guidance notes should be read in collaboration with the Practical Guide for Part B Activities.

All of these documents are available from your local SEPA office, or from SEPA's website at www.sepa.org.uk.

REQUIRED STANDARDS AND BEST AVAILABLE TECHNIQUES

The Basis for Determining Standards

The principle standard to which installations are required to operate under PPC is that of BAT(Best Available Techniques). The equivalent term under the EPA 1990 was BATNEEC: Best Available Techniques Not Entailing Excessive Cost. Due to the requirements specified in the Regulations that in the Determination of BAT, account shall be made of the likely costs and benefits of any measures to be implemented, BAT and BATNEEC are effectively the same.

Operators of new installations are required to demonstrate that BAT is being applied to the operation of the installation at the application stage. Existing operators who transfer to PPC under the deemed application procedure may be required to provide SEPA with supplemental information to confirm that BAT applies to the site.

One important point is that the search for an environmentally sound solution in any situation - such as the manufacture of an industrial product to a particular standard, or the abatement of the environmental impact from an operation - may reveal different options from which a choice may be made. The essence of PPC is that the option chosen should be the best that is available to achieve a high level of protection of the environment.

In determining BAT for an installation, there are two main stages, the first: comparing options at a relatively high level; and the second looking at the detail in the option selected. This might not be appropriate in every case. With some installations, for example, only one choice for control may really be available or some existing installations may be limited in the techniques they apply to an older site. Indeed, the exact procedure to be used will be a matter for case-by-case consideration. The responsibility lies with the operator to justify the manner of operation and explain why this constitutes BAT for a particular installation in a particular location.

It is also important that the procedures and effort devoted to assessing appropriate standards are proportional to the complexity and environmental risk of the installation for which BAT is being determined. The assessment of options should therefore apply a risk-based approach. This should focus on significant environmental impacts and the major advantages and disadvantages of techniques to deal with them, rather than minor points of detail. In some cases, determining BAT may be relatively straightforward, for example where an option is really the only one available or is clearly better than the others. Process Guidance notes for different Part B activities may also identify those areas where normal indicative standards have been established, and those areas where more detailed, site-specific determinations may be needed.

Definition of BAT

BAT is defined by the Regulations as “the most effective and advanced stage in the development of activities and their methods of operation which indicates the practical suitability of particular techniques for providing in principle the basis for emission limit values designed to prevent and, where that is not practicable, generally to reduce emissions and the impact on the environment as a whole”. The component parts of BAT are further elaborated as follows:

a) “available techniques” are those developed on a scale which allows implementation in the relevant industrial sector, under economically and technically viable conditions, taking into consideration the cost and advantages, whether or not the techniques are used or produced inside the United Kingdom, as long as they are reasonably accessible to the Operator;

b) “best techniques” are the most effective in achieving a high general level of protection of the environment as a whole;

c) "techniques" are both the technology used and the way in which the installation is designed, built, maintained, operated and decommissioned.

Regulatory Requirements

The Regulations set out a number of special considerations for BAT determinations listed in Schedule 2 to the Regulations.

Schedule 2 to the Regulations states that:

"in determining best available techniques, special consideration shall be given to the following matters, bearing in mind the likely costs and benefits of a measure and the principles of precaution and prevention -

(1) comparable processes, facilities or methods of operation which have been tried with success on an industrial scale;

(2) technological advances and changes in scientific knowledge and understanding;

(3) the nature, effects and volume of the emissions concerned;

(4) the commissioning dates for new or existing installations or mobile plant;

(5) the length of time needed to introduce the best available technique;

The full implication of this definition is that BAT covers both the plant used in the installation and the way it is operated. Plant, in this context, embraces not only the individual technical components which make up the whole installation but also the manner in which they are connected to make the whole. Operation of the installation, meanwhile, includes management, management systems, numbers of staff, training, personnel competencies, working methods, maintenance, records and monitoring of any releases from the installation. It follows, therefore, that BAT applies to any system (including financial) or personnel based that may have any influence on the installation's environmental impact. This means that adequate technical controls on, for example, polluting releases are not sufficient in themselves. Operating staff must be properly trained and management must ensure that appropriate procedures are strictly adhered to. Management systems will play an important role in this respect.

Determination of BAT

In determining an application, SEPA will need to be satisfied that the installation will be operated in accordance with BAT. To demonstrate this, the Operator will need to show, in a systematic manner, that all reasonable options have been considered prior to proposing the use of specific techniques which the Operator believes to be BAT. Operators should be able to show that they have undertaken the assessment of options with an open mind rather than with the intention of arriving at a pre-determined outcome. In this respect providing clear and transparent information on how the assessment has been undertaken is as important as the actual performance standards proposed by the assessment.

If SEPA accepts the Operator's BAT proposals, subject to satisfactory compliance with other aspects of the Regulations, it should impose corresponding standards in the permit. However, if SEPA is not satisfied with the Operator's proposals, it may impose more demanding conditions or refuse the permit. SEPA shall only impose more demanding conditions where it is reasonable to believe that the Operator will comply with them. If there is doubt, SEPA may need to request further information from the Operator in order to review new proposals. If this fails to satisfy SEPA, the permit may be refused.

Under the Regulations, there is an implied duty on the Operator to use BAT to prevent or reduce emissions from an installation which are not otherwise covered by specific permit

conditions. As BAT can change with an advance in technology or knowledge of the environment, an Operator must review developments throughout the life of the permit to determine if BAT of the installation has changed. This implied BAT condition is intended to cover the most detailed level of plant design and operation, where the Operator will be in the best position to know and understand what the demands of pollution control are required in practice. For this reason, the Regulations provide that in any proceedings against failure to comply with the implied condition, the onus of proving that there was no better technique available falls on the Operator.

Factors to be considered

Operators need only assess those techniques that are "available" as defined. A technique can be considered unavailable if its costs outweigh its environmental benefit or if it is not reasonably accessible to the Operator. This does not mean that the technique has to be in general use. It would be sufficient if it has been developed or proven at plant or pilot scale, provided that this allows implementation in the relevant industrial context with the necessary business confidence. Nor does it imply a competitive supply market. If there is a monopoly supplier the technique is available as long as the Operator can procure it. The issue of whether the technique is from outside the UK or indeed the EC is not relevant.

Operators should address the associated environmental impacts when considering options.

These should include consideration of any direct or indirect effects on:

a) human beings, fauna and flora;
b) soil, water, air, climate, landscape and cultural heritage;
c) material property, amenities and other legitimate uses of the environment; and
d) the interaction between these factors.

The Operator should identify and quantify all possible releases of substances that could cause pollution of the air environment. A list of the main polluting substances is given in Schedule 5 to the Regulations. However, as this is an indicative list, any other substance capable of causing pollution would need to be considered in exactly the same way, for example any substance with the potential to cause offensive odour.

PPC is also concerned with releases of heat. As with releases of substances, however, it is only necessary to assess this issue in detail if there is a problem to be addressed.
In comparing different effects, consideration should be given to their nature and scale. For example, long-term and irreversible effects may be more undesirable than short-term and reversible ones, other factors (such as immediate severity) being equal.

Economic Assessment

The identification of options and assessment of environmental effects, as set out above, should enable the Operator to rank the available techniques by their overall environmental impacts. The best techniques should then be applied unless the Operator can demonstrate that they are not available on the grounds that their costs would be excessive in relation to their environmental benefits. This may be approached differently depending on whether the installation is new or existing. However, the following general principles should apply in all cases:

a) the cost of the technique must be weighed against the environmental damage that it would prevent; the greater the damage, the greater the costs that can be justified before the technique is considered unavailable.

b) the objective is to prevent damaging releases or to reduce releases as far as possible, taking into consideration the costs and advantages; if applying BAT would still result in serious harm, the application should be refused or stricter measures should be required

c) an objective approach to considering the "what ifs" of BAT is required. The concern is with what costs are justified based on the balance of costs and advantages. The profitability of a particular business should not affect the determination.

Determination of BAT: New Installations

With a new installation, it is expected that the best technique will normally be BAT. If an Operator believes that the best technique is not available on cost grounds, it must justify this conclusion to SEPA. New installations would be expected to meet BAT requirements immediately with no provision given for phasing in of improvements.

Determination of BAT: Existing Installations

With existing installations, the *principles* for determining BAT will be the same as those applied to new installations. The end results or the timescales for their achievement may be different, because of inevitable differences in starting points. The Regulations (Schedule 2) set out a number of principles that are helpful to the determination of BAT or existing installations. In particular, it provides for consideration of "the commissioning dates for new or existing installations" and "the length of time needed to introduce the best available techniques" as well as the more direct environmental issues such as "the nature, effects and volume of emissions concerned". These provisions recognise that new techniques cannot be brought into effect overnight. Therefore it is reasonable for Operators to make the case that improvements should be introduced over a specified time period. When an Operator does this they should set out and justify what measures they propose, what environmental performance they would bring about and the time period over which the improvements are proposed.

SEPA may accept such proposals where reasonable or otherwise impose its own improvements with appropriate deadlines. Either way the improvements specified will be legally binding. SEPA shall take appropriate enforcement action to ensure that they are compiled with.

As a general principle, SEPA should be concerned with establishing timescales over which existing installations can be upgraded to new standards, or as near to new standards as possible, or ultimately closed down. Absolute compliance to new standards will not necessarily be required. For example, for an existing installation that operates to a standard very close to what is currently BAT for a new installation, but using different plant or processes may incur a disproportionate cost to replace the old plant with new techniques for only a small decrease in releases. Therefore the change would be inappropriate. However, if a major modification is to be undertaken anyway, the new plant standards may be applicable.

Site Specific BAT / BATNEEC

All Part B activities are subject to BAT. In general terms, what is BAT for one process in a sector is likely to be BAT for a comparable process but in each case it is, in practice, for SEPA to decide (subject to appeal) what is BAT for the individual process. Variable factors (such as configuration, size and other individual characteristics of the process) and locality (such as proximity of particularly sensitive receptors) will be taken into account when deciding BAT. Ultimately what constitutes BAT is site-specific but Process Guidance Notes (PG Notes) comprise guidance for the generality of processes in the sector and careful regard should be made to this guidance. Domestic guidance on BAT is provided in the form of Guidance Notes, which are used by regulators of Part B processes in England, Wales and Scotland. A list of current PG Note's is available on SEPA's web site at www.sepa.org.uk. The PG Note's will be treated as one of the material considerations when determining any appeals made against a decision under either the 1990 or 1999 Acts. The PG Note's will be updated from time to time in order to keep abreast with developments in BAT including improvements in techniques and new understanding of environmental impacts and risks. Additional guidance is available via Air Quality (AQ) Notes, produced by DEFRA, or Supplementary Notes (SN) adopted by the Scottish Executive. These notes are available on SEPA's website or from your local SEPA office.

Although indicative standards in domestic guidance may often be expressed in terms of parameters such as emission limit values, the techniques to achieve those standards may vary. Operators are encouraged to find better ways of operating installations rather than rely solely on benchmark standards in guidance.

Other Issues

Application of BAT is one of a number of objectives under the Regulations in respect of which permit conditions will be set.

In some cases, the determination of required standards and BAT for an installation will need to take account of the requirements of other legislation to be given effect through PPC. For example, EC Directives have set maximum permissible release levels and other standards for certain activities, such as waste incineration and the use of organic solvents in certain activities and installations. Where this is the case, these requirements must be met through permits. However, they are not necessarily a reflection of what is BAT. In most cases, the constraints imposed by other legislation are simply expressed as minimum obligations, without prejudice to any stricter conditions that may correspond to BAT or other requirements of PPC. Reference should be made to actual legislation for the precise requirements of any particular area.

Where other legislation applies in this way, it should be factored in as a constraint in the determination of required standards and BAT. Therefore, when options are selected for assessment, any which could not meet the minimum requirements of the other legislation should be discarded. The Operator should explain in the application that this has been done, but then need not assess the discarded option(s) further. The tasks of assessing environmental effects, comparing environmental effects, and economic assessment can then proceed in the normal way for those options that are capable of satisfying the other legal requirements.