

REPORT ON A STUDY ON AIR POLLUTION CONTROL AND ITS IMPLICATIONS IN SOUTH AFRICA

Undertaken on behalf of the

COUNCIL

NATIONAL ASSOCIATION FOR CLEAN AIR

1. INTRODUCTION

One of the main aims of the National Association for Clean Air, is to serve as an unbiased communication link between the Authorities and all sectors of the population, on matters relating to air pollution and the Atmospheric Pollution Prevention Act (Act 45 of 1965).

The Association membership embraces a wide spectrum of people concerned about clean air including members of the public, planners, researchers, air cleaning equipment suppliers, controlling bodies such as municipalities and industries responsible for airborne releases. Each of these have specific interests concerning the Act and its implementation.

Since NACA actively supports air pollution control for the benefit of the country, it appointed a Study Group on Air Pollution Control and its Implications at a NACA Council meeting on 14 March 1980. The functions of this Study Group was to gauge the current disposition of the membership-college on the requirements and implications of the Act.

2. TERMS OF REFERENCE OF THE STUDY GROUP

The Study Group was non-statutory and had no prescribing power.

The main objectives were:

- I. To **identify** potential areas of concern regarding the effectiveness of the Act and problems associated with its implementation.
- II. To make **recommendations** regarding (I) after due consideration.

3. MODUS OPERANDI

Based on the Terms of Reference, the Study Group concentrated on two phases:

- Evaluation of the basis of the existing Act i.e. of the principle of Best Practicable Means.
- Analysis and evaluation of responses of NACA members on a questionnaire relating to the Act and its implementation.

3.1 EVALUATION OF THE BASIS OF THE EXISTING ACT

South Africa is in the process of growing from a developing to an industrialized country. This implies a continual process

of changing needs and an increase in sophistication, which affects many concepts, including air pollution.

Taking this into account, the Study Group determined whether the legislative principle on which the Act is based, is still the most appropriate when considering past, present and future needs relevant to air pollution.

From the literature eight control principles could be identified:

- Best practicable means
- Cost benefit
- Standard
- Industrial location
- Dispersion
- Prohibition
- Common Law
- Pollution Tax

These were evaluated on concepts which fall into four categories, each comprising a number of factors against which legislation can be assessed.

- Feasibility
- Desirability
- Flexibility
- Ambit

3.1.1 Feasibility

Administration: the practical implementation of legislation with special reference to administrative implications, tediousness and possible obstruction by political or court verdicts.

Personnel & Services: the minimum personnel complement – administrative and technical – as well as research and related services required for effective functioning.

Precision: the ability to define objectives and assess results accurately.

Implementation period: the expeditiousness of policy formulation and implementation.

Unambiguity: the absence of scope for misinterpretation.

Comprehensiveness: the scope to include effective control of pollution in all cases.

Enforcement: the possibility of assessing performance against requirement regarding set standards.

3.1.2 Desirability

Economic accountability: cognisance of the possible influence of legislation on the gross national product and quality of life.

Justness: the fairness of legislation.

Compatability: compatibility of specific legislation with other legislation.

3.1.3 Flexibility

Adaptability: adaptability of legislation to changing conditions.

Special cases: the ability to accommodate issues of national importance other than air pollution.

Revision: the need and dimension for periodic or continual update.

3.1.4 Ambit

New pollutants: provision for unspecified pollutants.

Secondary pollutants: allowance for secondary pollutants not produced directly by human activity.

Research: aid for the acquisition of necessary additional information and knowledge.

By measuring legislative requirements against a matrix of legislative principles, relative weighting could be assigned to requirements, and scale values estimated for each principle. The eight **control principles** were analysed in terms of these values.

From the analyses, only three principles emerged as being useful in the South African context.

- (a) Best practicable means
- (b) Cost benefit
- (c) Standard

Since (a) is already in use in the RSA, no change is deemed necessary.

3.2 EVALUATION OF THE ACT AND ITS IMPLEMENTATION

The evaluation of the effectiveness of the Act for the Eighties, as seen by members of NACA, was effected by the analysis of a questionnaire distributed among NACA members.

Summary of the Analysis of the Questionnaire

The responses could be classified as:

- those relating to aspects directly concerned with the Act per se,
- and
- those relating rather to peripheral issues that affect the implementation of the Act.

In short, these reactions can be summarized as follows:

3.2.1 Essentially, the part of the Act that yields problems with Smoke Control, with typical sources being black townships, locomotives and diesel smoke.

Increased pollution levels was also ascribed to the level of maintenance of equipment in industry.

Industrial dust evoked the most comment, especially dust from localised sources such as furniture factories (sawdust), sandblasting, coal handling depots and stoneworks. Part IV of the Act does not seem to adequately cover dust control in these instances. Also, local authorities do not appear to have enough power to deal with complaints in this regard.

Many reactions indicated that smells and fumes posed problems and that again local authorities did not have the power to deal with it. Typical sources cited are printing work, spray painting, detergent factories, diesel engine test sites and dry cleaners.

The application of "best practicable means" seems to be accepted as the best option within the South African context, although there is an awareness that the term is open to wide interpretation.

3.2.2 The point was made that too many Government Departments are involved with the control of air pollution (i.e. Departments of Health, Manpower, Mineral and Energy Affairs (Mining)).

The most disconcerting comment was that ignorance of the Act is common, and an unawareness of the existence and functioning of the National Air Pollution Advisory Committee and the Appeal Boards.

A point that cropped up consistently was the matter of an adequate supporting inspectorate to the Chief Air Pollution Control Officer (CAPCO). Many reactions indicated that enforcement of the Act could only be effected by a well motivated inspectorate. At the same time it was expressed that improved liaison between CAPCO and industry, and between local authorities, Provincial Administration and Government departments and Industry, would aid the more effective implementation of the Act.

Concerning the inspectorate of local authorities, many expressed the view that they should have wider powers to enforce the Act. At present, local authorities can not effectively deal with nuisance complaints about odours or dust.

4. CONCLUSIONS

The Study Group concluded that to date the Act has served remarkably well compared with other countries and only minor adjustments seem to be necessary. The measure of effectiveness is even more remarkable when considering that the concept of "best practicable means" can only function with the co-operation of Industry.

5. RECOMMENDATIONS

(a) Part III of the Act – Smoke Control

Problems: Railways, black townships and diesel smoke are sources presenting control problems.

Control in black townships is complicated because it often falls between authorities since in some cases it resorts under local authorities and in others not.

Where sources are directly under Government control, problems are experienced with the implementation of the Act, since the ability of the local authority to deal with the problem is seriously hampered.

Recommendations: Local authorities for black towns should be requested to deal with smoke control in townships where necessary. Where Government control is not possible for reasons of inadequate staff complement, assistance to local authorities should be given to create machinery for the effective execution of transferred responsibility.

(b) Part IV – Dust Control

Problems: The Legislation deals with two main sources of dust, namely that from industrial processes and that which can be classified as dumps. Legislation on the latter is implemented, but not on the former.

Recommendations: Despite difficulties, Part IV of the Act, referring to dust from Industrial processes, must be implemented.

(c) Part V – Vehicle Emissions and Fumes

Problems: Many responses including complaints on fumes, but on analysis these could rather be described as odorous vapours.

Recommendations: Steps should be taken to include control of odorous vapours which is not covered by the Act.

Concerning diesel smoke control, this should be dealt with on a technical level by CAPCO through the establishment of satisfactory tests and test methods.

(d) Best practicable means:

Problems: Although the principle is generally accepted, many problems with the interpretation of the term exist.

Recommendations: Explanatory notes on requirements and the interpretation of "best practicable means" should be drawn up by CAPCO and then widely publicised. This would greatly reduce uncertainties.

(e) CAPCO and local authorities:

Problems: The present staff complement to the Chief Officer is considered inadequate for effective implementation of the Act.

Recommendations: The personnel complement should be enlarged. More responsibility can be given to local authorities to lessen the burden of CAPCO in certain areas, either as alternative or in addition to the expansion of staff.

(f) Publicity:

Problems: The Act, the mechanisms for enforcement and avenues for aid is not necessarily understandable for all levels of the public and industry.

Recommendations: Publicity via all available media should be initiated, to inform the public and industry on the content of the Act and the progress to date on the implementation and effectiveness of controlling pollution. Publications should cater for various levels and deal with the Act in technical and lay rather than legal terms.

(g) New Developments

Problems: The use of new or alternative fuels and their impact can present problems and some line of action on the control of the effect of fuels should be decided on prior to the introduction of such fuels. This includes solid, liquid and gaseous fuels and new processes or techniques to produce these, such as fluidized bed combustion and gasification of coal and the generation of producer gas using either waste wood or coal as feedstock.

Recommendations: NAPAC should continually look at the status and implications of new technology and fuels. In this respect much can be learned from the experience of other countries.

6. FINAL WORD

At the recent Conference of the International Union of Air Pollution Prevention Associations in Paris (May 1983), attention was drawn to the fact that air pollution control is not only for the protection of man's health. Interpretation of "protection" implies much more than health – it also includes the environment and climatic conditions. The latter two areas are normally dealt with by different departments and bodies. It would be of general benefit if all concerned could act from a central point of authority and interest.

APPENDIX

QUESTIONNAIRE

It would be appreciated if you could answer the questions below, giving as much detail and being as specific as possible. Each answer should be motivated. All replies will be treated in the strictest confidence.

In considering the questions on the Act, aspects such as clarity/ambiguity; preciseness/vagueness; ease or difficulty of implementation, etc., should be taken into account. Recommendations regarding possible amendments or alternatives will be welcomed.

1. Are you aware of problems with the practical implementation of the Act?
 - 1.1 If so, list and explain these particular problems.
 - 1.2 Which aspects of the legislation do you consider responsible for these problems? Please explain.
 - 1.3 What corrective actions or measures would you suggest to rectify these shortcomings?
2. List and explain aspects within your sphere of activity which are not adequately covered by existing legislation.
3. Do you consider the Act based on the principle "best practicable means" effective in preventing air pollution?

If not, explain why.
4. What are your recommendations to make legislation more effective in the 80's?

GUIDELINES FOR AUTHORS

INTRODUCTION

Papers read at NACA meetings are often published in the Clean Air Journal. The Journal also welcomes Articles with an Air Pollution interest. For both types of article the Editor would like authors to consider the following criteria which will make the processing of all script for the Journal a straight-forward matter.

SUBMISSION

Send a short letter giving

- (a) the title of the paper
- (b) the name and address and telephone number of the author (or authors)

plus two copies of the paper and the unlabelled originals of all illustrations or photographs (with figure number and title of paper on the back of each sheet, illustration or photograph).

THE MANUSCRIPT

This should be typed with double spacing, on one side of A4 sheets, in the following manner:

- i) Title page with names of authors (and addresses)
- ii) Abstract page; less than about 90 words, with translation.
- iii) Main body of text followed by acknowledgements and references.
- iv) Any tables and figures, each with a brief caption.

All this material should be in duplicate.

REFERENCES

In the text these may be indicated either by superscript numeral or by name and date such as (Vincent J.H. 1977).

UNITS AND SYMBOLS

Units should conform to the SI convention where possible, and be abbreviated accordingly. Where other symbols are used they should be defined at the point of their first appearance.