
INDUSTRIAL POLLUTION CONTROL (NI) ORDER 1997

GUIDANCE FOR PROCESSES PRESCRIBED FOR AIR POLLUTION CONTROL
BY
DISTRICT COUNCILS

PROCESS GUIDANCE NOTE NIPG 6/1

VERSION 2

THE PROCESSING OF
ANIMAL REMAINS AND BY-PRODUCTS

INDUSTRIAL POLLUTION CONTROL (NI) ORDER 1997

GUIDANCE FOR PROCESSES PRESCRIBED¹ FOR AIR POLLUTION CONTROL BY
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**THE PROCESSING OF ANIMAL REMAINS AND BY-
PRODUCTS**

NB This Note is Version 2 of NIPG 6/1 and it amends and replaces Versions 1 of NIPG 6/1, NIPG 6/38 and NIPG 6/39 all of which issued in March 1998. Appendix 2 contains a summary of the changes that have been made. This Note may itself be amended from time-to-time in order to keep abreast with BATNEEC. Such changes may be issued in the form of ad hoc additional guidance notes to district councils. It is recommended that operators and their advisors check with their district council whether there have been any changes before relying on this Note for the purpose of making an application or taking other significant action under the Order. Readers of this Note should also ensure that this version of the Note is the current one. The version number is given on each page of the Note and any district council will be able to confirm whether or not it is the number of the current version.

PART I - INTRODUCTION

This Note is issued by the Department of the Environment (the Department) as a guide to district councils on the techniques appropriate for the control of air pollution in relation to the processing of animal by-product rendering processes, blood processing and animal by-product dealers in order to achieve the objective set down in Article 7(2)(a) of the Industrial Pollution Control (NI) Order 1997. It will also be of interest to operators of such processes.

Part 2 of the Note contains general guidance on a number of matters concerning the imposition of appropriate conditions under Article 7(1) of the 1997 Order.

Part 3 contains specific technical guidance under Article 7(11) of the 1997 Order on the techniques that are appropriate for the purposes of the application of Article 7(2)(a) of that Order.

Article 7(1)(a) of the Order requires that the specific conditions set in an authorisation, together with the implied general condition in Article 7(4), achieve all the objectives specified in Article 7(2), including that in Article 7(2)(a) given below.

The objective in Article 7(2)(a) is:

"ensuring that, in carrying on a prescribed process, the best available techniques not entailing excessive cost (BATNEEC) will be used -

- (i) for preventing the release of substances prescribed for any environmental medium into that medium or, where that is not practicable by such means, for reducing the release of such substances to a minimum and for rendering harmless any such substances which are so released; and
- (ii) for rendering harmless any other substances which might cause harm if released into any environmental medium".

By virtue of Article 7(5) of the Order the reference to the release of substances into any environmental medium in Article 7(2)(a) is to be read, in relation to authorisations granted by district councils, as reference to the release of substances into the air.

The guidance in Part 3 is based on an assessment of best available techniques as qualified by the requirement not to entail excessive cost. (Background guidance on the meaning of BATNEEC is contained in NI General Guidance Note 1².) In accordance with Article 7(11), district councils are required to have regard to any guidance issued to them under that Article for the purpose of determining appropriate techniques in relation to the Article 7(2)(a) objective.

This Note also (where appropriate) gives information about any directions, limits, requirements, quality standards or quality objectives which were in force on the date this Note was published and which must be complied with in carrying on these processes, in accordance with Article 7(2)(b) and (c) of the Order.

The Department will treat the whole of this guidance note as one of the material considerations when determining any appeals made against a district council decision.

The guidance contained in this Note was determined after consultation with members of Northern Ireland Industrial Pollution Liaison Group, and interested bodies. It is based on the state of knowledge and understanding of these processes, their potential impact on the environment, and the available control techniques at the time of publication. The guidance will be updated regularly to reflect changes in knowledge and understanding; however, it will not always be possible to revise the Notes quickly enough to keep in absolute step with rapid changes. District councils must always, of course, have regard to the individual circumstances obtaining in each case. This Note can only give guidance on what, in the generality of circumstances, constitutes BATNEEC and the conditions that will be appropriate - individual circumstances may make alternative BATNEEC judgements and conditions appropriate.

Guidance on interpretation of the terms used in this Note is provided in NI General Guidance Note 4 (NIGG4) - "Guidance on Interpretation of Terms used in Process Guidance Notes".

Processes must be operated in order to protect persons at work as well as the environment, therefore conditions in the authorisation must not impose any requirement that would put at risk the health, safety or welfare of persons at work. Article 7(1) of the Order requires that no conditions are to be imposed which are designed only to secure the health of persons at work (as defined in Part I of the Health and Safety at Work (NI) Order 1978).

Wherever emission limits quoted in this Note conflict with occupational exposure limits set under the Health and Safety at Work (NI) Order 1978 to secure the health, safety or welfare of persons at work, the tighter limit should prevail.

Paragraph 1 of Schedule 4 of the Order allows statutory nuisance action to be taken only in limited cases (noise nuisance being the chief of these) in relation to authorised processes. However, every authorisation under the Order will implicitly impose on operators the general duty to use BATNEEC. The BATNEEC duty includes minimisation of offence to any of man's senses (although this does not cover noise because of the definition of "substance" in Article 1(13) of the Order).

REVISED GUIDANCE

1. This Note replaces Versions 1 of NIPG6/1: Animal By-Product Rendering, NIPG6/38: Blood Processing and NIPG6/39: Animal By-Product Dealers, all of which issued in March 1998 ("the original guidance"). Appendix 2 contains a summary of the changes that have been made. The revised guidance should be applied in accordance with paragraphs A, B and C below (as appropriate – there may be cases where both paragraphs A and B apply).

A. Where this revised guidance specifies standards or requirements higher than or (subject to paragraph B) different from those in the original guidance, upgrading of existing processes³ having regard to these higher or different standards or requirements should be completed in accordance with the timetable specified in Clause 9 as appropriate.

Relevant authorisations should be varied (as may be necessary) having regard to the higher or different standards and the timetable in Clause 9. Any such variations should normally be able to be made as part of the review of authorisations required by Article 6(6) of the Order.

B. Where

(a) standards or requirements in the original guidance have been deleted in this revised guidance, or

(b) where this revised guidance specifies less stringent standards or requirements than those in the original guidance, relevant authorisations for existing processes³ should be varied (as may be necessary) having regard to the revised guidance.

Variations to authorisations in these cases should be made as soon as reasonably practicable.

C. In respect of new processes³, as from the first day of March 2000, standards or requirements should be included in authorisations having regard to the full standards of this revised note.

PROCESS DESCRIPTION ETC

2. This Note refers to processes for the processing of animal remains and by-products. Animal by-product rendering processes take the residues arising from the slaughter of animals and poultry in abattoirs and poultry processing plants as well as similar materials arising in meat deboning and packing plants, butcher's shops, knacker's yards and other sources. This material is sterilised and stabilised by the application of heat in an evaporative rendering process. Manufactured products from such processes are traditionally associated with the animal feed, soap and oleochemical industries, although many highly specialised outlets also exist.

3. This Note also refers to processes which take in blood and either process it to produce dry blood, or part process it. Usually, the processing involves coagulation, followed by separation and drying of solids. It also refers to processes, other than slaughterhouses, where animal remains or by-products are stored before being dispatched to a processor. The by-products concerned might include hoof and horns, bones and fat. Hide and skin dealers are covered by NIPG6/21, Version 1 – Hide and Skin Processes.

4. The processing and storage of animal remains and by-products are prescribed for local air pollution control under Section 6.9 of Schedule 1 to the Industrial Pollution Control (Prescribed Processes and Substances) Regulations (NI) 1998. Section 6.9 of Schedule 1 is reproduced in Appendix 1.

5. In some cases, animal by-product rendering processes include operations burning tallow or meat and bone meal (MBM). The combustion of tallow should not normally require the setting of specific emission limits other than that in Clause 14 below. Any operation burning MBM however should be discussed with the Industrial Pollution & Radiochemical Inspectorate (IPRI)⁴ as such a process may fall to Chief Inspector control. Guidance on the combustion of Over Thirty Month Scheme meat and bone meal is provided in the Environment Agency's IPC Guidance Notes S2 1.05 (Combustion of Fuel Manufactured from or Comprised of Solid Waste)⁵ and S2 5.01 (Waste Incineration)⁶ as amended by Amplification Note No.1⁷ which deals specifically with the combustion of meat and bone meal. Regard should be had to this guidance in relation to all appliances with a net rated thermal input of 3MW or more on which meat and bone meal are burned, and the guidance may well also be applicable to smaller appliances.

6. In the context of this Note, "process" comprises the whole process including the treating, handling and storage of any materials used in and products and wastes produced by the process. This Note applies to all new processes, to replacement processes, to substantial changes to existing processes and the upgrading of existing processes to meet the standards of this guidance³.

Substantial change is defined in Article 10(8) of the Order as "a substantial change in the substances released from a process or in the amount or any other characteristic of any substance so released".

PART II - GENERAL GUIDANCE

UPGRADING OF EXISTING PROCESSES

7. The first authorisation for an existing process will need to specify the interim conditions to be applied before the process is fully upgraded in accordance with this Note. Any authorisation issued during this initial period for an existing process should be on the basis that the BATNEEC objective for that process is secured by exercising the level of control that is achievable (using plant and equipment existing at the process) at the time of authorisation, provided that the process is complying with :

(a) in a case where the process was subject to registration under the Alkali &c Works Regulation Act 1906, as amended, the requirements (or what would have been the requirements) under the Act;

(b) in any other case, what would have been the requirements (where appropriate) under the Clean Air (NI) Order 1981 and the statutory nuisance provisions of the Public Health (Ireland) Act 1878 (subject to consideration of best practicable means);

and any interim standards of this Note.

8. Where interim upgrading is necessary in order to achieve these levels of control, conditions specifying a timescale for completing the work should be drafted having regard to the requirement not to entail excessive costs (NEEC). It may in some cases be more cost effective for the operator to upgrade the process to the full standards required by the Note, rather than in stages.

9. Existing processes³ should be upgraded to the standards of this revised guidance whenever the opportunity arises. The timetable for upgrading should take into account the criteria included in Articles 4, 12 and 13 of the European Communities Directive “On The Combating of Air Pollution from Industrial Plants” (84/360/EEC)². Only in exceptional circumstances should upgrading be completed later than 1 July 2003. Where the district council considers that upgrading is necessary to address an existing problem of offensive odour, it may specify a shorter timescale for the works, provided that this timescale is in accordance with BATNEEC.

10. In all cases, a programme for upgrading should be submitted to the district council within 9 months of the date of issue of the first authorisation. In cases where the first authorisation has issued at the time of issue of this Version 2 of NIPG 6/1, and additional upgrading is required to meet the standards of this revised guidance, a programme for upgrading should be submitted to the district council within 6 months of the date of issue of the variation notice.

11. The conditions contained in all authorisations should be reviewed by the district council at intervals of not more than 4 years in accordance with Article 6(6) of the Order.

Where complaint is attributable to operation of the process and is in the opinion of the district council, justified or if new knowledge develops on the potential for harmful effects from emissions, immediate review of the process should be undertaken. Any new requirements and compliance time-scales should be specified by the district council.

EMISSION LIMITS AND CONTROLS

12. All emissions to air other than steam or water vapour should be colourless and free from persistent mist. All emissions to air should be free from persistent fume and free from droplets.

13. Authorisations should include specific technical conditions in accordance with this guidance to prevent or minimise the escape of offensive odour across the process boundary. As discussed below, whether the emphasis should be on prevention or on minimisation depends on the type of process (and thus the type of odour) under consideration.

Animal rendering

Subject to what is said below, in the case of animal rendering - which gives rise to odours that are particularly offensive - conditions should be imposed preventing (rather than just minimising) the escape of offensive odour beyond the process boundary. In these cases the specific technical conditions imposed to prevent such escapes should be supplemented, as a

back-up measure, with a general condition (an “odour boundary condition”) requiring emissions to be free from offensive odour outside the process boundary.

When imposing an odour boundary condition district councils should take account of the fact that there may be circumstances where offensively odorous emissions are released for reasons which are beyond the direct control of the process operator, for example where there is a total breakdown of arrestment equipment through no fault of the operator. Allowance should be made for such occurrences by providing in the authorisation that it will not be a breach of the condition in a particular case if the operator can show that he or she took all reasonable steps and exercised all due diligence to prevent the release of offensive odour.

(The Department would expect that if a rendering process is properly managed, with the operator taking all reasonable steps and exercising all due diligence, there should be very few escapes of offensive odour beyond the process boundary. Certainly the Department would expect there to be no more than two such occurrences in any 12-month period. In the event of any occurrence the operator should immediately take remedial action to prevent any further escape of offensive odour and the Department would expect this to be effective within at most two hours.)

There may be cases of animal rendering where the escape of offensive odours beyond the process boundary would be unlikely to cause any harm (for example, because the area potentially affected by the release of any offensive odour is uninhabited countryside). In such cases it would not be appropriate to require an operator to ensure that no such odours cross the process boundary and no odour boundary condition should be imposed.

Other processes

In the case of the processes covered by this Note other than animal rendering, district councils should consider whether the odour generated by such processes is comparable in its offensiveness to that generated by animal rendering. If so, the considerations set out above in relation to the imposition of odour boundary conditions will apply equally to such cases. In other cases, where the emissions are likely to be less offensive, specific conditions designed to minimise the escape of offensive odours should be sufficient.

All processes

In all cases, the assessment of offensiveness should be as perceived by the district council inspector⁸ and should take into account the nature of the odour.

The guidance in this Clause supersedes the advice in Paragraph 10.1 in NIGG2, Northern Ireland General Guidance 2: Authorisations in relation to the imposition of odour boundary conditions in the case of the processes covered by this Note.

14. Emissions from combustion processes should in normal operation be free from visible smoke and in any case should not exceed the equivalent of Ringelmann Shade 1, as described in British Standard BS 2742:1969.

15. The introduction of dilution air to achieve the emission concentration limit in Clause 16 should not be permitted. Exhaust flow rates should be consistent with efficient capture of emissions, good operating practice and meeting the requirements of the legislation relating to the workplace environment.

16. The concentration of particulate matter in all emissions to air from materials handling operations should not exceed 50mg/m³. Operators may choose to work to emission limits for other pollutants in order to provide an indicator of arrestment plant performance. Such limits

are not necessary for regulatory purposes. All pollutant concentrations should be expressed at reference conditions, 273K, 101.3 kPa, without correction for water vapour content.

MONITORING, SAMPLING AND MEASUREMENT OF EMISSIONS

17. As part of proper supervision the operator should monitor emissions and make tests and inspections of the process. The need for and scope of testing and the frequency and time of sampling, will depend on local circumstances, operational practice and the scale of operation. The following should normally be included as standard requirements.

18. District councils should be advised at least 7 days in advance of any periodic monitoring exercise to determine compliance with emission limit value in Clause 16 of the provisional date and time of the monitoring, pollutants to be tested and the methods to be used

19. Visual and olfactory assessments of emissions should be made frequently and at least once a day. Remedial action should be taken immediately in the case of abnormal emissions.

20. Methods for assessing, sampling and testing emissions will depend on process circumstances. If a compliance testing regime is required then a test method approved by the district council should be used. For emissions of unknown composition or for which no reasonable chemical test is available, an olfactory assessment of the emission should be used. The effectiveness of containment and treatment measures should be finally judged by the perception of odours in the environment by the district council inspector.

21. The frequency of any testing should be increased, for example as part of the commissioning of new or substantially changed processes, or where emission levels are near to or approach the emission concentration limit in Clause 16.

22. The results of all monitoring and inspections should be recorded in a log, retained by the operator for a minimum of two years and made available for examination by the district council. Adverse results should be investigated immediately and in all cases should be recorded in the log. The operator should ensure that the cause has been identified and corrective action taken, and this action recorded in the log.

23. The results of all non-continuous emission testing should be forwarded to the district council within 8 weeks of the completion of the sampling.

24. Where necessary, adequate facilities for sampling should be provided on vents or ducts. Care is needed in the design and location of sampling systems in order to obtain representative samples⁹.

25. The reference test method for particulate matter emissions in chimneys or ducts is that of British Standard BS 3405:1983, and tests should be carried out according to the main procedural requirements of that standard.

For the measurement of the concentration of other pollutants, methods approved by the district council should be used.

PART III - STATUTORY GUIDANCE UNDER ARTICLE 7(11) ON APPROPRIATE TECHNIQUES

MATERIALS HANDLING AND PROCESSING

26. All raw materials should arrive at the plant in totally covered vehicles or containers designed to minimise offensive odour and spillage of any liquid or solid matter. The use of netting to hold raw materials in place should not be permitted. The time interval between the materials arising and their delivery to the plant should be kept to a minimum. Raw materials should remain in lorries parked on the site for as little time as possible and be kept covered until they are discharged for processing.

27. Records should be kept of the amount, type and origin of all raw materials brought onto the site. These records should include details of the date and time of receipt, and, where the information can readily be provided, where the raw materials were stored on the site, which equipment they were processed with and the time of processing. All records should be kept for at least two years and made available for examination by the district council.

28. Empty vehicles and containers should be cleaned, for example, using hot, pressurised water, as soon as reasonably practicable after their contents have been discharged. Where the design of the plant allows, vehicles and containers should be cleaned within the raw material reception area.

29. Raw materials should be processed as soon as possible and normally not later than 24 hours after receipt. Raw materials should be kept dry and cool, out of direct sunlight and in a fully enclosed container or buildings.

30. Suitable extraction rates should be maintained in the raw material reception area in order that it remains under negative pressure at all times. Extracted air should be vented to suitable arrestment plant and the rate of extraction continuously monitored and recorded. Airlocks should be provided at the vehicle entrance and no transfer or unloading of raw materials should take place within the airlock. All doors used by vehicles should be of the rapid opening and closing type.

31. All buildings where raw materials are received, transferred or processed should be totally enclosed and constructed so that the surfaces are impervious. All surfaces and equipment liable to come into contact with raw or processed material should be impervious, capable of being readily cleansed and should be kept clean. A comprehensive cleaning programme should be devised and agreed with the district council.

32. Tanks or receptacles for the storage of liquid wastes or usable putrescible products should either be in an area under negative pressure or vented to suitable arrestment plant.

33. All floors, yards and roadways where there are regular vehicle movements should be of impervious construction laid to fall to drains which should be provided with all necessary sedimentation tanks and grease interceptors to prevent the ingress of material likely to impair the free flow of any receiving sewage system. All interceptors and sedimentation tanks should be readily and regularly emptied and cleaned.

34. The integrity of all buildings should be maintained to prevent the uncontrolled escape of ventilation air from the building. Doors should be close fitting and should be kept closed other than for the movement of materials. Self-closing personnel doors should be provided

and fitted with alarms which operate if the doors fail to close within a reasonable period of time.

35. Hosing points or other methods such as high pressure steam cleaning should be provided for the effective cleaning of any area of spillage and for the effective cleaning of plant. Spillages should be cleaned up as soon as possible.

36. All points of transfer should be designed to be leak-proof and spill-proof. Means for cleaning and transferring spillages back to the raw material reception area should be provided and agreed with the district council.

Processing equipment

37. For batch rendering processes, cookers should be charged under a sufficiently reduced pressure to prevent the escape of substances prescribed for air or offensive odours, or the charging area should be hooded and the extracted gas vented to a suitable arrestment plant. Automated charging should be used.

38. All emissions of substances prescribed for air or offensive odours should be prevented or contained and ducted to suitable arrestment plant as approved by the district council. Sources at rendering processes which must be dealt with include:

- (a) odorous emissions arising from the cooker during the cooking process;
- (b) the intermittent or continuous discharge from cookers;
- (c) presses or centrifuges receiving hot processed material;
- (d) driers;
- (e) ducts and glands on the processing equipment or transfer pipelines;
- (f) the transfer of processed or semi-processed material.

39. Cooker exhaust gases should pass in turn through an interceptor, indirect condenser and arrestment plant to minimise vapour and odour emission. There is a range of condensers acceptable for the purpose of minimising odours. Operators should ensure that the type which they propose to use is acceptable both in relation to the quantity and quality of liquid discharges.

Greave and meal processing

40. All grinding and sieving plant should be constructed and linked in a manner which avoids spillage.

Storage

41. Stocks of dusty material, such as processed greaves and meal, should be stored in suitable silos, closed containers or an enclosed store. Storage silos for dusty materials should be vented to air through suitable equipment to meet the requirements of Clause 16 above and to minimise the emissions of particulate matter.

42. The transportation and handling of dusty materials should be carried out by methods which do not give rise to dust emissions. Preferred methods include enclosed containers or covered conveyors. Conveyors should be of sufficient capacity to handle maximum loads and conveyor discharges should be arranged to minimise free fall of dusty materials. Transfer points should be enclosed and ducted to suitable equipment as approved by the district council to meet the requirements of Clause 16 above and to minimise emissions of particulate matter.

Attention is drawn to the risk of explosion from the handling and storage of dusty materials.

Tallow processing and liquid storage

43. All tanks should be lidded, sealed or vented to suitable arrestment plant to prevent odour emissions. Catchment provisions - for example, bunding or spillage containment kerbs - should be provided.

44. Bulk storage tanks should be fitted with a high-level alarm or volume indicator to warn of and thereby minimise the possibility of overfilling.

LIQUID EFFLUENT

45. The handling and treatment of liquid effluent should be carried out so as to minimise the emission of offensive odours. Where necessary to prevent odour emissions, tankers or transportable tanks should be vented to suitable arrestment plant or back vented.

ODOUR ARRESTMENT PLANT

46. Emissions of differing odour intensity are likely to be produced within the process. In the case of rendering processes, the odour streams should normally be kept separate and treated by appropriate treatment plant which has been suitably designed to deal with specific types of odour. For example, high intensity process odours and those containing incondensable gases should be treated by incineration, either within the plant boilers or a dedicated thermal oxidiser, or by alternative means which can be demonstrated to be equally effective. Less intense odours, for example from storage areas, may be vented to chemical scrubbers, biological filters or similar suitable arrestment plant.

47. Where chemical scrubbers are used, the liquid circulation and scrubber efficiency should be monitored by suitable instruments; for example, pH meters and variable orifice meters to give continuous indication of effective operation and an audible alarm to give an indication of failure. Automatic reagent dosing equipment should be used. Instrument readings should be observed regularly (for example, on start up and then twice per shift) and the readings should be recorded in the log.

48. Where condensers are used, the inlet and outlet temperatures should be continuously monitored and recorded. In the case of batch processes, the times when processing took place should be noted.

49. Where biological filters are used, care should be taken at the design stage to ensure that the residence time is adequate for the minimising odour. The temperature of waste gases entering the biological filter media, their humidity and the resistance to the flow of exhaust gases should be continuously monitored and recorded. In the case of batch processes, the times when processing took place should be noted. There should be a programme of regular weed control, agreed with the district council, and regular inspection should take place in order that fissures due to low moisture content can be quickly identified and corrective action taken.

50. The use of odour-masking agents and counteractants to meet the requirements of Clause 13 of this note should not be permitted, except in the case of counteractants where they are used at processes existing at the time of publication of this guidance. The use of counteractants is restricted to the treatment of residual odour from odour arrestment plant where all other clauses in this guidance are complied with and their use is the *only* practicable

means of ensuring that all emissions are free from offensive odour outside the process boundary.

51. Without prejudice to Clause 13, in the event of arrestment plant breakdown the system should fail safe and allow diversion of odour streams to other suitable arrestment plant or cause interruption of the process. For example, where boilers are used for waste gas treatment, in the event of failure to reach the incineration temperatures an automatic diversion facility should be fitted to divert the emissions to alternative equipment. Where necessary flame traps should be fitted. A contingency plan covering arrestment plant failure should be devised and agreed with the district council.

52. For the efficient treatment of odour, gases from process and materials handling equipment should be extracted directly to the arrestment plant.

CHIMNEYS, VENTS AND PROCESS EXHAUSTS

53. Where arrestment includes an after-burner or a thermal or catalytic oxidiser, or boiler furnaces are used for waste gas treatment, the chimney height should be assessed on the basis of the need to comply with Clause 13. The chimney height so obtained should be adjusted to take into account of local meteorological data, local topography, nearby emissions, and the influence of plant structures¹⁰.

The calculation procedure in HMIP Technical Guidance Note D1¹⁰, as supplemented by the additional guidance subsequently produced by AEA Technology⁸, should be used as a basis for the assessment, insofar as it is relevant. Alternative dispersion models may be used by agreement with the district council.

54. The assessment should also take into account the relevant air quality standard, or criteria that apply for the emitted pollutants¹¹.

55. A minimum discharge velocity should be required in order to prevent the discharged plume being affected by aerodynamic downwash¹⁰. Care should be taken to avoid generating positive pressure zones within the chimney unless the chimney wall is impervious or lined. Where a wet method of arrestment is used, the linear velocity within the chimney should not exceed 9 m/sec, to avoid entrainment of droplets from the chimney surface into the gas stream. The gas velocity within ducts handling particulate matter should be sufficient to prevent the build up of particulates within the duct.

56. Chimney flues and ductwork leading to the chimney should be adequately insulated to minimise the cooling of waste gases and prevent liquid condensation on internal surfaces. Chimney flues and ductwork should be cleaned regularly to prevent accumulation of material.

57. Chimneys or process vents should not be fitted with any restriction at the final opening such as a plate, cap or cowl, where it is necessary to achieve dispersion of the residual pollutants. The use of an eductor cone at a stack exit, in order to increase effective efflux velocity, should be permitted.

GENERAL OPERATIONS

58. Effective control of emissions requires the maintenance and proper use of equipment, the proper supervision of process operations, good housekeeping standards and, where

appropriate, checking for visible and odorous emissions and monitoring wind speed and direction. Effective preventive maintenance should be employed on all plant and the equipment concerned with the control of emissions to the air. A maintenance schedule should be devised for such plant and equipment and agreed with the district council.

59. Essential spares and consumables – in particular those subject to continual wear – should be held on site or be available at short notice from suppliers, in order to rectify breakdowns rapidly.

60. Without prejudice to Clause 13, any occurrence leading to abnormal emissions should be dealt with promptly, in accordance with the contingency plan, and process operations adjusted until normal operations can be restored. All such occurrence should be recorded in the log along with a description of the remedial action taken. If there is likely to be an effect on the local community the district council should be informed without delay. The district council should identify key arrestment plant, the failure of which should be notified to them immediately

61. Staff at all levels should receive the necessary formal training and instruction in their duties relating to control of the process and emissions to air. Particular emphasis should be given to training for start-up, shut down and abnormal conditions. Details of relevant training should be provided to the district council.

62. Good housekeeping should be practised at all times. The adoption of good cleaning and working practices as a routine will reduce process odour emissions and consequently lead to higher arrestment plant efficiency.

63. Any solid waste remaining on completion of the process, still capable of the emission of substances prescribed to air or offensive odours should be stored within an enclosed area which should be extracted to suitable arrestment as specified by the district council.

64. A comprehensive cleaning programme should be instituted and agreed with the district council. This should cover all structures, equipment and internal surfaces and non-disposable containers used for raw materials collections. The cleaning and disinfecting of all drainage, collecting tanks, yards and roads should be undertaken at least once a week. Care must be taken in the cleaning of arrestment equipment to prevent or minimise the emission of pollutants.

65. A senior manager should be designated to be specifically responsible for all aspects of liaison with the district council and where applicable with members of the general public. The district council should be kept informed of the identity of this manager.

1 as prescribed under Article 3(1) of the Industrial Pollution Control (NI) Order 1997

2 NI General Guidance Note 1 (NIGG1) - "Introduction to the Industrial Pollution Control (NI) Order 1997" - includes general guidance on the interpretation of "best available techniques not entailing excessive cost", the requirements of Articles 4, 12 and 13 of EC Directive 84/360/EEC, and the meaning of "existing processes".

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Version 2

- 3 for the purposes of this clause (Clause 1), “existing process “ should be taken to have the following meaning (which is based on paragraph 5 of Schedule 3 to the Industrial Pollution Control (Prescribed Processes and Substances) Regulations (NI) 1998):
- (i) a process which was being carried on at some time in the 12 months immediately preceding the first day of the month following publication of this guidance note;
 - (ii) a process which is to be carried out at a works, plant or factory or by means of mobile plant which was under construction or in the course of manufacture or in the course of commission on the first day of the month following publication of this guidance note, or the construction or supply of which was the subject of a contract entered into before that date.
- “New process” should be taken to have a corresponding meaning.
- 4 IPRI, Calvert House, 23 Castle Place, Belfast BT1 1FY, Tel: 01232 254709
- 5 Chief Inspector’s Guidance Note S2 1.05 – Combustion Processes: combustion of fuel manufactured from or comprised of solid waste in appliances 3MW(th) and over, The Stationery Office, ISBN 0-11-753168-5, price £9.95
- 6 IPC Guidance Note S2 5.01 – Waste Incineration, The Stationery Office, ISBN 0-11-310117-1, price £30
- 7 IPC Guidance Note S2 1.05 Amplification Note No1 – Combustion of Meat and Bone Meal (MBM), The Environment Agency, <http://www.environment-agency.gov.uk>
- 8 “Odour Measurement and Control – An Update” published by National Environmental Technology Centre, Culham, Abingdon, Oxon OX14 3DB. ISBN 0-85-624825-8, £20 net., provides further guidance on the assessment of odour
- 9 Technical Guidance Note M1 – “Sampling Facility Requirements for the Monitoring of Particulates in Gaseous Releases to Atmosphere”, The Stationery Office, ISBN 0-11-752777-7, price £5
- 10 Technical Guidance Note D1 – “Guidelines on Discharge Stack Heights for Polluting Emissions”, The Stationery Office, ISBN0-11-752794-7, price £8
- 11 The Air Quality Standards Regulations (NI) 1990 (SR 1990 No 145) specify current standards.

DEFINITION OF PROCESSES FOR THE TREATMENT AND PROCESSING OF ANIMAL OR VEGETABLE MATTER IN SCHEDULE 1 TO THE INDUSTRIAL POLLUTION CONTROL (PRESCRIBED PROCESSES AND SUBSTANCES) REGULATIONS (NI) 1998* (see Clause 4 in this Note)

(The processes for local air pollution control are listed under “**Part C**”. The “Part A” and Part “B” processes are for Chief Inspector control.)

Section 6.9 The treatment and processing of animal or vegetable matter

PART A

Any of the following processes, unless falling within a description in another Section of the Schedule or an exempt process, namely, the processing in any way whatsoever, storing or drying by the application of heat of any dead animal (or part thereof) or any vegetable matter if the process may result in the release into water of any substance described in Schedule 5 in a quantity which in any 12 month period exceeds the background quantity by more than the amount specified in relation to the description of the substance in column 2 of Schedule 5; but excluding any process for the treatment of effluent so as to permit its discharge into controlled waters or into a sewer unless the treatment process involves the drying of any material with a view to its use as an animal feedstuff.

PART B

Any process involving the hydrolysis of feathers where the process may result in the release into the air of hydrogen sulphide or other sulphur containing compounds.

PART C

(a) Any process mentioned in Part A of this Section unless an exempt process or a process described in Part B of this Section -

- (i) where the process has the characteristics described in regulation 4(1)(b); but
- (ii) may release into the air a substance described in Schedule 4 or any offensive smell noticeable outside the premises on which the process is carried on.

(b) breeding maggots in any case where 5 kg or more of animal or of vegetable matter or, in aggregate, of both are introduced into the process in any week.

In this Section -

“animal” includes a bird or a fish; and

“exempt process” means -

- (i) any process carried on on a farm or agricultural holding other than the manufacture of goods for sale;
- (ii) the manufacture or preparation of food or drink for human consumption but excluding -

- (a) the extraction, distillation or purification of animal or vegetable oil or fat otherwise than as a process incidental to the cooking of food for human consumption;
 - (b) any process involving the use of green offal or the boiling of blood except the cooking of food (other than tripe) for human consumption;
 - (c) the cooking of tripe for human consumption elsewhere than on premises on which it is to be consumed;
- (iii) the fleshing, cleaning and drying of pelts of fur-bearing mammals;
- (iv) any process carried on in connection with the operation of a knacker's yard as defined in regulation 2(1) of the Animal By- Products Regulations (NI) 1993 (a);
- (v) Any process for the manufacture of soap not falling within a description in Part A or B of Section 4.2 of this Schedule;
- (vi) the storage of vegetable matter otherwise than as part of any prescribed process;
- (vii) the cleaning of shellfish shells;
- (viii) the manufacture of starch;
- (ix) the processing of animal or vegetable matter at premises for feeding a recognised pack of hounds registered under regulation 9 of the Animal By-Products Regulations (NI) 1993.
- (x) the salting of hides or skins, unless related to any other prescribed process;
- (xi) any process for composting animal or vegetable matter or a combination of both, except where that process is carried on for the purposes of cultivating mushrooms;
- (xii) any process for cleaning, and any related process for drying or dressing, seeds, bulbs, corms or tubers;
- (xiii) the drying of grain or pulses, or;
- (xiv) any process for the production of cotton yarn from raw cotton or for the conversion of cotton yarn into cloth.

"food" includes drink, articles and substances of no nutritional value which are used for human consumption, and articles and substances used as ingredients in the preparation of food; and

"green offal" means the stomach and intestines of any animal, other than poultry or fish, and their contents.

* Every effort has been taken to ensure that this Appendix is correct at the date of issue of this Note, but readers should note that the Regulations are likely to be subject to periodic amendment, and this Appendix should not therefore be relied upon as representing the up-to-date position after the issue date.

TABLE OF DERIVATIONS

This appendix indicates for each clause its derivation (if any) in Version 1 of NIPG 6/1 and any changes made in comparison with Version 1 of NIPG 6/1. (Version 1 of NIPG 6/1 has been used for this purposes of this table, although Version 2 of NIPG6/1 also amends and replaces Versions 1 of NIPG 6/38 and NIPG 6/39. Where clauses have been amended solely or primarily for the purpose of referring to blood processing and animal by-product, this is indicated by a '+' in the comments column.)

Clause in NIPG6/1, Version 2	Related clause in NIPG6/1, Version 1	Comments
Preamble	1.1.1 – 1.1.11	no change
1	-	new guidance
2	1.2.1	amended
3	1.2.2	+
4	1.2.3	+
5	-	new guidance
-	1.2.4	original 1.2.4 deleted
6	1.2.5-1.2.6	amended
7	1.3.1	no change
8	1.3.2	no change
9	1.3.3	amended
10	1.3.4	amended
11	1.3.5-1.3.6	no change
12	2.1	no change
13	2.2	amended
14	2.3	no change
15	2.4	amended
16	2.4, 2.6	amended
17	3.1	no change
18	-	new guidance
19	3.2	no change
20	3.3	amended
21	3.4	amended
22	3.5	amended
23	3.6	minor change
24	3.7	amended
25	3.8	minor change
26	4.1, 4.5	amended
27	-	new guidance
28	4.2	amended
29	4.3	amended
30	4.6 (a) and (b)	amended
31	4.4 (part), 5.1.2	amended
32	4.6(c)	amended
33	4.4 (part)	amended

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34	4.4 (part)	amended
35	4.7	amended
36	5.1.1 (part)	amended
37	5.2.1	amended
38	5.2.2	amended
39	5.2.3, 6.2	amended
40	4.5	no change
41	5.4.1	amended
42	5.4.2	amended
43	5.5.1	no change
44	5.5.3	amended
45	5.5.2, 6.1	amended
46	7.1	amended
47	7.2	amended
48	-	new guidance
49	-	new guidance
50	7.3	amended
51	7.4	amended
52	7.5	amended
53	8.1, 8.2, 8.7	amended
54	8.3	amended
55	8.4	amended
56	8.5	no change
57	8.6	amended
58	9.1 (part)	amended
59	9.1 (part)	amended
60	9.2	amended
61	9.3	amended
62	9.4	no change
63	9.5	amended
64	9.6	amended
65	9.7	amended
Appendix 1	Appendix 1	no change
Appendix 2	-	this appendix