



**A GUIDANCE NOTE ON THE
BEST PRACTICABLE MEANS**

FOR

ELECTRICITY WORKS

(EMERGENCY GENERATORS)

BPM7/2 (96)

Environmental Protection Department
Air Policy Group

September 2008

1 INTRODUCTION

- 1.1 This Note is one of a series issued by the Environmental Protection Department to provide guidance on air pollution management for processes specified under Part IV of the Air Pollution Control Ordinance (the Ordinance). It also serves as a guide for the assessment of an application for Specified Process licence under the Ordinance.
- 1.2 It should be understood that this Note sets out the basic requirements for the applicant to provide and maintain the best practicable means for the prevention of emission of air pollutants. The applicant should recognize that whether a licence is granted or refused, and on what conditions, will depend on all the circumstances of an individual application besides the requirements set out in this Note. The Authority may devise specific requirements for individual facility carrying out the specified process.
- 1.3 This Note covers the operation of emergency generators which serve as an electricity back-up for the contingency when utility electricity supply to the premises concerned is interrupted and come within the specified process "Electricity Works" described in Schedule 1 to the Ordinance as:

"Works in which fossil fuel is burnt either wholly or as part of the process of electricity generation where the installed generation capacity of such works exceeds 5 MW."

2. EMISSION LIMITS

- 2.1 All emissions to air, other than steam or water vapour, shall be colourless, free from persistent mist or fume, and free from droplets.
- 2.2 Emissions from the specified process and associated processes as covered by this Note shall not appear to be as dark as or darker than Shade 1 on the Ringelmann Chart when compared in the appropriate manner with the Ringelmann Chart or an approved device.

3. FUEL RESTRICTION

- 3.1 All fuels to be used shall comply with the Air Pollution Control (Fuel Restriction) Regulations in force.

4. CONTROL OF EMISSIONS

- 4.1 As a general guideline, emission of air pollutants shall be minimised and controlled to prevent:
 - (a) harm to the environment, adverse effects to human health, or creation of any nuisance situation;

- (b) threatening the attainment or maintenance of the relevant air quality objectives;
- (c) giving rise to an objectionable odour noticeable outside the premises where the process is carried on; and
- (d) imposing undue constraint on the existing and future development or land use.

Stack or Vent Emission of Air Pollutants

- 4.2 Smoke emission from a combustion process shall not, when compared in the appropriate manner with the Ringelmann Chart or an approved device, appear to be as dark as or darker than Shade 1 on the Ringelmann Chart.

Dispersion

- 4.3 Chimney includes vents, structures and openings of any kind from or through which air pollutants may be emitted. The applicant will need to demonstrate that the proposed chimney will provide sufficient dispersion of air pollutants in determining the adequacy of its height.
- 4.4 Releases to air from chimney shall be directed vertically upwards and not restricted or deflected by the use of, for example, plates or rain caps. They should not be emitted into an enclosed space such as a courtyard, “light-well” or car park.
- 4.5 The efflux velocity of the exhaust gas stream emitted from a chimney shall not be less than 15 m/s at full load condition.
- 4.6 For a combustion process, the temperature of the exhaust gas stream emitted from the chimney shall not be less than the acid dew point.
- 4.7 Without prejudice to the generality of the requirements mentioned in paragraphs 4.3 to 4.6 above, the chimney of an emergency generator shall be:
- (a) at least 5 metres above ground;
 - (b) located in a well ventilated area; and
 - (c) located as far away as possible from nearby inhabitants, and at least 5 metres away from any public accessible place, or openable windows, car park, fresh air intake for the HVAC system or the generator room.

Materials Handling

- 4.8 As a general guideline, handling and storage of fuel should be carried out in such a manner to prevent the release of:
- (a) emissions of organic vapours; and/or
 - (b) other noxious or offensive emissions.

5. OPERATION AND MAINTENANCE

- 5.1 Best practicable means requirements include not only the provision of the appliances, but also the proper operation and maintenance of equipment, its supervision when in use, and the training and supervision of qualified staff.
- 5.2 The emergency generators should be operated only when:
- (a) experiencing a failure or interruption in utility electricity supply to the premises; or
 - (b) carrying out routine or emergency running tests of the generators.
- 5.3 Unless otherwise agreed by the Authority, routine tests on emergency generators should be carried out within the period specified below:
- (a) For those installed in residential premises: 1400 hours - 1600 hours, except Saturdays, Sundays and public holidays; and
 - (b) For those installed in non-residential premises: 1400 hours - 1600 hours, only on Sundays and public holidays.

6. MONITORING REQUIREMENTS

- 6.1 Parameters and sampling frequency will be determined by the Authority. The aim should be to demonstrate:
- (a) the process is properly controlled; and
 - (b) compliance with the terms and conditions imposed in the licence.

7. COMMISSIONING

- 7.1 Commissioning trials (to be witnessed by the Authority whenever appropriate) shall be conducted to demonstrate performance of the air pollution control measures and a report of commissioning trial shall be submitted to the Authority within 1 month after completion of the trial.