



ENVIRONMENT
AGENCY

Permit with introductory note

Pollution Prevention and Control (England & Wales) Regulations 2000

Peterborough Power Station

Centrica PB Ltd
Storeys Bar Road
Peterborough
Cambridgeshire
PE1 5NT

Permit number

AP3233LU

Peterborough Power Station

Permit Number AP3233LU

Introductory note

This introductory note does not form a part of the permit

A non-technical description of the installation is given in the Application, but the main features of the installation are as follows.

The installation is located on Storeys Bar Road in an area known as 'Eastern Industry' approximately 2.5km to the east of Peterborough town centre. The site is approximately 7.3 hectares in size and the centre of the site is at National Grid Reference 521900399100.

The site is located in an industrial area of Peterborough and is bordered to the south, west and north by other industrial or commercial properties. To the northeast and east of the site is open land consisting of fields and open drains. The site is in a low-lying fenland area in the floodplain of the River Nene, which is located approximately 1 km to the south. The closest residential dwellings are approximately 1,300m to the east and 1,000m to the west, beyond the A1139.

There are SSSI within 2km and Natura 2000 sites within 10km of the installation which have been assessed for potential impacts

The site was constructed in 1992 and prior to this date the land was undeveloped and comprised agricultural land. The layout of the site consists of the following main areas:

- Turbine Hall (2 Gas Turbines and 1 Steam Turbine)
- 2 Heat Recovery Steam Generators;
- Gas compound for incoming supply; (not within scope of the Permit)
- Gas filters compound;
- Electrical switchyard; (not within scope of the Permit)
- Air cooled condenser;
- Gland steam gas oil boiler;
- Black start diesel generator;
- Winterising duct gas oil burner
- Two diesel fire water pumps;
- Water treatment plant;
- Water treatment plant chemical storage area;
- Gas oil tank farm; and,
- Storage tanks for acid/caustic, water and gas oil.

The power station has a maximum electrical output of 405 MW and consists of two gas turbines, two heat recovery steam generators and one steam turbine. The exhaust gases from the gas turbines are used to produce steam in the heat recovery boilers to drive the steam turbine. Electricity is generated by three electrical generators, one connected to the steam turbine and the other two are connected to the gas turbines. The gas turbines are fitted with steam injection for NO₂ suppression.

The gas oil fired auxiliary boiler is used to provide steam turbine gland steam during station starts. The maximum output of the boiler is 1.6MW thermal.

The installation has four main release points to air. These consist of a main and bypass stacks for each of the two gas turbines and heat recovery steam generators. Continuous monitors (2) are fitted to monitor the release points for Oxides of Nitrogen and Carbon Monoxide.

The installation primarily operates on natural gas, but has the ability to run on gas oil in the event of interruption of the gas supply or for economic reasons. The operation on gas oil has previously been limited to 1080 hours per annum. Releases from the installation include combustion gases to air, releases to surface water from surface water runoff (which pass through oil interceptors prior to release) and process effluent to sewer.

The installation uses a dry air-cooled condenser (ACC) to condense the process steam from the steam turbine back to water in a continuous closed loop cycle, thus eliminating the requirement for large quantities of cooling water. There is no direct discharge of process water to controlled waters.

All cooling water systems on site are supplied from closed cooling water to air systems, which utilise a mixture of water and ethylene glycol. Cooling water is supplied to the generators, common oil system and numerous pumps.

The only water discharged to controlled water is surface water run-off, which passes through interceptors before discharge via the Racecourse Drain to the Edgerley Drain and ultimately the river Nene. The installation has releases to sewer, which comprise of neutralised plant effluent from internal drains, regeneration chemicals from water treatment plant and domestic sewage. A discharge consent is held as issued by the local sewage utility.

The process is inherently quiet and there have been no complaints due to noise received by the installation.

There are no odorous substances used on the site and no odour complaints have been received.

Activities at the installation are managed under an externally certified ISO14001 management system and are covered under the European Union Emissions Trading Scheme (EU ETS) Permit No. GB-EA-ETC02-0097. The installation has previously operated under Integrated Pollution Control (IPC) and is a lower tier COMAH site.

Status Log of the permit			
Detail		Date	Response Date
Application AP3233LU		Duly made 20/03/06	
Request for extension to determination period		16/08/06	25/08/06
Request for extension to determination period		24/10/06	03/11/06
Permit determined		29/12/06	
Superseded or Partially Superseded Licences/Authorisations/Consents relating to this installation			
Holder	Reference Number	Date of Issue	Fully or Partially Superseded
Centrica PB Ltd	AF9706	11/12/92	Fully superseded

End of Introductory Note

Permit

Pollution Prevention and Control
(England and Wales) Regulations 2000

Permit

Permit number

AP3233LU

The Environment Agency (the Agency) in exercise of its powers under Regulation 10 of the Pollution Prevention and Control (England and Wales) Regulations 2000 (SI 2000 No 1973) hereby authorises **Centrica PB Ltd** ("the operator"),

whose registered office is

**Millstream
Maidenhead Road
Windsor
Bershire
SL4 5GD**

company registration number 4262250

to operate an installation at

**Peterborough Power station
Storeys Bar Road
Peterborough
Cambridgeshire
PE1 5NT**

to the extent authorised by and subject to the conditions of this permit.

Signed

Date

	29/12/06
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P Butler

Authorised to sign on behalf of the Agency

Conditions

1. Management

1.1 General management

- 1.1.1 The activities shall be managed and operated:
- (a) in accordance with a management system, which identifies and minimises risks of pollution, including those arising from operations, maintenance, accidents, incidents and non-conformances and those drawn to the attention of the operator as a result of complaints; and
 - (b) by sufficient persons who are competent in respect of the responsibilities to be undertaken by them in connection with the operation of the activities.
- 1.1.2 Records demonstrating compliance with condition 1.1.1 shall be maintained.
- 1.1.3 Any person having duties that are or may be affected by the matters set out in this permit shall have convenient access to a copy of it kept at or near the place where those duties are carried out.

1.2 Accidents that may cause pollution

- 1.2.1 The operator shall:
- (a) maintain and implement an accident management plan;
 - (b) review and record at least every 4 years or as soon as practicable after an accident, (whichever is the earlier) whether changes to the plan should be made;
 - (c) make any appropriate changes to the plan identified by a review.

1.3 Energy efficiency

- 1.3.1 The operator shall:
- (a) take appropriate measures to ensure that energy is used efficiently in the activities;
 - (b) review and record at least every 4 years whether there are suitable opportunities to improve the energy efficiency of the activities; and
 - (c) take any further appropriate measures identified by a review.

1.4 Efficient use of raw materials

- 1.4.1 The operator shall:
- (a) take appropriate measures to ensure that raw materials and water are used efficiently in the activities;
 - (b) maintain records of raw materials and water used in the activities;
 - (c) review and record at least every 4 years whether there are suitable alternative materials that could reduce environmental impact or opportunities to improve the efficiency of raw material and water use; and

- (d) take any appropriate further measures identified by a review.

1.5 Avoidance, recovery and disposal of wastes produced by the activities

1.5.1. The operator shall:

- (a) take appropriate measures to ensure that waste produced by the activities is avoided or reduced, or where waste is produced it is recovered wherever practicable or otherwise disposed of in a manner which minimises its impact on the environment;
- (b) review and record at least every 4 years whether changes to those measures should be made; and
- (c) take any further appropriate measures identified by a review.

1.6 Site security

1.6.1. Site security measures shall prevent unauthorised access to the site, as far as practicable.

2. Operations

2.1 Permitted activities

- 2.1.1 The operator is authorised to carry out the activities specified in schedule 1 table S1.1 (the “activities”).

2.2 The site

- 2.2.1 The activities shall not extend beyond the site, being the land shown edged in red on the site plan at schedule 2 to this permit.

2.3 Operating techniques

- 2.3.1 The activities shall, subject to the conditions of this permit, be operated using the techniques and in the manner described in the documentation specified in schedule 1 table S1.2, unless otherwise agreed in writing by the Agency.
- 2.3.2 No raw materials or fuels listed in schedule 3 table S3.1 shall be used unless they comply with the specifications set out in that table.
- 2.3.3 Standby fuel gas oil may be used but not for more than 1080 hours per year.

2.4 Off-site conditions

There are no off site conditions under this section

2.5 Improvement programme

- 2.5.1 The operator shall complete the improvements specified in schedule 1 table S1.3 by the date specified in that table unless otherwise agreed in writing by the Agency.
- 2.5.2 Except in the case of an improvement which consists only of a submission to the Agency, the operator shall notify the Agency within 14 days of completion of each improvement.

2.6 Pre-operational conditions

- 2.6.1 The activities shall not be brought into operation until the measures specified in schedule 1 table S1.4 have been completed.

2.7 Closure and decommissioning

- 2.7.1 The operator shall maintain and operate the activities so as to prevent or where that is not practicable, to minimise, any pollution risk on closure and decommissioning.
- 2.7.2 The operator shall maintain a site closure plan which demonstrates how the activities can be decommissioned to avoid any pollution risk and return the site to a satisfactory state.
- 2.7.3 The operator shall carry out and record a review of the site closure plan at least every 4 years.

- 2.7.4 The site closure plan (or relevant part thereof) shall be implemented on final cessation or decommissioning of the activities or part thereof.

2.8 Site protection and monitoring programme

- 2.8.1 The operator shall, within 2 months of the issue of this permit, submit a site protection and monitoring programme.
- 2.8.2 The operator shall implement and maintain the site protection and monitoring programme and shall carry out and record a review of it at least every 4 years.

3. Emissions and monitoring

3.1 Emissions to water, air or land

- 3.1.1 There shall be no point source emissions to water, air or land except from the sources and emission points listed in schedule 4 tables S4.1, S4.2 and S4.3.
- 3.1.2 The limits given in schedule 4 shall not be exceeded.

3.2 Transfers off-site

- 3.2.1 Records of all the wastes sent off site from the activities, for either disposal or recovery, shall be maintained.

3.3 Fugitive emissions of substances

- 3.3.1 Fugitive emissions of substances (excluding odour, noise and vibration) shall not cause pollution. The operator shall not be taken to have breached this condition if appropriate measures have been taken to prevent or where that is not practicable, to minimise, those emissions.
- 3.3.2 All liquids, whose emission to water or land could cause pollution, shall be provided with secondary containment, unless the operator has used other appropriate measures to prevent or where that is not practicable, to minimise, leakage and spillage from the primary container.

3.4 Odour

- 3.4.1 Emissions from the activities shall be free from odour at levels likely to cause annoyance outside the site, as perceived by an authorised officer of the Agency, unless the operator has used appropriate measures to prevent or where that is not practicable to minimise the odour.

3.5 Noise and vibration

- 3.5.1 Emissions from the activities shall be free from noise and vibration at levels likely to cause annoyance outside the site, as perceived by an authorised officer of the Agency, unless the operator has used appropriate measures to prevent or where that is not practicable to minimise the noise and vibration.

3.6 Monitoring

- 3.6.1 The operator shall, unless otherwise agreed in writing by the Agency, undertake monitoring for the parameters, at the locations and at not less than the frequencies specified in the following tables in schedule 4 to this permit:
 - (a) point source emissions specified in table S4.1, S4.2 and S4.3;
- 3.6.2 The operator shall maintain records of all monitoring required by this permit including records of the taking and analysis of samples, instrument measurements (periodic and continual), calibrations, examinations, tests and surveys and any assessment or evaluation made on the basis of such data.

- 3.6.3 Monitoring equipment, techniques, personnel and organisations employed for the emissions monitoring programme specified in condition 3.6.1 shall have either MCERTS certification or MCERTS accreditation (as appropriate) unless otherwise agreed in writing by the Agency.
- 3.6.4 Permanent means of access shall be provided to enable sampling/monitoring to be carried out in relation to the emission points specified in schedule 4 tables S4.1, S4.2 and S4.3 unless otherwise specified in that schedule.
- 3.6.5 Within 6 months of the issue of this permit (unless otherwise agreed in writing by the Agency) the site reference data identified in the site protection and monitoring programme shall be collected and submitted to the Agency.

3.7 Monitoring For the purposes of the Large Combustion Plant Directive

- 3.7.1 All LCP monitoring required by this permit shall be carried out in accordance with the provisions of Annex VIII of the Large Combustion Plant Directive.
- 3.7.2 If the monitoring results for more than 10 days a year are invalidated within the meaning set out in Schedule 4, the Operator shall:
- (a) within 28 days of becoming aware of this fact, review the causes of the invalidations and submit to the Agency for approval, proposals for measures to improve the reliability of the continuous measurement systems, including a timetable for the implementation of those measures; and
 - (b) implement the approved measures.
- 3.7.3 Continuous measurement systems on emission points from the LCP shall be subject to quality control by means of parallel measurements with reference methods at least once every calendar year.
- 3.7.4 Unless otherwise agreed in writing by the Agency in accordance with condition 3.7.5 below, the operator shall carry out the methods, including the reference measurement methods, to use and calibrate continuous measurement systems in accordance with the appropriate CEN standards.
- 3.7.5 If CEN standards are not available, ISO standards, national or international standards which will ensure the provision of data of an equivalent scientific quality shall be used, as agreed in writing with the Agency.
- 3.7.6 Where required by a condition of this permit to check the measurement equipment the operator shall submit a report to the Agency in writing, within 28 days of the completion of the check.

4. Information

4.1 Records

4.1.1 All records required to be made by this permit shall:

- (a) be legible;
- (b) be made as soon as reasonably practicable;
- (c) if amended, be amended in such a way that the original and any subsequent amendments remain legible, or are capable of retrieval; and
- (d) be retained, unless otherwise agreed in writing by the Agency, for at least 6 years from the date when the records were made, or in the case of the following records until permit surrender:
 - (i) the site protection and monitoring programme.

4.1.2 Any records required to be made by this permit shall be supplied to the Agency within 14 days where the records have been requested in writing by the Agency.

4.1.3 All records required to be held by this permit shall be held on the installation and shall be available for inspection by the Agency at any reasonable time.

4.2 Reporting

4.2.1 A report or reports on the performance of the activities over the previous year shall be submitted to the Agency by 31 January (or other date agreed in writing by the Agency) each year. The report(s) shall include as a minimum:

- (a) a review of the results of the monitoring and assessment carried out in accordance with this permit against the relevant assumptions, parameters and results in the assessment of the impact of the emissions submitted with the application;
- (b) where the operator's management system encompasses annual improvement targets, a summary report of the previous year's progress against such targets;
- (c) the annual production /treatment data set out in schedule 5 table S5.2;
- (d) the performance parameters set out in schedule 5 table S5.3 using the forms specified in table S5.4 of that schedule; and
- (e) details of any contamination or decontamination of the site which has occurred.

4.2.2 Within 28 days of the end of the reporting period the operator shall, unless otherwise agreed in writing by the Agency, submit reports of the monitoring and assessment carried out in accordance with the conditions of this permit, as follows:

- (a) in respect of the parameters and emission points specified in schedule 5 table S5.1;
- (b) for the reporting periods specified in schedule 5 table S5.1 and using the forms specified in schedule 5 table S5.4 ; and

- (c) giving the information from such results and assessments as may be required by the forms specified in those tables.
- 4.2.3 A summary report of the waste types and quantities accepted and removed from the site shall be made for each quarter. It shall be submitted to the Agency within one month of the end of the quarter and shall be in the format required by the Agency.
- 4.2.4 The operator shall, unless notice under this condition has been served within the preceding 4 years, submit to the Agency, within 6 months of receipt of a written notice, a report assessing whether there are other appropriate measures that could be taken to prevent, or where that is not practicable, to minimise pollution.
- 4.2.5 All reports and notifications required by the permit shall be sent to the Agency using the contact details supplied in writing by the Agency
- 4.2.6 The results of reviews and any changes made to the site protection and monitoring programme shall be reported to the Agency, within 1 month of the review or change.

4.3 Notifications

- 4.3.1 The Agency shall be notified without delay following the detection of:
 - (a) any malfunction, breakdown or failure of equipment or techniques, accident, or fugitive emission which has caused, is causing or may cause significant pollution;
 - (b) the breach of a limit specified in the permit;
 - (c) any significant adverse environmental effects.
- 4.3.2 Any information provided under condition 4.3.1 shall be confirmed by sending the information listed in schedule 6 to this permit within the time period specified in that schedule.
- 4.3.3 Prior written notification shall be given to the Agency of the following events and in the specified timescales:
 - (a) as soon as practicable prior to the permanent cessation of any of the activities;
 - (b) cessation of operation of part or all of the activities for a period likely to exceed 1 year; and
 - (c) resumption of the operation of part or all of the activities after a cessation notified under (b) above.
- 4.3.4 The Agency shall be given at least 14 days notice before implementation of any part of the site closure plan.
- 4.3.5 Where the Agency has requested in writing that it shall be notified when the operator is to undertake monitoring and/or spot sampling, the operator shall inform the Agency when the relevant monitoring is to take place. The operator shall provide this information to the Agency at least 14 days before the date the monitoring is to be undertaken.
- 4.3.6 The Agency shall be notified within 14 days of the occurrence of the following matters, except where such disclosure is prohibited by Stock Exchange rules
 - (a) any change in the operator's trading name, registered name or registered office address;
 - (b) any change to particulars of the operator's ultimate holding company (including details of an ultimate holding company where an operator has become a subsidiary); and

- (c) any steps taken with a view to the operator going into administration, entering into a company voluntary arrangement or being wound up.

- 4.3.7 From 1 January 2008 the Operator shall inform the Agency in writing of the closure of any relevant LCP within 28 days of the date of closure.

4.4 Interpretation

- 4.4.1 In this permit the expressions listed in schedule 7 shall have the meaning given in that schedule.

Schedule 1 - Operations

Table S1.1 activities		
Activity listed in Schedule 1 of the PPC Regulations	Description of specified activity	Limits of specified activity
Section 1.1 A(1) (a) : Burning any fuel in an appliance with a rated thermal input of 50 megawatts or more	Production of electricity in a combined cycle gas turbines (GT1) (CCGT) with a maximum nominal thermal input of 395MW operating on natural gas with gas oil backup.	From receipt of raw materials to despatch of products and waste
	Production of electricity in a combined cycle gas turbines (GT2) (CCGT) with a maximum nominal thermal input of 395MW operating on natural gas with gas oil backup.	From receipt of raw materials to despatch of products and waste
Directly Associated Activity		
Directly associated activity	Gas oil storage	From receipt of raw materials to dispatch for use. Maximum storage capacity 21,000 m ³ .
Directly associated activity	Surface water drainage to Racecourse Drain	Handling and storage of site drainage from external areas of the site, including the gas oil loading area, until discharged to the Racecourse drain.
Directly associated activity	Operation of two heat recovery steam generators (HRSGs).	From receipt of raw materials to dispatch of products and waste.
Directly associated activity	Operation of one steam turbine	From input of steam to dispatch of products and waste
Directly associated activity	Filtration, ion exchange water treatment.	From receipt of raw materials to dispatch to chemical effluent and dirty water system.
Directly associated activity	Miscellaneous utility systems (incl emergency diesel generator, lubrication systems, control systems)	From receipt of raw materials to dispatch for use.

Table S1.2 Operating techniques		
Description	Parts	Date Received
Application	The responses to sections 2.1 and 2.2 of the Application.	20/03/06

Table S1.3 Improvement programme requirements

Reference	Requirement	Date
IC1	<p>A written training plan shall be submitted to the Agency for approval, and the measures to comply with the requirements set out in Section 2.3 of the Agency Combustion Technical Guidance Note. The plan shall include but not be limited to:</p> <ul style="list-style-type: none"> - Identify all posts for which specific environmental awareness training is required; and - Identify the scope and level to which such training is to be given (this shall include contractors and those responsible for liaising with contractors and those purchasing equipment and materials). <p>The plan shall be implemented by the operator from the date of approval in writing by the Agency.</p>	01/07/07
IC2	<p>The operator shall undertake an assessment of the primary, secondary and tertiary containment arrangements against the requirements of section 2.2.9 of the Combustion Technical Guidance Note to identify and address any deficiencies. The review shall include, but not be limited to:</p> <ul style="list-style-type: none"> - storage and transfer of diesel from storage tanks and unloading; - water treatment chemicals unloading; subsurface pipework; - contractors compound; and - air cooled condenser washings. <p>A written report of the assessment, including corrective actions and timescales shall be submitted to the Agency.</p> <p>The corrective actions shall be implemented from the date of approval by the Agency.</p>	01/10/07
IC3	<p>A written procedure shall be submitted to the agency detailing the measures to be used so that monitoring equipment, personnel and organisations employed for the emissions monitoring programme shall have either MCERTS certification or accreditation in accordance with condition 3.6.3.</p> <p>The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the procedure.</p> <p>The procedure shall be implemented by the operator from the date of approval in writing by the Agency.</p>	01/01/08
IC4	<p>A written report shall be submitted to the Agency for approval. The report shall contain the findings of a water efficiency audit in accordance with the requirements of section 2.4.3 of IPPC Sector Guidance Note for the Combustion Sector, including dates for the implementation of individual improvement measures identified.</p> <p>The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the report.</p> <p>The improvements shall be implemented by the Operator from the date of approval in writing by the Agency.</p>	01/05/08
IC5	<p>The Operator shall submit a report to the Agency, summarising an improvement programme to achieve the benchmark levels given in the Environment Agency's Combustion Technical Guidance note for emissions of nitrogen dioxide from emission points A1 and A3. The improvement program shall contain dates for the implementation of any proposed changes.</p> <p>The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the report.</p> <p>The plan shall be implemented by the operator from the date of approval by the Agency.</p>	01/07/08
IC6	<p>The operator shall carry out an energy efficiency audit in accordance with section 2.7 of IPPC Sector Guidance Note Combustion Activities. A written report of the audit shall be submitted to the Agency and shall include a plan for completion of any improvements identified. Where appropriate the plan shall contain dates for the implementation of</p>	01/01/09

individual measures.

The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the plan.

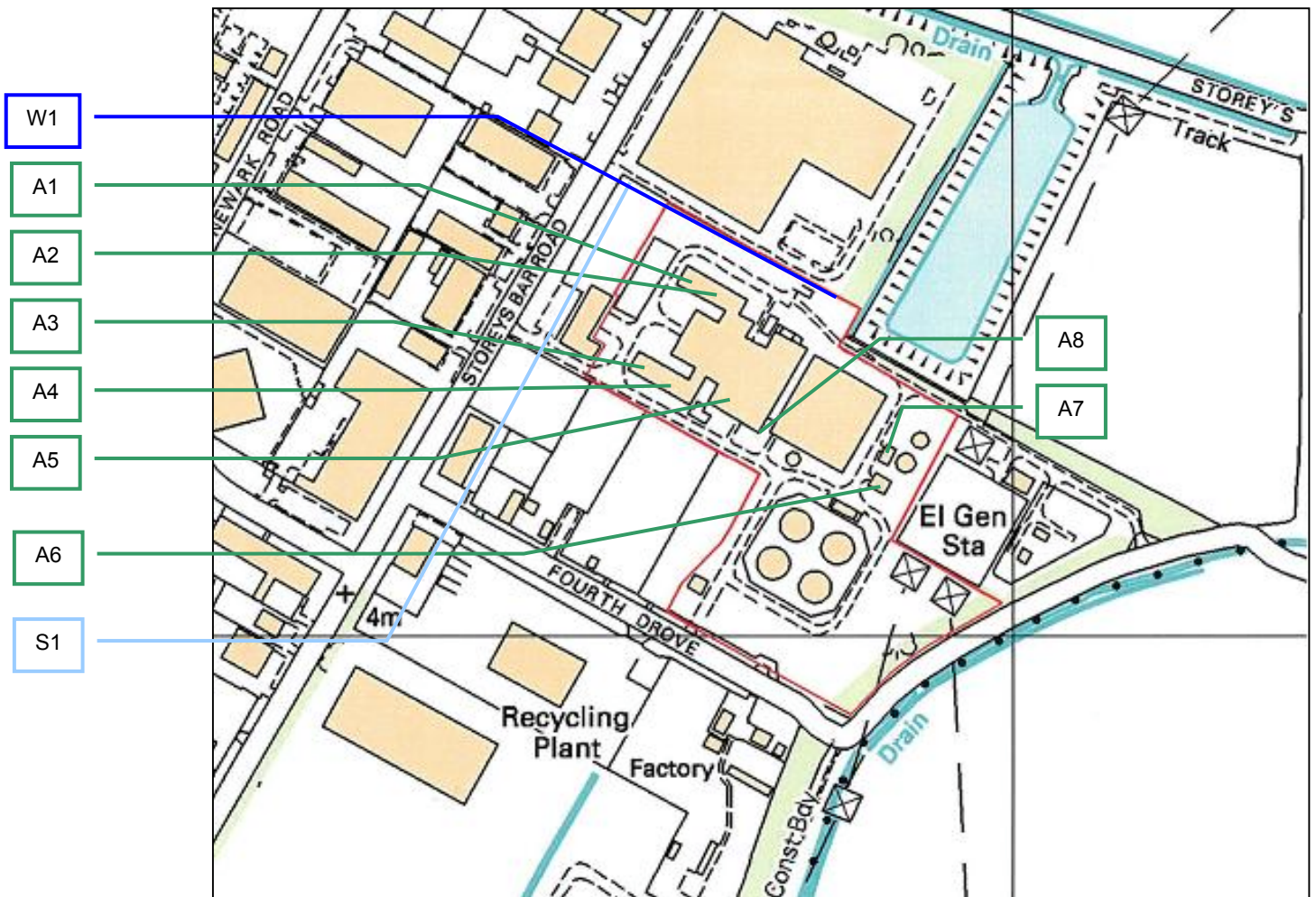
The plan shall be implemented by the operator from the date of approval by the Agency.

IC7	The operator shall produce a written site closure plan in line with the requirements of section 2.11 of the Combustion Technical Guidance Note. A copy of the site closure plan shall be submitted to the Agency.	01/01/09
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Table S1.4 Pre-operational measures

Reference	Pre-operational measures
1	At least 2 weeks before operating the roof located gas oil tank for the storage of gas oil the operator shall submit to the Agency a report detailing what improvements have been made to the tank and how these minimise emissions through the application of BAT. This report must be approved by the Agency in writing prior to the storage of gas oil in the roof located gas oil tank.

Schedule 2 - Site plan



Schedule 3 - Waste types, raw materials and fuels

Table S3.1 Raw materials and fuels

Raw materials and fuel description	Specification
Gas oil until 31/12/2007	Less than 0.2% w/w sulphur content
Gas oil from 01/01/2008	Less than 0.1% w/w sulphur content
Water treatment plant chemicals	Discharges of mercury as a result of the impurities of raw materials used in the water treatment plant shall be controlled by ensuring that impurity levels are the minimum available in the commercial product.
Water treatment plant chemicals	Discharges of cadmium as a result of the impurities of raw materials used in the water treatment plant shall be controlled by ensuring that impurity levels are the minimum available in the commercial product.

Schedule 4 – Emissions and monitoring

Note

For the purposes of this schedule the following interpretations shall apply:

- For the CEMs fitted to release points A1, A2, A3 and A4, the Operator shall determine the validated hourly averages from the measured hourly average values by subtracting the value of the 95 % confidence interval.
- The 95% confidence interval for nitrogen oxides of a single measured result shall be taken to be 20%.
- An invalid hourly average means an hourly average period invalidated due to malfunction of, or maintenance work being carried out on, the continuous measurement system. However, to allow some discretion for zero and span gas checking, or cleaning (by flushing), an hourly average period will count as valid as long as data has been accumulated for at least two thirds of the period (40 minutes). Such discretionary periods are not to exceed more than 5 in any one 24-hour period unless agreed in writing. Where plant may be operating for less than the 24-hour period, such discretionary periods are not to exceed more than one quarter of the overall valid hourly average periods unless agreed in writing.
- Any day, in which more than three hourly average values are invalid shall be invalidated.

Table S4.1 Point source emissions to air from Gas Turbines

Emission point ref. & location	Parameter	Source	Limit (including unit)	Reference period	Monitoring frequency	Monitoring standard or method
A1 on site plan in schedule 2	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	Gas turbine 1 fired on natural gas	125mg/m ³ Note 1	Daily mean of validated hourly averages	Continuous	BS EN 14181 Note 3
A1 on site plan in schedule 2	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	Gas turbine 1 fired on natural gas	375 mg/m ³ Note 2	Hourly mean	Continuous	BS EN 14181 Note 3
A1 on site plan in schedule 2	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	Gas turbine 1 fired on gas oil	230 mg/m ³ Note 1	Daily mean of validated hourly averages	Continuous	BS EN 14181 Note 3
A1 on site plan in schedule 2	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	Gas turbine 1 fired on gas oil	690 mg/m ³ Note 2	Hourly mean	Continuous	BS EN 14181 Note 3
A2 on site plan in schedule 2	No parameters set	Gas turbine 1 bypass stack	-	-	-	No permanent sampling access required
A3 on site plan in schedule 2	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	Gas turbine 2 fired on natural gas	125mg/m ³ Note 1	Daily mean of validated hourly averages	Continuous	BS EN 14181 Note 3
A3 on site plan in schedule 2	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	Gas turbine 2 fired on natural gas	375mg/m ³ Note 2	Hourly mean	Continuous	BS EN 14181 Note 3
A3 on site plan in schedule 2	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	Gas turbine 2 fired on gas oil	230 mg/m ³ Note 1	Daily mean of validated hourly averages	Continuous	BS EN 14181 Note 3
A3 on site plan in schedule 2	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	Gas turbine 2 fired on gas oil	690 mg/m ³ Note 2	Hourly mean	Continuous	BS EN 14181 Note 3
A4 on site plan in schedule 2	No parameters set	Gas turbine 2 bypass stack	-	-	-	No permanent sampling access required
A5 on site plan in schedule 2	No parameters set	Flue gases from 1.6 MWth auxiliary boiler	-	-	-	No permanent sampling access required
A6 on site plan in schedule 2	No parameters set	Black start generator exhaust	-	-	-	No permanent sampling access required
A7 on site plan in schedule 2	No parameters set	Flue gases from two fire water pumps	-	-	-	No permanent sampling access required

A8 on site plan in schedule 2	No parameters set	Vent from hydrochloric acid storage scrubber	-	-	-	No permanent sampling access required
Note 1	This limit does not apply during start-up, shut-down, recommissioning after maintenance overhauls and for the first 30 minutes after a fuel changeover.					
Note 2	This limit applies for periods not exceeding six hours for NO _x reduction system planned maintenance or on up to two occasions per year when generation testing is being completed.					
Note 3	In the event of failure of the continuous NO _x monitors installed to measure concentrations in the discharge to air, or in the event of a requirement for the maintenance or recalibration, records of normal steam flow into the gas turbine combustion chambers will be acceptable as an alternative evidence that the levels of NO _x are being controlled within the limits specified.					

Table S4.2 Point Source emissions to water (other than sewer) – emission limits and monitoring requirements

Emission point ref. & location	Parameter	Source	Limit (incl. unit)	Reference period	Monitoring frequency	Monitoring standard or method
W1 on site plan in schedule 2 emission to Racecourse Drain	No parameters set	Surface water runoff, from roofs, roads and hard standing	-	-	-	No permanent sampling access required

Table S4.3 Point Source emissions to sewer – emission limits and monitoring requirements

Emission point ref. & location	Parameter	Source	Limit (incl. unit)	Reference period	Monitoring frequency	Monitoring standard or method
S1 on site plan in schedule 2	No parameters set	Ion exchange water treatment facility Gland steam boiler blow down; AAC Backwash filter; Waste water from DA / Condensate sampling skid; Floor drains from within the auxiliary annex building; Steam turbine hall process drains; Caustic soda and hydrochloric acid bunded areas; and Caustic soda and hydrochloric acid offloading area.	-	-	-	No permanent sampling access required

Schedule 5 - Reporting

Parameters, for which reports shall be made, in accordance with conditions of this permit, are listed below.

Table S5.1 Reporting of monitoring data

Parameter	Emission or monitoring point/reference	Reporting period	Period begins
Emissions to air.	A1 and A3	Every 3 months	01/01/07
Parameters as required by condition 3.6.1.			

Table S5.2: Annual production/treatment

Parameter	Units
Power generated	GWhr

Table S5.3 Performance parameters

Parameter	Frequency of assessment	Units
Water usage	Annually	m ³
Gas usage per MWhr generation	Annually	m ³ /MWhr
Gas oil usage per MWhr generation	Annually	tonnes/MWhr
Thermal efficiency	Annually	%
Energy usage	Annually (starting with year 01/01/08 – 31/12/08)	MW
Waste disposed of per MWhr generation	Annually	tonnes/MWhr
Total mass release of oxides of nitrogen	Annually	tonnes

Table S5.4 Reporting forms

Media/parameter	Reporting format	Starting Point	Agency recipient	Date of form
Air	Form Air – 2 continuous monitoring or other form as agreed in writing by the Agency	01/01/07	SI	01/01/07
Energy	Form Air – 7 Energy Usage summary or other form as agreed in writing by the Agency	01/01/07	SI & Central office	01/01/07
Water usage	Form water usage ¹ or other form as agreed in writing by the Agency	01/01/07	SI	01/01/07
Other performance indicators	Form performance 1 or other form as agreed in writing by the Agency	01/01/07	SI	01/01/07

Schedule 6 - Notification

These pages outline the information that the operator must provide.

Units of measurement used in information supplied under Part A and B requirements shall be appropriate to the circumstances of the emission. Where appropriate, a comparison should be made of actual emissions and authorised emission limits.

If any information is considered commercially confidential, it should be separated from non-confidential information, supplied on a separate sheet and accompanied by an application for commercial confidentiality under the provisions of the PPC Regulations.

Part A

Permit Number	AP3233LU
Name of operator	Centrica PB Limited
Location of Installation	
Time and date of the detection	

(a) Notification requirements for any malfunction, breakdown or failure of equipment or techniques, accident, or fugitive emission which has caused, is causing or may cause significant pollution

To be notified within 24 hours of detection	
Date and time of the event	
Reference or description of the location of the event	
Description of where any release into the environment took place	
Substances(s) potentially released	
Best estimate of the quantity or rate of release of substances	
Measures taken, or intended to be taken, to stop any emission	
Description of the failure or accident.	

(b) Notification requirements for the breach of a limit

To be notified within 24 hours of detection	
Emission point reference/ source	
Parameter(s)	
Limit	
Measured value and uncertainty	
Date and time of monitoring	
Measures taken, or intended to be taken, to stop the emission	

(c) Notification requirements for the detection of any significant adverse environmental effect	
To be notified within 24 hours of detection	
Description of where the effect on the environment was detected	
Substances(s) detected	
Concentrations of substances detected	
Date of monitoring/sampling	

Part B - to be submitted as soon as practicable

Any more accurate information on the matters for notification under Part A.	
Measures taken, or intended to be taken, to prevent a recurrence of the incident	
Measures taken, or intended to be taken, to rectify, limit or prevent any pollution of the environment which has been or may be caused by the emission	
The dates of any unauthorised emissions from the installation in the preceding 24 months.	

Name*	
Post	
Signature	
Date	

* authorised to sign on behalf of Centrica PB Limited.

Schedule 7 - Interpretation

"*accident*" means an accident that may result in pollution.

"*annually*" means once every year.

"*application*" means the application for this permit, together with any additional information supplied by the operator as part of the application and any response to a notice served under Schedule 4 to the PPC Regulations.

"*authorised officer*" means any person authorised by the Agency under section 108(1) of The Environment Act 1995 to exercise, in accordance with the terms of any such authorisation, any power specified in section 108(4) of that Act.

"*calendar monthly mean*" means the value across a calendar month of all validated hourly means.

"*Combustion Technical Guidance Note*" means IPPC Sector Guidance Note Combustion Activities, version 2.03 dated 27th July 2005 published by Environment Agency.

"*Commissioning*" means a period of time allowed for the confirmation of correct operation of the installation when actions such as control adjustments, instrument calibrations etc. take place followed by the return to full service and availability

"*DLN*" means dry, low NO_x burners.

"*emissions to land*", includes emissions to groundwater.

"*fugitive emission*" means an emission to air, water or land from the activities which is not controlled by an emission limit.

"*groundwater*" means all water, which is below the surface of the ground in the saturation zone and in direct contact with the ground or subsoil.

"*land protection guidance*", means Agency guidance "H7 - Guidance on the protection of land under the PPC Regime: application site report and site protection monitoring programme".

"*large combustion plant*" or "*LCP*" is a boiler or group of boilers discharging waste gases through a common windshield or stack, where the total thermal input is 50 MWth or more, based on gross calorific value.

"*Large Combustion Plant Directive*" means Directive 2001/80/EC of the European Parliament and of the Council of 23 October 2001 on the limitation of emissions of certain pollutants into the air from large combustion plants.

"*MCERTS*" means the Environment Agency's Monitoring Certification Scheme.

"*Natural gas*" means naturally occurring methane with no more than 20% by volume of inert or other constituents..

"*notify without delay*" / "*notified without delay*" means that a telephone call can be used, whereas all other reports and notifications must be supplied in writing, either electronically or on paper.

"*NO_x reduction system maintenance*" mean pre-planned maintenance of the components and equipment that supplies the process steam and controls the steam injection into the gas turbines.

"*operational hours*" are whole hours commencing from the first unit ending start up and ending when the last unit commences shut down.

"*PPC Regulations*" means the Pollution, Prevention and Control (England and Wales) Regulations SI 2000 No.1973 and words and expressions used in this permit which are also used in the Regulations have the same meanings as in those Regulations.

"*quarter*" means a calendar year quarter commencing on 1 January, 1 April, 1 July or 1 October.

"*SI*" means site inspector

"*site protection and monitoring programme*" means a document which meets the requirements for site protection and monitoring programmes described in the Land Protection Guidance.

"*Start-up*" means the time for the steam turbine to reach its governed load plus one hour or until two hours from when the high-pressure steam system reaches 35 bar if the steam turbine start is delayed.

"*Shut down*" means a period of 1 hour following the steam injection system tripping out during shutdown operations.

"*Testing*" for periods not exceeding four hours, on up to two occasions per year when generation testing is being completed when the hourly average concentration shall not exceed 3.0 times the limit detailed in Table S4.1.

"*year*" means calendar year ending 31 December.

Unless otherwise stated any references in this permit to concentrations of substances in emissions into air means:

- (a) in relation to emissions from combustion processes, the concentration in dry air at a temperature of 273K, at a pressure of 101.3 kPa and with an oxygen content of 3%, dry for liquid and gaseous fuels, 6%, dry for solid fuels.
- (b) in relation to emissions from non-combustion sources, the concentration at a temperature of 273K and at a pressure of 101.3 kPa, with no correction for water vapour content.
- (c) in relation to gas turbines or compression ignition engines; an oxygen content of 15%, dry, the concentration at a temperature of 273K and at a pressure of 101.3 kPa, for liquid and gaseous fuels.
- (d) in relation to the manufacture of gypsum based products; an oxygen content of 18%, dry, the concentration at a temperature of 273K, and at a pressure of 101.3 kPa, for liquid and gaseous fuels.
- (e) In relation to spark ignition engines; an oxygen content of 5%, dry, the concentration at a temperature of 273K and at a pressure of 101.3 kPa, for liquid and gaseous fuels.

END OF PERMIT