



# Notice of variation and consolidation with introductory note

## The Environmental Permitting (England & Wales) Regulations 2010

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Keadby Generation Limited

Keadby Power Station  
Trentside  
Keadby  
Scunthorpe  
DN17 3EF

### **Variation application number**

EPR/YP3133LL/V006

### **Permit number**

EPR/YP3133LL

# Keadby Power Station

## Permit number EPR/YP3133LL

### Introductory note

#### **This introductory note does not form a part of the notice.**

Under the Environmental Permitting (England & Wales) Regulations 2010 (schedule 5, part 1, paragraph 19) a variation may comprise a consolidated permit reflecting the variations and a notice specifying the variations included in that consolidated permit.

Schedule 1 of the notice specifies that all the conditions of the permit have been varied and schedule 2 comprises a consolidated permit which reflects the variations being made and contains all conditions relevant to this permit.

The requirements of the Industrial Emissions Directive (IED) 2010/75/EU are given force in England through the Environmental Permitting (England and Wales) Regulations 2010 (the EPR) (as amended).

This Permit, for the operation of large combustion plant (LCP), as defined by articles 28 and 29 of the Industrial Emissions Directive (IED), is varied by the Environment Agency to implement the special provisions for LCP given in the IED, by the 1 January 2016 (Article 82(3)). The IED makes special provisions for LCP under Chapter III, introducing new Emission Limit Values (ELVs) applicable to LCP, referred to in Article 30(2) and set out in Annex V.

As well as implementing Chapter III of IED, the consolidated variation notice takes into account and brings together in a single document all previous variations that relate to the original permit issued. It also modernises all conditions to reflect the conditions contained in our current generic permit template.

The Operator has chosen to operate this LCP under the Transitional National Plan (TNP) compliance route.

The variation notice uses updated LCP numbers in accordance with the most recent DEFRA LCP reference numbers. The LCP references have changed as follows:

- LCP413 is changed to LCP202;
- LCP414 is changed to LCP203;
- LCP415 is changed to LCP204.

For LCP202 and LCP203 emission Points A1 and A2 have been amended to be referenced A1(a) and A2 (a) this is to distinguish the windshields for the CCGT operation from the bypass OCGT windshields which are emission points A1(b) and A2 (b).

An additional surface water monitoring emission point, W4, has been included.

The rest of the installation is unchanged and continues to be operated as follows:

Keadby Power Station is located at Keadby, Scunthorpe in North Lincolnshire. The entire installation covers an area of around 101,650 m<sup>2</sup> in an area 500m north west of the village of Keadby with the centre of the site at grid reference SE 828 116. The area is predominantly mixed residential and agricultural use. To the east lies the River Trent approximately 450m running in a south to north direction feeding into the Humber Estuary (a SSSI and listed European Site to the north-east). The distillate oil off loading jetty is located on Trentside Road which runs alongside the River Trent with a small school, wood yard and a number of residential properties located on the opposite side of Trentside Road. Further to the east lies Scunthorpe at approximately 3.5km. The nearest houses are 150m and 200m to the north (both single properties) with a number of further properties at 250m. Immediately to south lies Stainforth and Keadby Canal and beyond this to the north-east a housing estate at approximately 500m. To the west is undeveloped land, with reported historical use for coal stock and ash tipping. There are emissions to air and to water from the installation.

The main operational processes at the installation consists of two General Electric 9FA gas turbines (230Mwe each) fitted with dry low NO<sub>x</sub> burners. Each gas turbine exhausts through a heat recovery boiler with the combined steam output passing to the condensing steam turbine (nominal capacity of 260MW). The windshields for the 2 x CCGT stacks are 60m and the 2 x OCGT stacks are 47m. All electrical capacity is exported to the National Grid less the parasitic station load of nominally 12MW. Total thermal input for the gas turbines and steam turbine is approximately 1,329MW.

A standalone auxiliary gas turbine of 25MW (75MW thermal input) operates in open cycle mode, with a windshield of 50m and provides additional supply to the grid during high demand periods and for main plant start up during 'black start' conditions. An auxiliary gas boiler of approximately 2MW provides steam for gland sealing and plant start up.

The schedules specify the changes made to the permit.

The status log of a permit sets out the permitting history, including any changes to the permit reference number.

<b>Status log of the permit</b>		
<b>Description</b>	<b>Date</b>	<b>Comments</b>
Application EPR/YP3133LL/A001	Duly made 03/04/06	
Additional information received		13/10/06, 27/10/06
Permit determined EPR/YP3133LL	21/06/07	
Variation determined EPR/YP3133LL/V002	21/01/10	Variation to correct errors, incorporate benchmark emission limits and update improvement conditions table.
Variation determined EPR/YP3133LL/V003	04/02/10	Variation to correct errors, incorporate benchmark emission limits and update improvement conditions table.
Variation determined EPR/YP3133LL/V004	11/03/13	Environment Agency initiated variation, to incorporate Eel Regulations improvement condition.
Variation determined EPR/YP3133LL/V005	Issued 29/09/14	Environment Agency Initiated Variation, to add an improvement condition requiring a cost benefit appraisal to ensure compliance with the Eels Regulations. Effective 1/10/14.
Regulation 60 Notice sent to the Operator	31/10/14	Issue of a Notice under Regulation 60(1) of the EPR. Environment Agency Initiated review and variation to vary the permit under IED to implement the special provisions for LCP under Chapter III, introducing new Emission Limit Values (ELVs) applicable to LCP, referred to in Article 30(2) and set out in Annex V. The permit is also updated to modern conditions.
Regulation 60 Notice response	23/03/15	Response to Notice under Regulation 60(1) of the EPR received from the Operator.
Additional information received	10/07/15	Response to request for further information (RFI) dated 26/06/15.
Additional information received	05/11/15	Response to request for further information (RFI) dated 05/11/15 regarding water emission point and LCP204.
Additional information received	19/11/15	Response to request for further information (RFI) dated 18/11/15 requesting revised plan of emission points

<b>Status log of the permit</b>		
<b>Description</b>	<b>Date</b>	<b>Comments</b>
Additional information received	27/11/15	Response to the request for information (RFI) regarding MSUL/MSDL dated 18/11/15.
Additional information received	21/12/15	Confirmation of compliance route (TNP) for LCPs. Letter dated 18/12/15.
Variation determined EPR/YP3133LL/V006 (PAS Billing ref: TP3234AE)	24/12/15	Varied and consolidated permit issued in modern condition format. Variation effective from 01/01/16.

<b>Other Part A installation permits relating to this installation</b>		
<b>Operator</b>	<b>Permit number</b>	<b>Date of issue</b>
National Grid	BP3438LD	20/12/06

End of introductory note

# Notice of variation and consolidation

## The Environmental Permitting (England and Wales) Regulations 2010

The Environment Agency in exercise of its powers under regulation 20 of the Environmental Permitting (England and Wales) Regulations 2010 varies and consolidates

### Permit number

**EPR/YP3133LL**

### Issued to

**Keadby Generation Limited** (“the operator”)

whose registered office is

**PO Box 89**

**Keadby**

**Scunthorpe**

**North Lincolnshire**

**DN17 3AZ**

company registration number 02729513

to operate a regulated facility at

**Keadby Power Station**

**Trentside**

**Keadby**

**Scunthorpe**

**DN17 3EF**

to the extent set out in the schedules.

The notice shall take effect from 01/01/2016

<b>Name</b>	<b>Date</b>
<b>Claire Roberts</b>	<b>24/12/2015</b>

Authorised on behalf of the Environment Agency

## **Schedule 1**

All conditions have been varied by the consolidated permit as a result of an Environment Agency initiated variation.

## **Schedule 2 – consolidated permit**

Consolidated permit issued as a separate document.

# Permit

## The Environmental Permitting (England and Wales) Regulations 2010

### Permit number

**EPR/YP3133LL**

This is the consolidated permit referred to in the variation and consolidation notice for application EPR/YP3133LL/V006 authorising,

**Keadby Generation Limited** (“the operator”),

whose registered office is

**PO Box 89**

**Keadby**

**Scunthorpe**

**North Lincolnshire**

**DN17 3AZ**

company registration number 02729513

to operate a regulated facility at

**Keadby Power Station**

**Trentside**

**Keadby**

**Scunthorpe**

**DN17 3EF**

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

Name	Date
Claire Roberts	24/12/2015

Authorised on behalf of the Environment Agency

# Conditions

## 1 Management

### 1.1 General management

1.1.1 The operator shall manage and operate the activities:

- (a) in accordance with a written management system that identifies and minimises risks of pollution, including those arising from operations, maintenance, accidents, incidents, non-conformances, closure and those drawn to the attention of the operator as a result of complaints; and
- (b) using sufficient competent persons and resources.

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 Energy efficiency

1.2.1 The operator shall:

- (a) take appropriate measures to ensure that energy is used efficiently in the activities;
- (b) take appropriate measures to ensure the efficiency of energy generation at the permitted installation is maximised;
- (c) review and record at least every four years whether there are suitable opportunities to improve the energy efficiency of the activities; and
- (d) take any further appropriate measures identified by a review.

### 1.3 Efficient use of raw materials

1.3.1 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 four 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 further appropriate measures identified by a review.

### 1.4 Avoidance, recovery and disposal of wastes produced by the activities

1.4.1 The operator shall take appropriate measures to ensure that:

- (a) the waste hierarchy referred to in Article 4 of the Waste Framework Directive is applied to the generation of waste by the activities;
- (b) any waste generated by the activities is treated in accordance with the waste hierarchy referred to in Article 4 of the Waste Framework Directive; and
- (c) where disposal is necessary, this is undertaken in a manner which minimises its impact on the environment.



- 1.4.2 The operator shall review and record at least every four years whether changes to those measures should be made and take any further appropriate measures identified by a review.

## **1.5 Multiple operator installations**

- 1.5.1 Where the operator notifies the Environment Agency under condition 4.3.1 (a) or 4.3.1 (c), the operator shall also notify without delay the other operator(s) of the installation of the same information.

## **2 Operations**

### **2.1 Permitted activities**

- 2.1.1 The operator is only 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 7 to this permit, but excluding the land edged in blue on the site plan that represents a separately permitted site and the land edged in green that represents the car park and is excluded from the permitted area.

### **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 Environment Agency.
- 2.3.2 For the following activities referenced in schedule 1, table S1.1: LCP202, LCP203 and LCP204. Without prejudice to condition 2.3.1, the activities shall be operated in accordance with the “Electricity Supply Industry IED Compliance Protocol for Utility Boilers and Gas Turbines” revision 1 dated February 2015 or any later version unless otherwise agreed in writing by the Environment Agency.
- 2.3.3 If notified by the Environment Agency that the activities are giving rise to pollution, the operator shall submit to the Environment Agency for approval within the period specified, a revision of any plan or other documentation (“plan”) specified in schedule 1, table S1.2 or otherwise required under this permit which identifies and minimises the risks of pollution relevant to that plan, and shall implement the approved revised plan in place of the original from the date of approval, unless otherwise agreed in writing by the Environment Agency.
- 2.3.4 Any raw materials or fuels listed in schedule 2 table S2.1 shall conform to the specifications set out in that table.
- 2.3.5 For the following activities referenced in schedule 1, table S1.1: LCP202, LCP203 and LVP204. Standby fuel gas oil may be used but for no more than 500 hours per year.
- 2.3.6 For the following activities referenced in schedule 1, table S1.1: LCP202 and LCP203 operating in open cycle mode. The activities shall not operate for more than 500 hours per year.
- 2.3.7 For the following activities referenced in schedule 1, table S1.1: LCP202, LCP203 and LCP204. The end of the start up period and the start of the shutdown period shall conform to the specifications set out in Schedule 1, tables S1.2 and S1.4
- 2.3.8 The operator shall ensure that where waste produced by the activities is sent to a relevant waste operation, that operation is provided with the following information, prior to the receipt of the waste:
- (a) the nature of the process producing the waste;

- (b) the composition of the waste;
- (c) the handling requirements of the waste;
- (d) the hazardous property associated with the waste, if applicable; and
- (e) the waste code of the waste.

2.3.9 The operator shall ensure that where waste produced by the activities is sent to a landfill site, it meets the waste acceptance criteria for that landfill.

## **2.4 Improvement programme**

2.4.1 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 Environment Agency.

2.4.2 Except in the case of an improvement which consists only of a submission to the Environment Agency, the operator shall notify the Environment Agency within 14 days of completion of each improvement.

## **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 3 tables S3.1 and S3.2.

3.1.2 The limits given in schedule 3 shall not be exceeded.

3.1.3 Total annual emissions from the LCP emission points set out in schedule 3 tables S3.1 and S3.2 of a substance listed in schedule 3 table S3.3 shall not exceed the relevant limit in table S3.3.

3.1.4 Periodic monitoring shall be carried out at least once every 5 years for groundwater and 10 years for soil, unless such monitoring is based on a systematic appraisal of the risk of contamination.

### **3.2 Emissions of substances not controlled by emission limits**

3.2.1 Emissions of substances not controlled by emission limits (excluding odour) shall not cause pollution. The operator shall not be taken to have breached this condition if appropriate measures, including, but not limited to, those specified in any approved emissions management plan, have been taken to prevent or where that is not practicable, to minimise, those emissions.

3.2.2 The operator shall:

- (a) if notified by the Environment Agency that the activities are giving rise to pollution, submit to the Environment Agency for approval within the period specified, an emissions management plan which identifies and minimises the risks of pollution from emissions of substances not controlled by emission limits;
- (b) implement the approved emissions management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

3.2.3 All liquids in containers, 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.

### **3.3 Odour**

3.3.1 Emissions from the activities shall be free from odour at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Environment Agency, unless the operator has used

appropriate measures, including, but not limited to, those specified in any approved odour management plan, to prevent or where that is not practicable to minimise the odour.

3.3.2 The operator shall:

- (a) if notified by the Environment Agency that the activities are giving rise to pollution outside the site due to odour, submit to the Environment Agency for approval within the period specified, an odour management plan which identifies and minimises the risks of pollution from odour;
- (b) implement the approved odour management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

### **3.4 Noise and vibration**

3.4.1 Emissions from the activities shall be free from noise and vibration at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Environment Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved noise and vibration management plan to prevent or where that is not practicable to minimise the noise and vibration.

3.4.2 The operator shall:

- (a) if notified by the Environment Agency that the activities are giving rise to pollution outside the site due to noise and vibration, submit to the Environment Agency for approval within the period specified, a noise and vibration management plan which identifies and minimises the risks of pollution from noise and vibration;
- (b) implement the approved noise and vibration management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

### **3.5 Monitoring**

3.5.1 The operator shall, unless otherwise agreed in writing by the Environment Agency, undertake the monitoring specified in the following tables in schedule 3 to this permit:

- (a) point source emissions specified in tables S3.1 and S3.2;
- (b) process monitoring specified in table S3.4.

3.5.2 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 continuous), calibrations, examinations, tests and surveys and any assessment or evaluation made on the basis of such data.

3.5.3 Monitoring equipment, techniques, personnel and organisations employed for the emissions monitoring programme and the environmental or other monitoring specified in condition 3.5.1 shall have either MCERTS certification or MCERTS accreditation (as appropriate), where available, unless otherwise agreed in writing by the Environment Agency.

3.5.4 Permanent means of access shall be provided to enable sampling/monitoring to be carried out in relation to the emission points specified in schedule 3 tables S3.1 and S3.2 unless otherwise agreed in writing by the Environment Agency.

### **3.6 Monitoring for the purposes of the Industrial Emissions Directive Chapter III**

3.6.1 All monitoring required by this permit shall be carried out in accordance with the provisions of Annex V of the Industrial Emissions Directive.

3.6.2 If the monitoring results for more than 10 days a year are invalidated within the meaning set out in condition 3.6.7, the operator shall:

- (a) within 28 days of becoming aware of this fact, review the causes of the invalidations and submit to the Environment 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 proposals.
- 3.6.3 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.
- 3.6.4 Unless otherwise agreed in writing by the Environment Agency in accordance with condition 3.6.5 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.
- 3.6.5 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 Environment Agency.
- 3.6.6 Where required by a condition of this permit to check the measurement equipment, the operator shall submit a report to the Environment Agency in writing, within 28 days of the completion of the check.
- 3.6.7 Where Continuous Emission Monitors are installed to comply with the monitoring requirements in schedule 3, table S3.1; the Continuous Emission Monitors shall be used such that:
- a) for the continuous measurement systems fitted to the LCP release points defined in Table S3.1 the validated hourly, monthly and daily averages shall be determined from the measured valid hourly average values after having subtracted the value of the 95% confidence interval;
  - b) the 95% confidence interval for nitrogen oxides and sulphur dioxide of a single measured result shall be taken to be 20%;
  - c) the 95% confidence interval for dust releases of a single measured result shall be taken to be 30%;
  - d) the 95% confidence interval for carbon monoxide releases of a single measured result shall be taken to be 10%;
  - e) 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; and
  - f) any day, in which more than three hourly average values are invalid shall be invalidated.

## **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 Environment 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) off-site environmental effects; and
  - (ii) matters which affect the condition of the land and groundwater.

4.1.2 The operator shall keep on site all records, plans and the management system required to be maintained by this permit, unless otherwise agreed in writing by the Environment Agency.

## 4.2 Reporting

4.2.1 The operator shall send all reports and notifications required by the permit to the Environment Agency using the contact details supplied in writing by the Environment Agency.

4.2.2 A report or reports on the performance of the activities over the previous year shall be submitted to the Environment Agency by 31 January (or other date agreed in writing by the Environment 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 the permit including an interpretive review of that data;
- (b) the resource efficiency metrics set out in schedule 4 table S4.2;
- (c) the performance parameters set out in schedule 4 table S4.3 using the forms specified in table S4.4 of that schedule and
- (d) where conditions 2.3.5 and 2.3.6 apply the hours of operation in any year;

4.2.3 Within 28 days of the end of the reporting period the operator shall, unless otherwise agreed in writing by the Environment 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 4 table S4.1;
- (b) for the reporting periods specified in schedule 4 table S4.1 and using the forms specified in schedule 4 table S4.4; and
- (c) giving the information from such results and assessments as may be required by the forms specified in those tables.

4.2.4 The operator shall, unless notice under this condition has been served within the preceding four years, submit to the Environment Agency, within six 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 For the following activities referenced in schedule 1, table S1.1: LCP202, LCP203 and LCP204. Unless otherwise agreed in writing with the Environment Agency, within 1 month of the end of each quarter, the operator shall submit to the Environment Agency using the form IED RTA1, listed in table S4.4, the information specified on the form relating to the site's mass emissions.

## 4.3 Notifications

4.3.1 In the event:

- (a) that the operation of the activities gives rise to an incident or accident which significantly affects or may significantly affect the environment, the operator must immediately—
  - (i) inform the Environment Agency,
  - (ii) take the measures necessary to limit the environmental consequences of such an incident or accident, and

- (iii) take the measures necessary to prevent further possible incidents or accidents;
  - (b) of a breach of any permit condition the operator must immediately—
    - (i) inform the Environment Agency, and
    - (ii) take the measures necessary to ensure that compliance is restored within the shortest possible time;
  - (c) of a breach of permit condition which poses an immediate danger to human health or threatens to cause an immediate significant adverse effect on the environment, the operator must immediately suspend the operation of the activities or the relevant part of it until compliance with the permit conditions has been restored.
- 4.3.2 Any information provided under condition 4.3.1 (a)(i) or 4.3.1 (b)(i) where the information relates to the breach of a condition specified in the permit shall be confirmed by sending the information listed in schedule 5 to this permit within the time period specified in that schedule.
- 4.3.3 Where the Environment 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 Environment Agency when the relevant monitoring and/or spot sampling is to take place. The operator shall provide this information to the Environment Agency at least 14 days before the date the monitoring is to be undertaken.
- 4.3.4 The Environment Agency shall be notified within 14 days of the occurrence of the following matters, except where such disclosure is prohibited by Stock Exchange rules:
- Where the operator is a registered company:
- (a) any change in the operator's trading name, registered name or registered office address; and
  - (b) any steps taken with a view to the operator going into administration, entering into a company voluntary arrangement or being wound up.
- Where the operator is a corporate body other than a registered company:
- (c) any change in the operator's name or address; and
  - (d) any steps taken with a view to the dissolution of the operator.
- 4.3.5 Where the operator proposes to make a change in the nature or functioning, or an extension of the activities, which may have consequences for the environment and the change is not otherwise the subject of an application for approval under the Regulations or this permit:
- (a) the Environment Agency shall be notified at least 14 days before making the change; and
  - (b) the notification shall contain a description of the proposed change in operation.
- 4.3.6 The Environment Agency shall be given at least 14 days notice before implementation of any part of the site closure plan.
- 4.3.7 The operator shall inform the Environment Agency in writing of the closure of any LCP within 28 days of the date of closure.

## 4.4 Interpretation

- 4.4.1 In this permit the expressions listed in schedule 6 shall have the meaning given in that schedule.
- 4.4.2 In this permit references to reports and notifications mean written reports and notifications, except where reference is made to notification being made "immediately" or "without delay", in which case it may be provided by telephone.

# Schedule 1 – Operations

Table S1.1 activities			
Activity reference	Activity listed in Schedule 1 of the EP Regulations	Description of specified activity	Limits of specified activity
A1	Section 1.1 A(1) (a): Burning any fuel in an appliance with a rated thermal input of 50 megawatts or more.	<p>LCP202 (combined cycle mode): The operation of a Combined Cycle Gas Turbine for the generation of electricity.</p> <p>LCP202 (open cycle mode): The operation of an Open Cycle Gas Turbine for the generation of electricity.</p> <p>LCP203: (combined cycle mode): The operation of a Combined Cycle Gas Turbine for the generation of electricity.</p> <p>LCP203 (open cycle mode): The operation of an Open Cycle Gas Turbine for the generation of electricity.</p> <p>LCP204: The operation of an Open Cycle Auxiliary Gas Turbine for the generation of electricity and for black start operation.</p> <p>AB01: The operation of an auxiliary gas boiler with a net rated thermal input of 2MW for gland sealing and at main start up periods.</p>	<p>The operation of a gas fired power station with fuel switching capability. For the generation of electricity for export.</p> <p>From receipt, handling and on-site storage of raw materials and waste to despatch of products and waste but excluding operation of the odourisation plant.</p>
<b>Directly Associated Activity</b>			
A2	Directly associated activity	Surface water drainage	Handling and storage of site drainage until discharge to the site surface water system
A3	Directly associated activity	Gas Heaters	The operation of gas heating plant from receipt of raw materials to handling and dispatch of product for use.

<b>Table S1.1 activities</b>			
<b>Activity reference</b>	<b>Activity listed in Schedule 1 of the EP Regulations</b>	<b>Description of specified activity</b>	<b>Limits of specified activity</b>
A4	Directly associated activity	Water treatment	From receipt of raw materials to dispatch of treated effluent, process cooling waters and dirty water system to final discharge.
A5	Directly associated activity	Oil storage	From receipt of raw materials to handling, on-site storage and dispatch for use.

<b>Table S1.2 Operating techniques</b>		
<b>Description</b>	<b>Parts</b>	<b>Date Received</b>
Application	The response to section 2.1, 2.2 and 2.3 excluding 2.3.4 and 2.3.5 in the Application.	03/04/06
Receipt of additional information to the application	Responses to question 2 detailing air vent locations, pipe-work protection, specific site surface conditions, distillates transfer area improvements and BAT justification for distillate firing.	22/08/06
Receipt of additional information to the application	BAT justification for firing with distillate oil.	16/10/06, 26/10/07
Receipt of additional information to the application	Demonstrate understanding of why the predicted impacts are so high and identify the most significant influencing factors predicted impacts. The re-evaluation of emission source term data. Availability and feasibility of sourcing and using 0.1% S in fuel oil now Determine the predicted impacts using up to 0.2% S in fuel oil for less hours operation. The scenario assessed where the 99 <sup>th</sup> ile 15 min SO <sub>2</sub> mean is unacceptably high, establishing the percentile figure at which the 15 mean SO <sub>2</sub> impact is predicted to contribute to < 70% of the AQO would enable the risk of AQO exceedences occurring to be considered in the permitting decision making process.	31/01/07
Response to improvement condition 3	Method for determining particulate matter and sulphur dioxide from emission points A1, A2 and A3.	September 2007
Response to improvement condition 6	Response to IC 6 detailing review of emissions from release point W1.	24/02/09
Revised drawing Fig 2.22-1A emission points drawing (amendment v1)	Revised drawing to update emission points from site to include release point W4	30/10/15



<b>Table S1.2 Operating techniques</b>		
<b>Description</b>	<b>Parts</b>	<b>Date Received</b>
Response to regulation 60(1) Notice – request for information dated 31/10/14.	Compliance routes and operating techniques identified in response to questions 2 (selected compliance route), 4 (configuration of LCP), 10 (derogation to not undertake monitoring when on standby fuels), 11 (monitoring requirements).  Excluding compliance route ELV for LCP202, LCP203 and LCP204 and related operating techniques.	Received 23/03/15
Receipt of additional information to the regulation 60(1) Notice. requested by email dated 18/11/2015.	Operating techniques identified in response to questions 6 (minimum start up load and minimum shut down load)  Excluding compliance route ELV for LCP202, LCP203 and LCP204 and related operating techniques.	Received 27/11/15
Receipt of additional information to the regulation 60(1) Notice.	Confirmation of the compliance routes chosen for LCP202, LCP203 and LCP204.	Received 21/12/15 (letter dated 18/12/15)

<b>Table S1.3 Improvement programme requirements</b>		
<b>Reference</b>	<b>Requirement</b>	<b>Date</b>
IC 1	The operator shall continue to monitor emissions discharged from W2, W3 and W5 for the parameters given in the response to IC 8 on a quarterly basis for four further occasions.  A written review of the monitoring analysis results shall be provided. Where substances do not comply with benchmark limits a written plan shall be submitted to the Agency detailing proposals for ongoing monitoring and the procedures and methods to be used in line with section 2.2.6 of 'IPPC Sector Guidance Note Combustion Activities' to ensure benchmark limits can be achieved.  The plan shall be implemented by the operator from the date of approval by the Agency	Complete
IC 2	The operator shall review potential sources and emissions of suspended solids from emission point W1. A report summarizing the review shall be submitted for Agency approval. The report shall include all potential additional sources of suspended solids from the site process and drainage areas, any existing or proposed measures including a timetable for implementation of any new measures required to control suspended solids and any proposed emission limits.	Complete
IC 3	The operator shall review cooling water discharge temperature at the final point of discharge to the River Trent. A report summarizing the review and including a proposed temperature limit will be submitted for agreement. The report shall include justification that the proposed temperature limit represents BAT for the station and does not risk environmental harm.	Under review by the Environment Agency
IC 4	The Operator shall undertake a review of the existing screening measures at the intakes and outfalls which provide and discharge water to and from the Installation. The review shall be undertaken with reference to the Eels (England and Wales) Regulations 2009 (SI 2009/3344) and the Environment Agency „Safe Passage of Eel“ Regulatory Position Statement version 1 dated July 2012.  The Operator shall submit details of the arrangement suitable to meet	Complete

<b>Table S1.3 Improvement programme requirements</b>		
<b>Reference</b>	<b>Requirement</b>	<b>Date</b>
	<p>the requirements for the safe passage of eels [of the Eels (England and Wales) Regulations 2009 (SI 2009/3344)] by either:-</p> <ul style="list-style-type: none"> <li>• Providing a written proposal for the installation of an eel screen.</li> <li>• Providing a written proposal to the modification of existing screening arrangements.</li> <li>• Providing a written response with an explanation and description of how the existing screening arrangements can be regarded to meet the requirements for the safe passage of eels [of SI 2009/3344] either without change or with mitigation measures.</li> <li>• Providing a written response setting out a case for an exemption</li> </ul> <p>In all cases, the proposal shall be submitted in writing for the approval of the Environment Agency. Where appropriate, each proposal shall contain an assessment of alternative options considered including impacts on other fish species and an explanation of why the proposed option has been chosen.</p> <p>Where installation of eel screen; modification of existing arrangements; or mitigation measures are proposed, the submission shall contain relevant timescales for installation in accordance with the Safe Passage of Eel Regulatory Position Statement version 1 dated July 2012.</p> <p>The proposals shall be implemented in accordance with the Environment Agency's written approval.</p>	
IC 5	<p>The Operator has undertaken a review of the existing screening arrangements with reference to the Eels (England and Wales) Regulations 2009 (SI 2009/3344) and the Environment Agency "Safe Passage for Eel" Regulatory Position Statement version 1 dated July 2012 (and as amended February 2013) in response to Improvement Programme reference IP4.</p> <p>The Environment Agency has determined that the site does not comply with the requirements for safe passage of eel and the Operator is now required to complete a cost benefits appraisal of best available technique with reference to the Environment Agency "Safe Passage for Eel: Guidance on Exemptions" as a screening tool.</p> <p>a) If the Cost Benefit Assessment shows that the Benefits are greater than the costs by a factor of 1.5 or more, then the Operator shall submit to the Environment Agency for review a report setting out the costs and the technical and economic feasibility to introduce the improvements to achieve best available technique.</p> <p>b) If the Cost Benefit Assessment shows that the Benefits are not greater than the costs by a factor of 1.5 or more, then the Operator shall, with reference to the Environment Agency "Safe Passage for Eel: Guidance on exemptions, assess which alternative measure, or combination of alternative measures, could be implemented under a case of a conditioned Exemption. The Operator shall submit a report to the Environment Agency setting out the costs and the technical and economic feasibility of implementing their proposed alternative measure or measures.</p> <p>In all cases, the submission shall contain relevant timescales in accordance with the Safe Passage for Eel Regulatory Position Statement version 1 dated July 2012 (as amended 2013).</p> <p>The proposals shall be implemented following written approval of the Environment Agency.</p> <p>Whilst undertaking this Improvement Condition, the Operator shall be operating under exemption from the requirements to place eel screen</p>	Under review by the Environment Agency

<b>Table S1.3 Improvement programme requirements</b>		
<b>Reference</b>	<b>Requirement</b>	<b>Date</b>
	diversion structures pursuant to Regulation 17(5)(a) of the Eels (England and Wales) Regulations 2009. The exemption will remain in place until the Environment Agency has provided written approval that the Improvement Condition has been deemed complete.	
IC 6	For LCPD LCP413, LCP414 and LCP415 (now LCP202, LCP203 and LCP204 under IED). Annual emissions of dust, sulphur dioxide and oxides of nitrogen including energy usage for the year 01/01/2015 to 31/12/2015 shall be submitted to the Environment Agency using form AAE1 via the NERP Registry. If the LCPD LCP was a NERP plant the final quarter submissions shall be provided on the RTA 1 form to the NERP Registry.	28/01/16
IC 7	<p>The operator shall provide a report in writing to the Environment Agency for acceptance which provides the net rated thermal input for LCP202, LCP203 and LCP204. The net rated thermal input is the 'as built' value unless the plant has been modified significantly resulting in an improvement of the plant efficiency or output that increases the rated thermal input (which typically requires a performance test to demonstrate that guaranteed improvements have been realised).</p> <p>Evidence to support this figure, in order of preference, shall be in the form of:-</p> <ul style="list-style-type: none"> <li>a) Performance test results* during contractual guarantee testing or at commissioning (quoting the specified standards or test codes),</li> <li>b) Performance test results after a significant modification (quoting the specified standards or test codes),</li> <li>c) Manufacturer's contractual guarantee value,</li> <li>d) Published reference data, e.g., Gas Turbine World Performance Specifications (published annually);</li> <li>e) Design data, e.g., nameplate rating of a boiler or design documentation for a burner system;</li> <li>f) Operational efficiency data as verified and used for heat accountancy purposes,</li> <li>g) Data provided as part of Due Diligence during acquisition,</li> </ul> <p>*Performance test results shall be used if these are available.</p>	31/12/16
IC 8	<p>The Operator shall submit a report in writing to the Environment Agency for acceptance. The report shall define and provide a written justification of the "minimum start up load" and "minimum shut-down load", for each unit within the LCP as required by the Implementing Decision 2012/249/EU in terms of:</p> <p>The output load (i.e. electricity, heat or power generated) (MW); and</p> <p>This output load as a percentage of the rated thermal output of the combustion plant (%).</p> <p>And / Or</p> <p>At least three criteria (operational parameters and / or discrete processes as detailed in the Annex) or equivalent operational parameters that suit the technical characteristics of the plant, which can be met at the end of start-up or start of shut-down as detailed in Article (9) 2012/249/EU.</p>	31/03/16

<b>Table S1.4 Start-up and Shut-down thresholds (subject to the outcome from IC 8)</b>		
<b>Emission Point and Unit Reference</b>	<b>“Minimum start up load” When two of the criteria listed below for the LCP or unit have been met.</b>	<b>“Minimum shut-down load” When two of the criteria listed below for the LCP or unit have been met.</b>
A1(a), A1(b), A2(a) and A2(b) LCP202 and LCP203 In open cycle and combined cycle modes and for gas and distillate oil firing	Flame on Emissions Compliance Mode >166MW gas turbine output	Flame off Emissions Compliance Mode <90 MW gas turbine output; 38%
A3 LCP 204	Flame on Combustion bypass valve <90% >17MW	Flame off Combustion bypass valve>90% <17MW

## Schedule 2 – Waste types, raw materials and fuels

Table S2.1 Raw materials and fuels	
Raw materials and fuel description	Specification
Natural Gas	-
Gas oil	Not exceeding 0.1% w/w sulphur content

## Schedule 3 – Emissions and monitoring

Table S3.1 Point source emissions to air						
Emission point ref. & location	Parameter	Source	Limit (including unit)-these limits do not apply during start up or shut down.	Reference period	Monitoring frequency	Monitoring standard or method
A1(a) & A2(a) [Point A1(a) & point A2(a) on site plan in Schedule 7]	Oxides of Nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	LCP202 & LCP203 Gas turbine fired on natural gas	50 mg/m <sup>3</sup>	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A1(a) & A2(a) [Point A1(a) & point A2(a) on site plan in Schedule 7]	Oxides of Nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	LCP202 & LCP203 Gas turbine fired on natural gas	55 mg/m <sup>3</sup>	Daily mean of validated hourly averages	Continuous	BS EN 14181
A1(a) & A2(a) [Point A1(a) & point A2(a) on site plan in Schedule 7]	Oxides of Nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	LCP202 & LCP203 Gas turbine fired on natural gas	75 mg/m <sup>3</sup>	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A1(a) & A2(a) [Point A1(a) & point A2(a) on site plan in Schedule 7]	Carbon Monoxide	LCP202 & LCP203 Gas turbine fired on natural gas	100 mg/m <sup>3</sup>	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A1(a) & A2(a) [Point A1(a) & point A2(a) on site plan in Schedule 7]	Carbon Monoxide	LCP202 & LCP203 Gas turbine fired on natural gas	100 mg/m <sup>3</sup>	Daily mean of validated hourly averages	Continuous	BS EN 14181

<b>Table S3.1 Point source emissions to air</b>						
<b>Emission point ref. &amp; location</b>	<b>Parameter</b>	<b>Source</b>	<b>Limit (including unit)-these limits do not apply during start up or shut down.</b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
A1(a) & A2(a) [Point A1(a) & point A2(a) on site plan in Schedule 7]	Carbon Monoxide	LCP202 & LCP203 Gas turbine fired on natural gas	100 mg/m <sup>3</sup>	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A1(a) & A2(a) [Point A1(a) & point A2(a) on site plan in Schedule 7]	Sulphur dioxide	LCP202 & LCP203 Gas turbine fired on natural gas	-	-	At least every 6 months	Concentration by calculation, as agreed in writing with the Environment Agency
A1(a) & A2(a) [Point A1(a) & point A2(a) on site plan in schedule 7]	Oxygen	LCP202 & LCP203 Gas turbine fired on natural gas	-	-	Continuous As appropriate to reference	BS EN 14181
A1(a) & A2(a) [Point A1(a) & point A2(a) on site plan in schedule 7]	Water Vapour	LCP202 & LCP203 Gas turbine fired on natural gas	-	-	Continuous As appropriate to reference	BS EN 14181
A1(a) & A2(a) [Point A1(a) & point A2(a) on site plan in schedule 7]	Stack gas temperature	LCP202 & LCP203 Gas turbine fired on natural gas	-	-	Continuous As appropriate to reference	Traceable to national standards

<b>Table S3.1 Point source emissions to air</b>						
<b>Emission point ref. &amp; location</b>	<b>Parameter</b>	<b>Source</b>	<b>Limit (including unit)-these limits do not apply during start up or shut down.</b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
A1(a) & A2(a) [Point A1(a) & point A2(a) on site plan in schedule 7]	Stack gas pressure	LCP202 & LCP203 Gas turbine fired on natural gas	-	-	Continuous As appropriate to reference	Traceable to national standards
A1(a) & A2(a) [Point A1(a) & point A2(a) on site plan in schedule 7]	Stack Gas Volume Flow	LCP202 & LCP203 Gas turbine fired on natural gas	-	-	Continuous	BS EN 16911 & TGN M2
A1(a) & A2(a) [Point A1(a) & point A2(a) on site plan in Schedule 7]	Oxides of Nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	LCP202 & LCP203 Gas turbine fired on gas oil	90 mg/m <sup>3</sup>	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A1(a) & A2(a) [Point A1(a) & point A2(a) on site plan in Schedule 7]	Oxides of Nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	LCP202 & LCP203 Gas turbine fired on gas oil	99 mg/m <sup>3</sup>	Daily mean of validated hourly averages	Continuous	BS EN 14181
A1(a) & A2(a) [Point A1(a) & point A2(a) on site plan in Schedule 7]	Oxides of Nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	LCP202 & LCP203 Gas turbine fired on gas oil	125 mg/m <sup>3</sup>	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181



<b>Table S3.1 Point source emissions to air</b>						
<b>Emission point ref. &amp; location</b>	<b>Parameter</b>	<b>Source</b>	<b>Limit (including unit)-these limits do not apply during start up or shut down.</b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
A1(a) & A2(a) [Point A1(a) & point A2(a) on site plan in Schedule 7]	Carbon Monoxide	LCP202 & LCP203 Gas turbine fired on gas oil	100 mg/m <sup>3</sup>	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A1(a) & A2(a) [Point A1(a) & point A2(a) on site plan in Schedule 7]	Carbon Monoxide	LCP202 & LCP203 Gas turbine fired on gas oil	100 mg/m <sup>3</sup>	Daily mean of validated hourly averages	Continuous	BS EN 14181
A1(a) & A2(a) [Point A1(a) & point A2(a) on site plan in Schedule 7]	Carbon Monoxide	LCP202 & LCP203 Gas turbine fired on gas oil	100 mg/m <sup>3</sup>	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A1(a) & A2(a) [Point A1(a) & point A2(a) on site plan in Schedule 7]	Sulphur dioxide	LCP202 & LCP203 Gas turbine fired on gas oil	-	-	At least every 6 months	Concentration by calculation, as agreed in writing with the Environment Agency
A1(a) & A2(a) [Point A1(a) & point A2(a) on site plan in Schedule 7]	Dust	LCP202 & LCP203 Gas turbine fired on gas oil	-	-	At least every 6 months	Concentration by calculation, as agreed in writing with the Environment Agency

<b>Table S3.1 Point source emissions to air</b>						
<b>Emission point ref. &amp; location</b>	<b>Parameter</b>	<b>Source</b>	<b>Limit (including unit)-these limits do not apply during start up or shut down.</b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
A1(a) & A2(a) [Point A1(a) & point A2(a) on site plan in Schedule 7]	Oxygen	LCP202 & LCP203 Gas turbine fired on gas oil	-	-	Continuous As appropriate to reference	BS EN 14181
A1(a) & A2(a) [Point A1(a) & point A2(a) on site plan in Schedule 7]	Water Vapour	LCP202 & LCP203 Gas turbine fired on gas oil	-	-	Continuous As appropriate to reference	BS EN 14181
A1(a) & A2(a) [Point A1(a) & point A2(a) on site plan in schedule 7]	Stack gas temperature	LCP202 & LCP203 Gas turbine fired on gas oil	-	-	Continuous As appropriate to reference	Traceable to national standards
A1(a) & A2(a) [Point A1(a) & point A2(a) on site plan in schedule 7]	Stack gas pressure	LCP202 & LCP203 Gas turbine fired on gas oil	-	-	Continuous As appropriate to reference	Traceable to national standards
A1(a) & A2(a) [Point A1(a) & point A2(a) on site plan in schedule 7]	Stack gas volume flow	LCP202 & LCP203 Gas turbine fired on gas oil	-	-	Continuous	BS EN 16911 & TGN M2

<b>Table S3.1 Point source emissions to air</b>						
<b>Emission point ref. &amp; location</b>	<b>Parameter</b>	<b>Source</b>	<b>Limit (including unit)-these limits do not apply during start up or shut down.</b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
A1(b) & A2(b) [Point A1(b) and point A2(b) on site plan in schedule 7]	Oxides of Nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	LCP202 & LCP203 Gas turbine fired on natural gas when in open cycle mode	-	-	Concentration by calculation, every 4380 operational hours or 2 years, whichever is sooner.	Agreed in writing with the Environment Agency
A1(b) & A2(b) [Point A1(b) and point A2(b) on site plan in schedule 7]	Carbon Monoxide	LCP202 & LCP203 Gas turbine fired on natural gas when in open cycle mode	-	-	Concentration by calculation, every 4380 operational hours or 2 years, whichever is sooner.	Agreed in writing with the Environment Agency
A1(b) & A2(b) [Point A1(b) and point A2(b) on site plan in schedule 7]	Sulphur dioxide	LCP202 & LCP203 Gas turbine fired on natural gas when in open cycle mode	-	-	Concentration by calculation, every 4380 operational hours or 2 years, whichever is sooner.	Agreed in writing with the Environment Agency
A1(b) & A2(b) [Point A1(b) and point A2(b) on site plan in schedule 7]	Oxides of Nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	LCP202 & LCP203 Gas turbine fired on gas oil when in open cycle mode	-	-	Concentration by calculation, every 4380 operational hours or 2 years, whichever is sooner.	Agreed in writing with the Environment Agency
A1(b) & A2(b) [Point A1(b) and point A2(b) on site plan in schedule 7]	Carbon Monoxide	LCP202 & LCP203 Gas turbine fired on gas oil when in open cycle mode	-	-	Concentration by calculation, every 4380 operational hours or 2 years, whichever is sooner.	Agreed in writing with the Environment Agency

<b>Table S3.1 Point source emissions to air</b>						
<b>Emission point ref. &amp; location</b>	<b>Parameter</b>	<b>Source</b>	<b>Limit (including unit)-these limits do not apply during start up or shut down.</b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
A1(b) & A2(b) [Point A1(b) and point A2(b) on site plan in schedule 7]	Sulphur dioxide	LCP202 & LCP203 Gas turbine fired on gas oil when in open cycle mode	-	-	Concentration by calculation, every 4380 operational hours or 2 years, whichever is sooner.	Agreed in writing with the Environment Agency
A1(b) & A2(b) [Point A1(b) and point A2(b) on site plan in schedule 7]	Dust	LCP202 & LCP203 Gas turbine fired on gas oil when in open cycle mode	-	-	Concentration by calculation, every 4380 operational hours or 2 years, whichever is sooner.	Agreed in writing with the Environment Agency
A3 [Point A3 on site plan in schedule 7]	Oxides of Nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	LCP204 Gas turbine fired on natural gas	55 mg/m <sup>3</sup>	-	At least every 6 months	BS EN 14792
A3 [Point A3 on site plan in schedule 7]	Carbon Monoxide	LCP204 Gas turbine fired on natural gas	110 mg/m <sup>3</sup>	-	At least every 6 months	BS EN 15058
A3 [Point A3 on site plan in schedule 7]	Sulphur dioxide	LCP204 Gas turbine fired on natural gas	-	-	At least every 6 months	Concentration by calculation, as agreed in writing with the Environment Agency
A3 [Point A3 on site plan in schedule 7]	Oxygen	LCP204 Gas turbine fired on natural gas	-	-	Periodic As appropriate to reference	BS EN 14789
A3 [Point A3 on site plan in schedule 7]	Water Vapour	LCP204 Gas turbine fired on natural gas	-	-	Periodic As appropriate to reference	BS EN 14790

<b>Table S3.1 Point source emissions to air</b>						
<b>Emission point ref. &amp; location</b>	<b>Parameter</b>	<b>Source</b>	<b>Limit (including unit)-these limits do not apply during start up or shut down.</b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
A3 [Point A3 on site plan in schedule 7]	Stack gas volume flow	LCP204 Gas turbine fired on natural gas	-	-	-	BS EN 16911 & TGN M2
A3 [Point A3 on site plan in schedule 7]	Oxides of Nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	LCP204 Gas turbine fired on gas oil	99 mg/m <sup>3</sup>	-	At least every 6 months	BS EN 14792
A3 [Point A3 on site plan in schedule 7]	Carbon Monoxide	LCP204 Gas turbine fired on gas oil	110 mg/m <sup>3</sup>	-	At least every 6 months	BS EN 15058
A3 [Point A3 on site plan in schedule 7]	Sulphur dioxide	LCP204 Gas turbine fired on gas oil	-	-	At least every 6 months	Concentration by calculation, as agreed in writing with the Environment Agency
A3 [Point A3 on site plan in schedule 7]	Dust	LCP204 Gas turbine fired on gas oil	-	-	At least every 6 months	Concentration by calculation, as agreed in writing with the Environment Agency
A3 [Point A3 on site plan in schedule 7]	Oxygen	LCP204 Gas turbine fired on gas oil	-	-	Periodic As appropriate to reference	BS EN 14789
A3 [Point A3 on site plan in schedule 7]	Water Vapour	LCP204 Gas turbine fired on gas oil	-	-	Periodic As appropriate to reference	BS EN 14790

Table S3.1 Point source emissions to air						
Emission point ref. & location	Parameter	Source	Limit (including unit)-these limits do not apply during start up or shut down.	Reference period	Monitoring frequency	Monitoring standard or method
A3 [Point A3 on site plan in schedule 7]	Stack gas volume flow	LCP204 Gas turbine fired on gas oil	-	-	-	BS EN 16911 & TGN M2
A1(a), A1(b), A2(a), A2(b) & A3 [Point A1(a), point A1(b), point A2(a), point A2(b) and point A3 on site plan in schedule 7]	As required by the Method Implementation Document for BS EN 15259	LCP202, LCP203 & LCP204 Gas turbine fired on natural gas or gas oil	-	-	Pre-operation and when there is a significant operational change	BS EN 15259
A4 & A5 [Point A4 & point A5 on site plan in schedule 7]	-	Gas heaters 1 & 2	-	-	-	-
A6 Auxiliary Boiler [Point A6 on site plan in schedule 7]	Oxides of Nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	AB01 Boiler plant fired on natural gas	-	-	-	-
A6 Auxiliary Boiler [Point A6 on site plan in schedule 7]	Oxides of Nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	AB01 Boiler plant fired on distillate oil	-	-	-	-
A7 – A10	-	Emergency diesel engines exhausts 1 - 4	-	-	-	-
A11	-	Control and Admin Building gas fired domestic boiler exhaust	-	-	-	-

<b>Table S3.1 Point source emissions to air</b>						
<b>Emission point ref. &amp; location</b>	<b>Parameter</b>	<b>Source</b>	<b>Limit (including unit)-these limits do not apply during start up or shut down.</b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
A12	-	Water treatment plant gas fired domestic boiler exhaust	-	-	-	-
A13 - A14	-	Diesel fire foam pumps exhausts	-	-	-	-
A15 – A16	-	Diesel fire foam pumps exhausts	-	-	-	-
A17	-	Workshop and Stores gas fired air heater	-	-	-	-
A18	-	Water treatment plant gas fired air heater	-	-	-	-
A19	-	Diesel fire water pump building gas fired air heater	-	-	-	-
A20 – A22	-	Fuel oil (diesel) tanks No. 1 – 3 atmospheric vents	-	-	-	-
A23	-	LCP 204 fuel oil (diesel) tank atmospheric vent	-	-	-	-
A24	-	Acid bulk storage tank atmospheric vent	-	-	-	-
A25	-	Bulk caustic storage tank atmospheric vent	-	-	-	-
A26 – A28	-	LCP 202 & LCP 203 & ST generator seal oil vacuum tanks vapour exhaust	-	-	-	-
A29 –A31	-	LCP 202 & LCP 203 & ST Lube oil tank mist eliminator exhausts	-	-	-	-

<b>Table S3.1 Point source emissions to air</b>						
<b>Emission point ref. &amp; location</b>	<b>Parameter</b>	<b>Source</b>	<b>Limit (including unit)-these limits do not apply during start up or shut down.</b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
A32	-	LCP204 Lube oil tank mist eliminator exhaust	-	-	-	-
A33 – A34	-	LCP 202 & LCP 203 False start (waste diesel) drains sump atmospheric vent	-	-	-	-
A35 - A36	-	LCP 202 & LCP 203 HP Gas supply pipe work vent to atmosphere (natural gas)	-	-	-	-
A37	-	AB01 LP Gas supply cork vent to atmosphere (natural gas)	-	-	-	-
A38 – A40	-	LCP 202, LCP 203 & LCP 204 Inter stage vents to atmosphere (natural gas)	-	-	-	-
A41 – A43	-	LCP 202 & LCP 203 & ST Generator hydrogen supply gas control system vent to atmosphere	-	-	-	-
A44 – A 46	-	LCP 202 & 203 & ST Generator seal oil gas (hydrogen) exhauster fan vents to atmosphere	-	-	-	-
A47 – A49	-	LCP 202 & LCP 203 & ST Battery Room exhauster vents to atmosphere	-	-	-	-



<b>Table S3.1 Point source emissions to air</b>						
<b>Emission point ref. &amp; location</b>	<b>Parameter</b>	<b>Source</b>	<b>Limit (including unit)-these limits do not apply during start up or shut down.</b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
A50	-	Station Battery Room exhaust vent to atmosphere	-	-	-	-
A51	-	Station natural gas HP supply coalesce condensate drains tank atmospheric vent	-	-	-	-

<b>Table S3.2 Point Source emissions to water (other than sewer) – emission limits and monitoring requirements</b>						
<b>Emission point ref. &amp; location</b>	<b>Parameter</b>	<b>Source</b>	<b>Limit (incl. unit)</b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
W1 on site plan Fig.2.22-1B (emission to River Trent at grid reference (SE 83652 12223) [Point A1, point A2 and point A3 on site plan in schedule 7]	Daily maximum flow	<ul style="list-style-type: none"> <li>- Cooling water</li> <li>- Water from water treatment plant (including regeneration effluent from W8 and filter water backwash effluent from W7)</li> <li>- surface drainage from lube oil unloading area via tilt plate separator and pump pit</li> <li>- roadways at South East area, via tilt plate separator and pump pit</li> <li>- chemical tanker offload area via interceptor sump</li> <li>- bulk chemical storage bunds via effluent neutralisation sumps boiler</li> <li>- blowdown effluent from W9</li> </ul>	15 m <sup>3</sup> /sec	Average of 24-hour period beginning 00:01hrs	Daily	MCERTS

Table S3.2 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 Fig.2.22-1B (emission to River Trent at grid reference (SE 83652 12223))	Oil or Grease	Locations as above	No visible emission	24-hour period beginning 00:01hrs	Daily	-	
	Total Daily Volume		985,670 m <sup>3</sup> (per day) not including surface water treatment	24-hour period beginning 00:01hrs	Continuous	MCERTS	
	Discharge Temperature		To be agreed under IC3	Average over 24-hour period beginning 00:01hrs and maximum recorded	Continuous	Calibrated resistance thermometer device (RTD) UKAS approved	
	Cooling water abstraction and discharge temperature differential		-	Average over 24-hour period beginning 00:01hrs and maximum recorded	Continuous	Calibrated resistance thermometer device (RTD) UKAS approved	
	Mercury		-	-	-	-	[note 4]
	Cadmium		-	-	-	-	[note 5]
W2, W3, W5 (emissions to Red House Drain or Kelsey Drain)	Oil and grease	Drainage of surface waters from north-east power island, main transformer, amenity blocks, drainage of surface waters from fuel tank farm and Ealand Road area	No visible emission	Spot	Daily	-	
W4	-	Drainage of surface water from drains in the South East corner of site by the rear gate. (penstock valve fitted).	-	-	-	-	

<b>Table S3.2 Point Source emissions to water (other than sewer) – emission limits and monitoring requirements</b>						
<b>Emission point ref. &amp; location</b>	<b>Parameter</b>	<b>Source</b>	<b>Limit (incl. unit)</b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
W6	Oil and grease	Drainage water from cooling water pump house and oil handling area	No visible emission	Spot	Daily	-
W7 <sup>[note 6]</sup>	Total daily volume	Pressure filter and activated carbon backwash effluent	250 m <sup>3</sup>	24 hour period beginning 00:01hrs	Continuous	MCERTS
	Daily maximum flow		10 l/sec		Daily	
W8 <sup>[note 6]</sup>	Total daily volume	Ion exchange effluent	620 m <sup>3</sup>	24 hour period beginning 00:01hrs	Continuous	MCERTS
	pH range		5 - 10	24 hour period beginning 00:01hrs	Continuous	BS6068-2.50
W9 <sup>[note 6]</sup>	Total daily volume	Boiler blowdown effluent	250 m <sup>3</sup> 800 m <sup>3</sup> (Note 7)	24 hour period beginning 00:01hrs	Continuous	MCERTS

Note 4. The discharge of mercury from the processes shall be controlled by limiting the concentration of mercury or its compounds in the raw materials as: -

46% sodium hydroxide < 500 µg/kg

98% sulphuric acid < 1000 µg/kg

water treatment chemicals < 400 µg/kg

Note 5. The discharge of cadmium from the processes shall be controlled by limiting the concentration of cadmium or its compounds in the raw materials as: -

46% sodium hydroxide < 500 µg/kg

98% sulphuric acid < 1000 µg/kg

water treatment chemicals < 400 µg/kg

Note 6. Internal operating target to minimise releases to water. pH applies to discharges longer than 10 minutes in duration. Combined discharge to the River Trent via W1

Note 7. Applies to days when the system is replenished following boiler or deaerators' shutdowns, or condenser tube leak.

<b>Table S3.3 Annual limits (excluding start up and shut down except where otherwise stated)</b>				
<b>Substance</b>	<b>Medium</b>	<b>Limit (including unit)</b>		<b>Emission Points</b>
Dust, Sulphur dioxide and Oxides of nitrogen	Air	Assessment year	LCP TNP Limit	LCP202, LCP203 and LCP204
		01/01/16 and subsequent years until 31/12/19	Emission allowance figure shown in the TNP Register as at 30 April the following year	
		01/01/20-30/06/20		

<b>Table S3.4 Process monitoring requirements</b>				
<b>Emission point reference or source or description of point of measurement</b>	<b>Parameter</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>	<b>Other specifications</b>
Cooling waters intake and discharge temperature differential	Temperature °C	Daily average	Calibrated resistance thermometer device (RTD) UKAS approved	

## Schedule 4 – Reporting

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

<b>Table S4.1 Reporting of monitoring data</b>			
<b>Parameter</b>	<b>Emission or monitoring point/reference</b>	<b>Reporting period</b>	<b>Period begins</b>
Oxides of nitrogen	A1(a), A2(a),	Every 3 months	1 January, 1 April, 1 July, 1 October
	A3	Every 6 months	1 January, 1 July
	A1(b), A2(b)	Every 2 years	1 January
Carbon Monoxide	A1(a), A2(a)	Every 3 months	1 January, 1 April, 1 July, 1 October
	A3	Every 6 months	1 January, 1 July
	A1(b), A2(b)	Every 2 years	1 January
Sulphur dioxide	A1(a), A2(a), A3	Every 6 months	1 January, 1 July
	A1(b), A2(b)	Every 2 years	1 January
Dust	A1(a), A2 (a)	Every 3 months	1 January, 1 April, 1 July, 1 October
	A3	Every 6 months	1 January, 1 July
	A1(b), A2(b)	Every 2 years	1 January
Operating hours	A1(a), A2(a), A3	Every 3 months	1 January, 1 April, 1 July, 1 October
	A1(b), A2(b)	Every 6 months	1 January, 1 July
Surface water monitoring Parameters as required by condition 3.5.1	W1, W2, W3, W5, W6, W7, W8 and W9	Every 3 months	1 January, 1 April, 1 July, 1 October

<b>Table S4.2: Resource Efficiency Metrics</b>	
<b>Parameter</b>	<b>Units</b>
Electricity Exported	GW Hr
Heat Exported	GW Hr
Mechanical Power Provided	GW Hr
Fossil Fuel Energy Consumption	GW Hr
Non-Fossil Fuel Energy Consumption	GW Hr
Annual Operating Hours	Hr
Water Abstracted from Fresh Water Source	m <sup>3</sup>
Water Abstracted from Borehole Source	m <sup>3</sup>
Water Abstracted from Estuarine Water Source	m <sup>3</sup>
Water Abstracted from Sea Water Source	m <sup>3</sup>
Water Abstracted from Mains Water Source	m <sup>3</sup>

<b>Parameter</b>	<b>Units</b>
Gross Total Water Used	m <sup>3</sup>
Net Water Used	m <sup>3</sup>
Hazardous Waste Transferred for Disposal at another installation	t
Hazardous Waste Transferred for Recovery at another installation	t
Non-Hazardous Waste Transferred for Disposal at another installation	t
Non-Hazardous Waste Transferred for Recovery at another installation	t
Waste recovered to Quality Protocol Specification and transferred off-site	t
Waste transferred directly off-site for use under an exemption / position statement	t

<b>Parameter</b>	<b>Frequency of assessment</b>	<b>Units</b>
Thermal Input Capacity for each LCP	Annually	MW
Annual Fuel Usage for each LCP	Annually	TJ
Total Emissions to Air of NO <sub>x</sub> for each LCP	Annually	t
Total Emissions to Air of SO <sub>2</sub> for each LCP	Annually	t
Total Emissions to Air of Dust for each LCP	Annually	t
Operating Hours for each LCP	Annually	hr

<b>Media/ parameter</b>	<b>Reporting format</b>	<b>Starting Point</b>	<b>Agency recipient</b>	<b>Date of form</b>
Air & Energy	Form IED AR1 – SO <sub>2</sub> , NO <sub>x</sub> and dust mass emission and energy	01/01/16	National	31/12/15
Air	Form IED RTA1 –TNP quarterly emissions summary log	01/01/16	National	31/12/15
LCP	Form IED HR1 – operating hours	01/01/16	National	31/12/15
Air	Form IED CON 2 – continuous monitoring	01/01/16	Area Office	31/12/15
CEMs	Form IED CEM – Invalidation Log	01/01/16	Area Office	31/12/15
Air	Form IED PM1 - discontinuous monitoring and load	01/01/16	Area Office	31/12/15
Resource Efficiency	Form REM1 – resource efficiency annual report	01/01/16	National	31/12/15
Water	Form water 1 or other form as agreed in writing by the Environment Agency	01/01/16	Area Office	12/01/10

# Schedule 5 – 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 EP Regulations.

## Part A

Permit Number	
Name of operator	
Location of Facility	
Time and date of the detection	

<b>(a) Notification requirements for any malfunction, breakdown or failure of equipment or techniques, accident, or emission of a substance not controlled by an emission limit which has caused, is causing or may cause significant pollution</b>	
<b>To be notified within 24 hours of detection</b>	
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>(b) Notification requirements for the breach of a limit</b>	
<b>To be notified within 24 hours of detection unless otherwise specified below</b>	
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	

Time periods for notification following detection of a breach of a limit	
Parameter	Notification period

<b>(c) Notification requirements for the detection of any significant adverse environmental effect</b>	
<b>To be notified within 24 hours of detection</b>	
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 facility in the preceding 24 months.	

<b>Name*</b>	
<b>Post</b>	
<b>Signature</b>	
<b>Date</b>	

\* authorised to sign on behalf of the operator



## Schedule 6 – Interpretation

“accident” means an accident that may result in pollution.

“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 5 to the EP Regulations.

“authorised officer” means any person authorised by the Environment 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.

“background concentration” means such concentration of that substance as is present in:

for emissions to surface water, the surface water quality up-gradient of the site; or

for emissions to sewer, the surface water quality up-gradient of the sewage treatment works discharge.

“base load” means: (i) as a mode of operation, operating for >4000hrs pa; and (ii) as a load, the maximum load under ISO conditions that can be sustained continuously, i.e. maximum continuous rating.

“Black Start” means the procedure to recover from a total or partial shutdown of the UK Transmission System which has caused an extensive loss of supplies. This entails isolated power stations being started individually and gradually being reconnected to other power stations and substations in order to form an interconnected system again.

“calendar monthly mean” means the value across a calendar month of all validated hourly means.

“CEN” means Comité Européen de Normalisation.

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

“disposal” means any of the operations provided for in Annex I to Directive 2008/98/EC of the European Parliament and of the Council on waste.

“DLN” means dry, low NO<sub>x</sub> burners.

“Energy efficiency” the annual net plant energy efficiency means the value calculated from the operational data collected over the year.

“EP Regulations” means The Environmental Permitting (England and Wales) Regulations SI 2010 No.675 and words and expressions used in this permit which are also used in the Regulations have the same meanings as in those Regulations.

“emissions of substances not controlled by emission limits” means emissions of substances to air, water or land from the activities, either from the emission points specified in schedule 3 or from other localised or diffuse sources, which are not controlled by an emission or background concentration 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.

“Industrial Emissions Directive” means DIRECTIVE 2010/75/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 24 November 2010 on industrial emissions.

“large combustion plant” or “LCP” is a combustion plant or group of combustion plants discharging waste gases through a common windshield or stack, where the total thermal input is 50 MW or more, based on net calorific value. The calculation of thermal input, excludes individual combustion plants with a rated thermal input below 15MW.

“Mid-merit” means combustion plant operating between 1,500 and 4,000 hrs/yr.

“MCERTS” means the Environment Agency’s Monitoring Certification Scheme.

“MCR” means maximum continuous rating.

“MSDL” means minimum shut-down load as defined in Implementing Decision 2012/249/EU.

“MSUL” means minimum start-up load as defined in Implementing Decision 2012/249/EU.

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

“ncv” means net calorific value.

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

“quarter” means a calendar year quarter commencing on 1 January, 1 April, 1 July or 1 October.

“recovery” means any of the operations provided for in Annex II to Directive 2008/98/EC of the European Parliament and of the Council on waste.

“SI” means site inspector.

“Standby fuel” means alternative liquid fuels that are used in emergency situations when the gas fuel which is normally used, is not available.

“TNP Register” means the register maintained by the Environment Agency in accordance with regulation 4 of the Large Combustion Plants (Transitional National Plan) Regulations 2015 SI2015 No.1973.

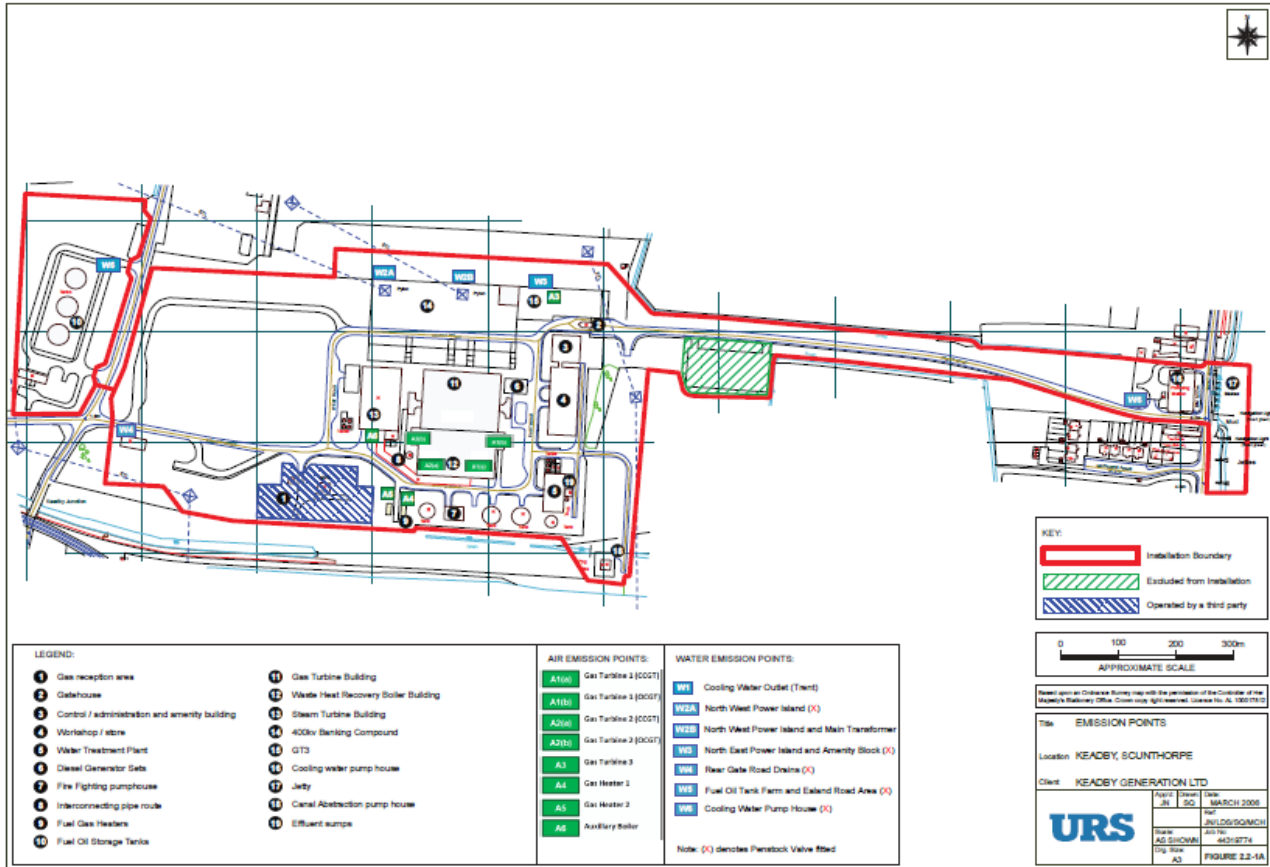
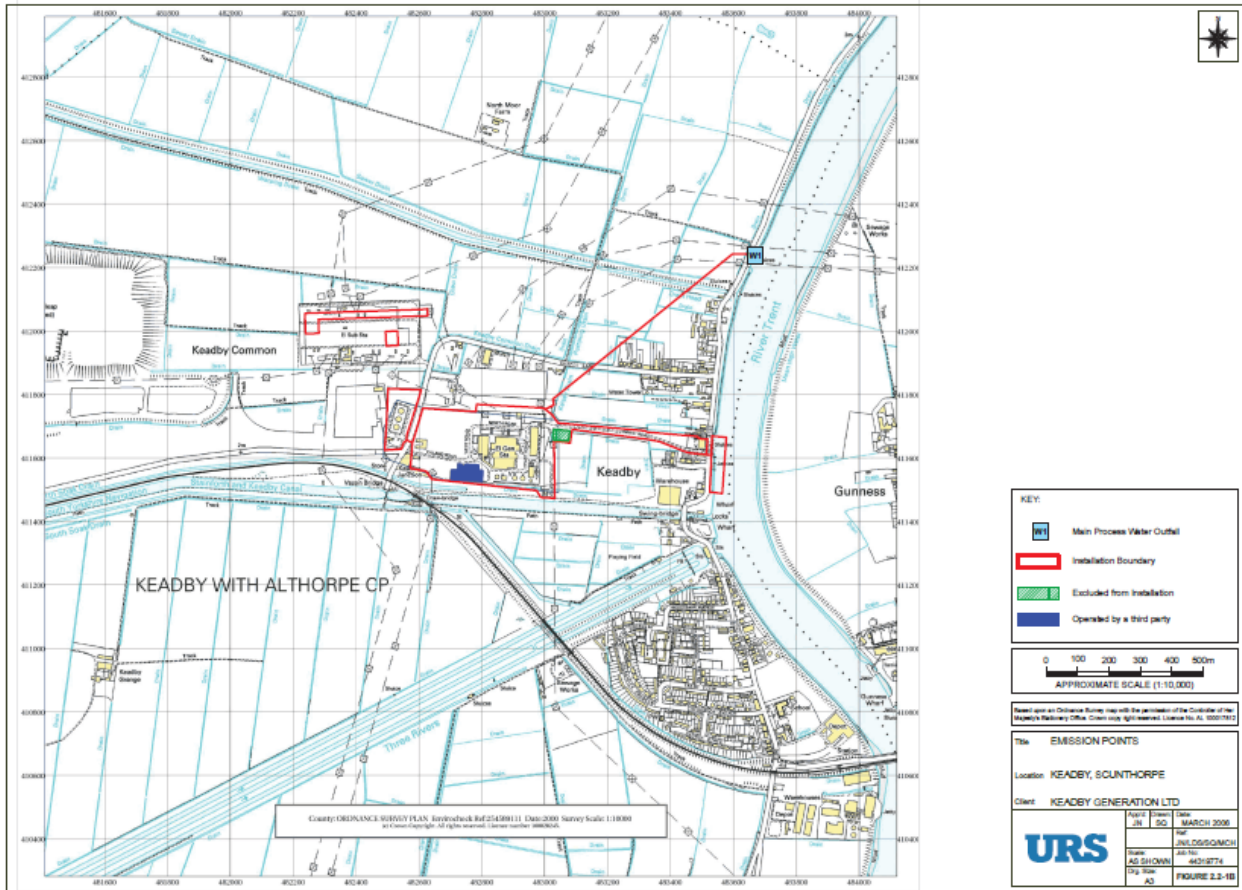
Where a minimum limit is set for any emission parameter, for example pH, reference to exceeding the limit shall mean that the parameter shall not be less than that limit.

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

- 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; and/or
- In relation to emissions from gas turbine combustion processes, the concentration in dry air at a temperature of 273K, at a pressure of 101.3kPa and with an oxygen content of 15% dry for liquid and gaseous fuels; and/or
- In relation to emissions from combustion processes comprising a gas turbine with a waste heat boiler, the concentration in dry air at a temperature of 273K, at a pressure of 101.3kPa and with an oxygen content of 15% dry, unless the waste heat boiler is operating alone, in which case, with an oxygen content of 3% dry for liquid and gaseous fuels

“year” means calendar year ending 31 December.

# Schedule 7 – Site plan



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END OF PERMIT

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EPR/YP3133LL