

# Notice of variation and consolidation with introductory note

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

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RWE Generation UK Plc

Didcot B Power Station  
Didcot  
Oxfordshire  
OX11 7YU

### **Variation application number**

EPR/YP3930LZ/V009

### **Permit number**

EPR/YP3930LZ

# Didcot B Power Station

## Permit number EPR/YP3930LZ

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

- LCP243 is changed to LCP276; and
- LCP427 is changed to LCP277.

In addition, the reference LCP397 has been allocated to four open-cycle gas turbine generators (OCGT's) used as emergency capacity at the installation. This unit was not previously allocated an LCP number.

The operator has chosen to operate these LCP's under the Transitional National Plan (LCP276 and 277) and then 500 hr (LCP397) compliance routes. This is a change from the previous operating regime which was to operate the LCP's under emission limits determined by the Large Combustion Plant Directive (2001/80/EC) and an assessment of the best available techniques (BAT).

Tests carried out to ISO standards indicated that the net thermal input of the LCP's is as follows:

- LCP276 – two gas turbines and associated steam turbine - 1377 MWth
- LCP277 - two gas turbines and associated steam turbine - 1293 MWth
- LCP397 – four open-cycle gas turbines - 392 MWth

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

Didcot B Power Station is a gas-fired power station operated by RWE Generation Uk Plc. The site covers an area of 16.8 ha and is centred at National Grid Reference SU 5070 9190.

It is located within a semi-rural agricultural area of south Oxfordshire, interspersed with gravel extraction pits and to the south of the River Thames. The decommissioned Didcot A Power Station lies to the east on an adjacent site. The nearest residential areas are the villages of Sutton Courtenay (1.5km Northwest), Appleford (2km Northeast), Harwell (2km Southwest), Milton (2km West), the town of Didcot (1km Southeast) and the new residential development of Great Western Park (1km South). Immediately to the west of the site is a light industrial estate.

The site is underlain by Alluvium and River Terrace Gravels classified as minor aquifers and further underlain by impermeable Gault Clay classified as a non-aquifer. There are no licensed groundwater abstractions used for drinking water within 3 km of the site.

The principal activity is listed under Section 1.1 A(1)(a): "Burning any fuel in an appliance with a rated thermal input of 50 megawatts or more". The activities comprise two combined cycle gas turbine (CCGT)

modules fired solely on Natural Gas and each operating in a 'two-plus-one' configuration with an associated steam turbine. They have a combined total thermal input of 2670MW and a total maximum production output of 1466 MW of electricity. LCP276 consists of two natural gas fired gas turbines (GT51 & GT52, 264 MW of electricity each) and a single steam turbine (230 MW of electricity). LCP277 consists of two natural gas fired gas turbines (GT61 & GT62, 239 MW of electricity each) and a single steam turbine (230 MW of electricity). The hot combustion gases from each gas turbine pass through separate Heat Recovery Steam Generators (HRSG), powering the steam turbines, before being released to the atmosphere through two, twin-flued, 85 metre high stacks. The CCGT's have an efficiency of 55.6% and 56.1% and therefore qualify for the IED derogation for higher ELV's

Expanded low-pressure steam from each steam turbine passes to a condenser where it condenses and returns to the process as HRSG feed water. Recirculating cooling water supplied to the condensers is itself cooled in one of two independent banks of low level forced draught hybrid cooling towers designed to minimise the creation of visible plumes.

Odorised natural gas is supplied to the site directly from an "Above Ground Installation" (AGI). As this activity is a directly associated activity it is included within the installation boundary and therefore this installation has two operators and two environmental permits. The operator of the AGI, National Grid Gas plc holds a separate environmental permit, reference number LP3835LK.

Boiler make up water is supplied to site by a town's water main and is further purified in an ion-exchange demineralisation plant. Hydrochloric acid and sodium hydroxide used for ion-exchange resin bed regeneration and other water treatment chemicals are stored in bunded bulk tanks on site. There is also a small storage facility for aqueous solutions of hydrazine and ammonia which are injected into the high pressure steam system for corrosion inhibition. There are bulk tanks on site for treated (2 tanks) and untreated (2 tanks) boiler water

Of the substances released to air from the two 85m stacks, the main component comprises oxides of nitrogen ( $\text{NO}_x$ ) (nitric oxide and nitrogen dioxide). Carbon monoxide (CO) is also released. Releases of dust and sulphur dioxide are considered to be insignificant due to the use only of natural gas as a fuel.

Moisture is also a product of the combustion of natural gas and is released as water vapour. Occasionally during periods of high atmospheric relative humidity the plume may condense and become visible.

$\text{NO}_x$  is created in the hot combustion zone by the combination of atmospheric oxygen and nitrogen. Minimisation of  $\text{NO}_x$  creation is achieved by design of the turbine combustor configuration and fuel nozzles. All four gas turbines are equipped with dry low  $\text{NO}_x$  (DLN) burners. In 2001 new advanced (DLN) burners were retrofitted to LCP277 and in 2009 the original two Siemens v94.3 gas turbines on LCP276 were replaced with two new Siemens SGT5-4000F turbines, a more advanced and developed version of the existing machine.

Gas turbine exhaust gases are monitored continuously and parameters measured include  $\text{NO}_x$  and CO along with other parameters, which measure combustion performance such as temperature and oxygen content. The sampling ports are located in the horizontal ducts between the HRSG's and the stacks. Continuous Emission Monitors (CEM's) meet the Agency's requirements for MCERTS certification.

Cooling water is abstracted from the River Thames to replace cooling tower evaporative and purge losses via a abstraction screen that has been exempted from the Eels Regulations 2009. The cooling tower purge is combined with boiler water blow-down and ion exchange resin bed regeneration flushing's and is neutralised prior to final discharge back to the River Thames downstream of the abstraction point.

LCP397 consists of four gas-oil fired open cycle gas turbines (OCGT's) each of 98 MW thermal input used for emergency generation, with combustion gases from all four units released to air from the top of a 101m high combined single flue stack. These units are fired on gas oil.

There is a small gas fired auxiliary boiler (12MWth) with a separate 32 metre stack, used to keep the HRSG's and steam turbines warm and to supply domestic heating as required when the gas turbines are not operating. This boiler may also burn gas-oil as a standby fuel. There is also a gas-oil fired emergency generator (4.8MWth) and a fire water pumps (0.56 MWth), also fired on gas oil.

Surface and other site drainage water is discharged via interceptors to the Moor Ditch which traverses the site and which itself flows into the River Thames. There are no consented releases to groundwater or sewer from the activities on this site.

Most main items of equipment, with potential to generate noise, are housed within buildings, which provide a high level of acoustic attenuation. There is an acoustic bank along the western boundary of the site. There is a low risk for generating odours having potential to create annoyance off-site.

There are two Special Areas of Conservation within 10 km of the site but no Sites of Special Scientific Interest within 2 km of the site. Modelling indicates that the site will have no significant effect on these designated sites.

Didcot B Power Station has an Environmental Management System which is accredited to ISO14001.

The installation is required to comply with the specific monitoring and reporting requirements of the Large Combustion Plant Directive (2001/80/EC) for gas turbines over 100MW<sub>th</sub>.

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 YP3930LZ received	Duly made 31/03/06	Application for permit
Additional information received	05/09/06	Air dispersion modelling results
Additional information received	23/11/06	Site plan for permit
Permit determined YP3930LZ (PAS Billing ref: YP3930LZ)	27/12/06	Permit granted
Pre-application (closed) EP3433XB	24/10/07	Pre-application only. No notice issued
Application for variation MP3238XE	Duly made 20/12/07	
Further information received	06/08/08	BAT assessment
Variation determined MP3238XE (PAS Billing ref: MP3238XE)	22/01/09	Variation issued for replacement of two gas turbines with more modern versions
Variation application EPR/YP3930LZ/V004	Duly made 08/12/11	
Variation determined EPR/YP3930LZ/V004 (PAS Billing ref: RP3433CW)	22/02/12	Variation issued increasing the emission limit for chloride
Variation application EPR/YP3930LZ/V005	Duly made 18/09/12	
Variation determined EPR/YP3930LZ/V005 (PAS Billing ref: SP3930ZY)	19/10/12	Variation issued changing carbon monoxide emission limit reference periods in-line with the IED
Variation determined EPR/YP3930LZ/V006 (PAS Billing ref: QP3532ZE)	26/02/13	Environment Agency Initiated Variation, to incorporate Eel Regulations improvement condition.
Variation application EPR/YP3930LZ/V007	Duly made 13/05/13	Application to

<b>Status log of the permit</b>		
<b>Description</b>	<b>Date</b>	<b>Comments</b>
Variation determined EPR/YP3930LZ/V007 (PAS Billing ref: BP3034NX)	07/08/13	Variation issued transferring OCGT's operation from Didcot A to Didcot B power station
Notified of change of company name	13/11/14	Name changed to RWE Generation UK Plc.
Variation issued EPR/YP3930LZ/V008 (PAS Billing ref: LP3832W2)	02/12/14	Varied permit issued to RWE Generation UK Plc.
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	14/04/15	Response received from the operator regarding CCGT operation.
Additional information received	27/07/15	Response to request for further information (RFI) dated 27/07/15.
Regulation 60 Notice response	30/07/15	Response received from the operator regarding OCGT operation.
Additional information received	21/12/15	Confirmation of compliance route chosen
Variation determined EPR/YP3930LZ/V009 (PAS Billing ref: DP3138AU)	22/12/15	Varied and consolidated permit issued in modern condition format. Variation effective from 01/01/2016.

<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 Gas plc	LP3835LK	27/12/06

<b>Other existing Licences/Permits/Registrations relating to this site</b>		
<b>Operator</b>	<b>Permit number</b>	<b>Date of issue</b>
RWE Generation UK Plc (abstraction licence)	28/39/18/59	10/02/10

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/YP3930LZ**

### Issued to

**RWE Generation UK Plc** (“the operator”)

whose registered office is

**Windmill Hill Business Park  
Whitehill Way  
Swindon  
Wiltshire  
SN5 6PB**

company registration number 03892782

to operate a regulated facility at

**Didcot B Power Station  
Didcot  
Oxfordshire  
OX11 7YU**

to the extent set out in the schedules.

The notice shall take effect from 01/01/2016

Name	Date
J Linton	22/12/2015

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/YP3930LZ**

This is the consolidated permit referred to in the variation and consolidation notice for application EPR/YP3930LZ/V009 authorising,

**RWE Generation UK Plc** (“the operator”),

whose registered office is

**Windmill Hill Business Park**

**Whitehill Way**

**Swindon**

**Wiltshire**

**SN5 6PB**

company registration number 03892782

to operate an installation at

**Didcot B Power Station**

**Didcot**

**Oxfordshire**

**OX11 7YU**

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

Under regulation 27(2) of the Regulations, standard rules [number(s)] are conditions of this permit.

<b>Name</b>	<b>Date</b>
<b>J Linton</b>	<b>22/12/2015</b>

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 green on the site plan at schedule 7 to this permit, which includes the area edged in red on the site plan that represents the extent of the installation covered by this permit and that of the other operator of the installation.

### **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: LCP276, LCP277 and LCP397. 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: LCP397. The activities shall not operate for more than 500 hours per year.
- 2.3.6 For the following activities referenced in schedule 1, table S1.1: LCP276, LCP277 and LCP397. 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
- 2.3.7 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.

2.3.8 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, S3.2 and S3.3.

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, S3.2 and S3.3 ;
- (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, S3.2, S3.4 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 condition 2.3.5 applies, 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 For the following activities referenced in schedule 1, table S1.1: LCP276 and LCP277. 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.

4.2.5 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.

## 4.3 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 Where the operator has entered into a climate change agreement with the Government, the Environment Agency shall be notified within one month of:
  - (a) a decision by the Secretary of State not to re-certify the agreement;
  - (b) a decision by either the operator or the Secretary of State to terminate the agreement; and
  - (c) any subsequent decision by the Secretary of State to re-certify such an agreement.
- 4.3.8 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 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>LCP276: Module 5 gas turbine electricity generator units GT51 and GT52, with associated heat recovery steam generators. Two units with a combined rated thermal input of 1377MWth fired on natural gas.</p> <p>LCP277: Module 6 gas turbine electricity generator units GT61 and GT62, with associated heat recovery steam generators. Two units with a combined rated thermal input of 1293MWth fired on natural gas.</p> <p>LCP397: OCGT electricity generators. Four units with a combined rated thermal input of 392MWth fired on gas oil</p> <p>Auxiliary boiler with a rated thermal input of 12MWth fired on natural gas or gas oil</p> <p>Emergency electrical generator with a rated thermal input of 4.8MWth fired on gas oil</p>	From receipt of natural gas and gas oil to discharge of exhaust gases and wastes and the generation of steam and electricity.
<b>Directly Associated Activity</b>			
A2	Directly associated activity	Evaporative cooling	From abstraction of cooling water to discharge of cooling water purge to River Thames.
A3	Directly associated activity	Water treatment plant	From receipt of raw materials to dispatch to chemical affluent and waste water system.
A4	Directly associated activity	Effluent water treatment	From receipt of demineralisation regeneration effluent, boiler blow-down, cooling water system purge and receipt of raw materials to discharge to the River Thames.



<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>
A5	Directly associated activity	Surface water drainage	From rainwater collection system, sumps and drains to transfer to cooling water system or discharge to Moor Ditch.
A6	Directly associated activity	Waste handling and storage	From waste generation, storage and monitoring to waste dispatch
A7	Directly associated activity	Fire pump with a rated thermal input of 0.5MWth fired on gas oil	From receipt of gas oil to discharge of exhaust gases and wastes and the pumping of water

<b>Table S1.2 Operating techniques</b>		
<b>Description</b>	<b>Parts</b>	<b>Date Received</b>
Application	The response to section B2.1 and B2.2 in the Application	31/03/06
Receipt of information additional to application	Provision of assessment of combined impact of releases to air of oxides of nitrogen from both Didcot A and B power stations	05/09/06
Application for Didcot A power station	The response to section B2.1 and B2.2 in the Application relating to the operation of the open-cycle gas turbines	31/03/06
Response to regulation 60(1) Notice – request for information dated 31/10/14	Compliance routes and operating techniques identified in response to questions 2 (compliance route), 4 (configuration of the LCP), 6 (MSUL/MSDL) and 9ii (efficiency) for LCP276 and LCP277  Excluding those identified for the ELV and LLD compliance routes for LCP276 and LCP277 and the related operating techniques.	Received 14/04/15
Receipt of additional information to the regulation 60(1) Notice. requested by letter dated 27/07/15	Compliance routes and operating techniques identified in response to question 5 (rated thermal input) for LCP276 and LCP277	Received 27/07/15
Response to regulation 60(1) Notice – request for information dated 31/10/14	Compliance routes and operating techniques identified in response to questions 2 (compliance route), 4 (configuration), 5 (rated thermal input) and 6 (MSDL/MSUL) for LCP397.	Received 30/07/2015
Receipt of additional information to the regulation 60(1) Notice.	Confirmation of the compliance routes chosen for LCP276 and LCP277	Received 21/12/15

<b>Table S1.3 Improvement programme requirements</b>		
<b>Reference</b>	<b>Requirement</b>	<b>Date</b>
IC1	<p>A written procedure shall be submitted to the Agency detailing the measures to be used so that monitoring equipment, personnel and organizations employed for the emissions monitoring program for water shall have either MCERTS certification or accreditation in accordance with condition 3.5.3.</p> <p>The notification requirements of condition 2.4.2</p>	Completed
IC2	<p>A written report shall be submitted to the Agency for approval detailing the results of a survey of hard standing, kerbing and secondary containment for raw materials and waste storage areas. The report shall assess the foregoing against the requirements of sections 2.2.6, 2.2.7 and 2.2.9 of the Combustion Technical Guidance Note. The report shall contain dates for the implementation of individual measures.</p>	Completed
IC3	<p>A written site closure plan shall be prepared and submitted to the Agency for approval to demonstrate that, in its current state, the installation can be decommissioned to avoid any pollution risk and the site of operation returned into a satisfactory state. The plan should comply with the requirements of section 2.11 of the Combustion Technical Guidance Note. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the plan.</p> <p>The procedure shall be implemented by the operator from the date of approval in writing by the Agency.</p>	Completed
IC4	<p>A written report shall be submitted to the Agency for approval detailing the results of a waste minimisation audit, which should also include a review of disposal options to comply with the requirements of section 2.4.2 and 2.6 of the Combustion Technical Guidance Note. The report shall contain, where appropriate, the methodology used and a program for implementation of any measures proposed.</p> <p>The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the report. The program shall be implemented by the operator from the date of approval in writing by the Agency.</p>	Completed
IC5	<p>A written report shall be submitted to the Agency for approval detailing the results of a water efficiency audit to comply with the requirements of section 2.4 of the Combustion Technical Guidance Note. The report shall contain, where appropriate, the methodology used and a program for implementation of any measure proposed.</p> <p>The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the report. The program shall be implemented by the operator from the date of approval in writing by the Agency.</p>	Completed
IC6	<p>Following the commissioning of the new plant, the operator shall submit to the Agency a report detailing the outcome of the commissioning programme. The report shall include the following:</p> <ul style="list-style-type: none"> <li>• verification of the emissions to air;</li> <li>• confirmation on the efficiency data provided in the application and supporting information; and</li> <li>• Identification of any changes to the operating techniques provided in the application.</li> </ul> <p>The notification requirements of condition of 2.5.2 shall be deemed to have been complied with on submission of the report.</p>	Completed

<b>Table S1.3 Improvement programme requirements</b>		
<b>Reference</b>	<b>Requirement</b>	<b>Date</b>
IC7	<p>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.</p> <p>The operator shall submit details of the arrangement suitable to meet 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>	Completed
IC8	<p>It is not considered to be BAT to operate open cycle gas turbines other than in exceptional circumstances</p> <p>The operator should provide a justification of the circumstances under which it may be BAT to operate in open cycle mode in the balancing market or other operating regimes. Parameters to consider should include:</p> <ul style="list-style-type: none"> <li>▪ Emissions to air and impact on human health</li> <li>▪ Energy efficiency</li> </ul> <p>The Environment Agency will use this information along with information from other industry and National Grid to determine generic BAT conditions for the open cycle operation of gas turbines in competition with closed cycle plants.</p> <p>The operator should have regard to the requirements of the balancing market (e.g. start up time requirements) and define a maximum run time beyond which the service should be provided by high efficiency plant.</p>	Completed
IC9	<p>The operator should provide an updated Site Condition Report, prepared in line with Agency guidance note H5.</p>	Completed
IC10	<p>For LCPD LCP243, LCP427 and the OCGT's (now LCP276, LCP277 and LCP397 under the 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.</p>	28/01/16

<b>Table S1.4 Start-up and Shut-down thresholds</b>		
<b>Emission Point and Unit Reference</b>	<b>“Minimum start up load” Load in MW and as percent of rated power output (%)</b>	<b>“Minimum shut-down load” Load in MW and as percent of rated power output (%)</b>
LCP276: A1 / GT51	95MW; 36%; Steam turbine >0MW	95MW; 36%
LCP276: A2 / GT52	95MW; 36%; Steam turbine >0MW	95MW; 36%
LCP277: A3 / GT61	105MW; 44%; Steam turbine >0MW	105MW; 44%
LCP277: A4 / GT62	105MW; 44%; Steam turbine >0MW	105MW; 44%
LCP397: A7 / OCGTs	5MW; 5%	3MW; 3%

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

<b>Table S2.1 Raw materials and fuels</b>	
<b>Raw materials and fuel description</b>	<b>Specification</b>
Gas Oil	Not exceeding 0.1% w/w sulphur content
Raw materials used in water treatment plant, cooling towers and boilers	Discharges of mercury and cadmium as a result of their presence as impurities shall be minimised by ensuring that their levels in raw materials are the minimum commercially available.

## Schedule 3 – Emissions and monitoring

Table S3.1 Point source emissions to air						
Emission point ref. & location	Source	Parameter	Limit (including unit)-these limits do not apply during start up or shut down.	Reference period	Monitoring frequency	Monitoring standard or method
LCP276  [Point A1 & A2 on site plan in Schedule 7]	Gas turbines GT51 and GT52 fired on natural gas	Oxides of Nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	75 mg/m <sup>3</sup>	Monthly mean of validated hourly averages	Continuous	BS EN 14181
			75 mg/m <sup>3</sup> <sup>1</sup> 70% to base load	Daily mean of validated hourly averages	Continuous	BS EN 14181
			82.5 mg/m <sup>3</sup> <sup>2</sup> MSUL/MSDL to base load			
		75 mg/m <sup>3</sup>	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181	
		Carbon Monoxide	100 mg/m <sup>3</sup>	Monthly mean of validated hourly averages	Continuous	BS EN 14181
			110 mg/m <sup>3</sup> <sup>1</sup> 70% to base load	Daily mean of validated hourly averages	Continuous	BS EN 14181
			165 mg/m <sup>3</sup> <sup>2</sup> MSUL/MSDL to base load			
			200 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>Source</b>	<b>Parameter</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>
LCP276  [Point A1 & A2 on site plan in Schedule 7]	Gas turbines GT51 and GT52 fired on natural gas	Oxygen	-	-	Continuous As appropriate to reference	BS EN 14181
		Water Vapour	-	-	Continuous As appropriate to reference	BS EN 14181
		Stack gas temperature	-	-	Continuous As appropriate to reference	Traceable to national standards
		Stack gas pressure	-	-	Continuous As appropriate to reference	Traceable to national standards
		As required by the Method Implementation Document for BS EN 15259	-	-	Pre-operation and when there is a significant operational change	BS EN 15259
		Sulphur Dioxide	-	-	At least every 6 months	Concentration by calculation, as agreed in writing with the Environment Agency
		Stack gas volume flow	-	-	Continuous As appropriate to reference	BS EN 16911 & TGN M2 or otherwise agreed in writing with the Environment Agency

Table S3.1 Point source emissions to air						
Emission point ref. & location	Source	Parameter	Limit (including unit)-these limits do not apply during start up or shut down.	Reference period	Monitoring frequency	Monitoring standard or method
LCP277 [Point A3 & A4 on site plan in Schedule 7]	Gas turbines GT61 and GT62 fired on natural gas	Oxides of Nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	90 mg/m <sup>3</sup>	Monthly mean of validated hourly averages	Continuous	BS EN 14181
			90 mg/m <sup>3</sup> <sup>1</sup> 70% to base load	Daily mean of validated hourly averages	Continuous	BS EN 14181
			99 mg/m <sup>3</sup> <sup>2</sup> MSUL/MSDL to base load			
		90 mg/m <sup>3</sup>	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181	
		Carbon Monoxide	100 mg/m <sup>3</sup>	Monthly mean of validated hourly averages	Continuous	BS EN 14181
			110 mg/m <sup>3</sup> <sup>1</sup> 70% to base load	Daily mean of validated hourly averages	Continuous	BS EN 14181
			165 mg/m <sup>3</sup> <sup>2</sup> MSUL/MSDL to base load			
		200 mg/m <sup>3</sup> <sup>3</sup>	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181	
		Oxygen	-	-	Continuous As appropriate to reference	BS EN 14181
		Water Vapour	-	-	Continuous As appropriate to reference	BS EN 14181



<b>Table S3.1 Point source emissions to air</b>						
<b>Emission point ref. &amp; location</b>	<b>Source</b>	<b>Parameter</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>
LCP277 [Point A3 & A4 on site plan in Schedule 7]	Gas turbines GT61 and GT62 fired on natural gas	Stack gas temperature	-	-	Continuous As appropriate to reference	Traceable to national standards
		Stack gas pressure	-	-	Continuous As appropriate to reference	Traceable to national standards
		As required by the Method Implementation Document for BS EN 15259	-	-	Pre-operation and when there is a significant operational change	BS EN 15259
		Sulphur Dioxide	-	-	At least every 6 months	Concentration by calculation, as agreed in writing with the Environment Agency
		Stack gas volume flow	-	-	Continuous As appropriate to reference	BS EN 16911 & TGN M2 or otherwise agreed in writing with the Environment Agency
LCP397 [Point A7 on site plan in schedule 7]	Open-cycle gas turbines fired on gas oil	Oxides of Nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	-	-	Concentration by calculation, every 4380 operational hours or 2 years, whichever is sooner.	Agreed in writing with the Environment Agency
		Carbon Monoxide	-	-	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>Source</b>	<b>Parameter</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>
LCP397 [Point A7 on site plan in schedule 7]	Open-cycle gas turbines fired on gas oil	Sulphur Dioxide	-	-	Concentration by calculation, every 4380 operational hours or 2 years, whichever is sooner.	Agreed in writing with the Environment Agency
		Dust	-	-	Concentration by calculation, every 4380 operational hours or 2 years, whichever is sooner.	Agreed in writing with the Environment Agency
A5 [point A5 on site plan in schedule 7]	Methane vents	-	-	-	-	-
A5 [point A6 on site plan schedule 7]	Auxiliary boiler		-	-	-	-
Hydrogen vents	Steam turbine generator cooling		-	-	-	-
Emergency pressure relief vents	-		-	-	-	-
Vents from storage tanks	-		-	-	-	-
Diesel engine exhausts	Emergency generator and fire pump		-	-	-	-

Note 1: This ELV applies when the load is >70% throughout the reference period.

Note 2: This ELV applies when the load varies between MSUL/MSDL and base load during the daily reference period. MSUL and MSDL are defined in Table S1.4.

<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>Source</b>	<b>Parameter</b>	<b>Limit (incl. unit)</b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
W1 [W1 on site plan in Schedule 7]	Cooling water purge, boiler water blow-down, neutralised water treatment plant effluent	Total suspended solids	Content in intake water plus 130 mg/litre (1 <sup>st</sup> November to 31 <sup>st</sup> March inclusive)	Spot	Weekly	BS EN 872 <sup>1</sup>
			Content in intake water plus 60 mg/litre (1 <sup>st</sup> April to 31 <sup>st</sup> October inclusive)			
		pH	6.5-9 (inclusive)	Instantaneous	Continuous	BS6068-2.50 <sup>1</sup>
		Oil or grease	20mg/litre	Spot	Weekly	SCA Blue book 77 ISBN 011751728 <sup>1</sup>
			None visible	None	Every 2 days	Visual check
		Temperature	27 deg C	Instantaneous	Continuous	
		BOD	10 mg/litre	Spot	Monthly	SCA blue book 130. ISBN 0117522120 <sup>1</sup>
		Flow	35,000 m <sup>3</sup> /day	Day	Continuous	
		Sulphate (as SO <sub>4</sub> )	Twice the intake water value plus 460-mg/litre but not exceeding 700 mg/litre total.	Spot	Monthly	SCA blue book 136. ISBN 0117522406 <sup>1</sup>
		Total chlorine (as TRO)	100 µg/litre	Spot	Monthly	SCA blue book 27. ISBN 0117514934 <sup>1</sup>

<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>Source</b>	<b>Parameter</b>	<b>Limit (incl. unit)</b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
		Chloride (as Cl-)	1000 mg/litre during discharge of neutralised water treatment plant effluent  200 mg/litre at all other times.	Spot	Monthly	SCA blue book 51 ISBN 0117516260 <sup>1</sup>
		Dissolved oxygen	Not less than 80% saturation.	Spot	Monthly	SCA blue book 16 ISBN 011751442X <sup>1</sup>
W2 [W2 on site plan in schedule 7]	Site drainage, separated water from the oily drainage system and filter back-washings from water treatment plant	Total suspended solids	20 mg/litre(except during extreme weather)	Spot	Weekly	BS EN 872 <sup>1</sup>
		pH	6.5-9 (inclusive)	Spot	Weekly	SCA blue book 14. ISBN 0117514284 <sup>1</sup>
		Oil or grease	20mg/litre (except during extreme weather)	Spot	Weekly	SCA Blue book 77 ISBN 011751728 <sup>1</sup>
			None visible	None	Every 2 days	Visual check <sup>1</sup>
W4 [W4 on site plan in schedule 7]	Common outfall to River Thames	pH	-	-	-	
		Oil or grease	-	-	-	
		Temperature	-	-	-	
		Flow	-	-	-	

Note 1: This monitoring standard or method applies unless otherwise agreed in writing with the Environment Agency

<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	LCP276 and LCP277
		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 to 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>
River Thames intake water	Total suspended solids	Spot weekly	BS EN 872	
River Thames intake water	Sulphate (as SO <sub>4</sub> )	Spot monthly	SCA Blue Book 136	

## 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	LCP276 LCP277	Every 3 months for continuous monitoring	1 January, 1 April, 1 July, 1 October
	LCP397	Every 6 months for periodic monitoring	1 January, 1 July
Carbon Monoxide	LCP276 LCP277	Every 3 months for continuous monitoring	1 January, 1 April, 1 July, 1 October
	LCP397	Every 6 months for periodic monitoring	1 January, 1 July
Sulphur dioxide	LCP276 LCP277	Every 3 months for continuous monitoring	1 January, 1 April, 1 July, 1 October
	LCP397	Every 6 months for periodic monitoring	1 January, 1 July
Dust	LCP397	Every 6 months for periodic monitoring	1 January, 1 July
Emissions to Water Parameters as required by condition 3.5.1	W1, W2	Every 6 months	1 January, 1 July

<b>Table S4.2: Resource Efficiency Metrics</b>	
<b>Parameter</b>	<b>Units</b>
Electricity Exported	GWhr
Heat Exported	GWhr
Mechanical Power Provided	GWhr
Fossil Fuel Energy Consumption	GWhr
Non-Fossil Fuel Energy Consumption	GWhr
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>

<b>Parameter</b>	<b>Units</b>
Water Abstracted from Sea Water Source	m <sup>3</sup>
Water Abstracted from Mains Water Source	m <sup>3</sup>
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 & Area Office	31/12/15
Air	Form IED RTA1 –TNP quarterly emissions summary log	01/01/16	National & Area Office	31/12/15
LCP	Form IED HR1 – operating hours	01/01/16	National & Area Office	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 & Area Office	31/12/15

<b>Table S4.4 Reporting forms</b>				
<b>Media/ parameter</b>	<b>Reporting format</b>	<b>Starting Point</b>	<b>Agency recipient</b>	<b>Date of form</b>
Water	Form water 1 or other form as agreed in writing by the Environment Agency	01/01/16	Area Office	22/01/09



# 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.

“emissions to land” includes emissions to groundwater.

“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.

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

“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.

“hazardous property” has the meaning given in Schedule 3 of the Hazardous Waste (England and Wales) Regulations 2005 No.894 and the Hazardous Waste (Wales) Regulations 2005 No. 1806 (W.138).

“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

“Waste code” means the six digit code referable to a type of waste in accordance with the List of Wastes (England) Regulations 2005, or List of Wastes (Wales) Regulations 2005, as appropriate, and in relation to hazardous waste, includes the asterisk.

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

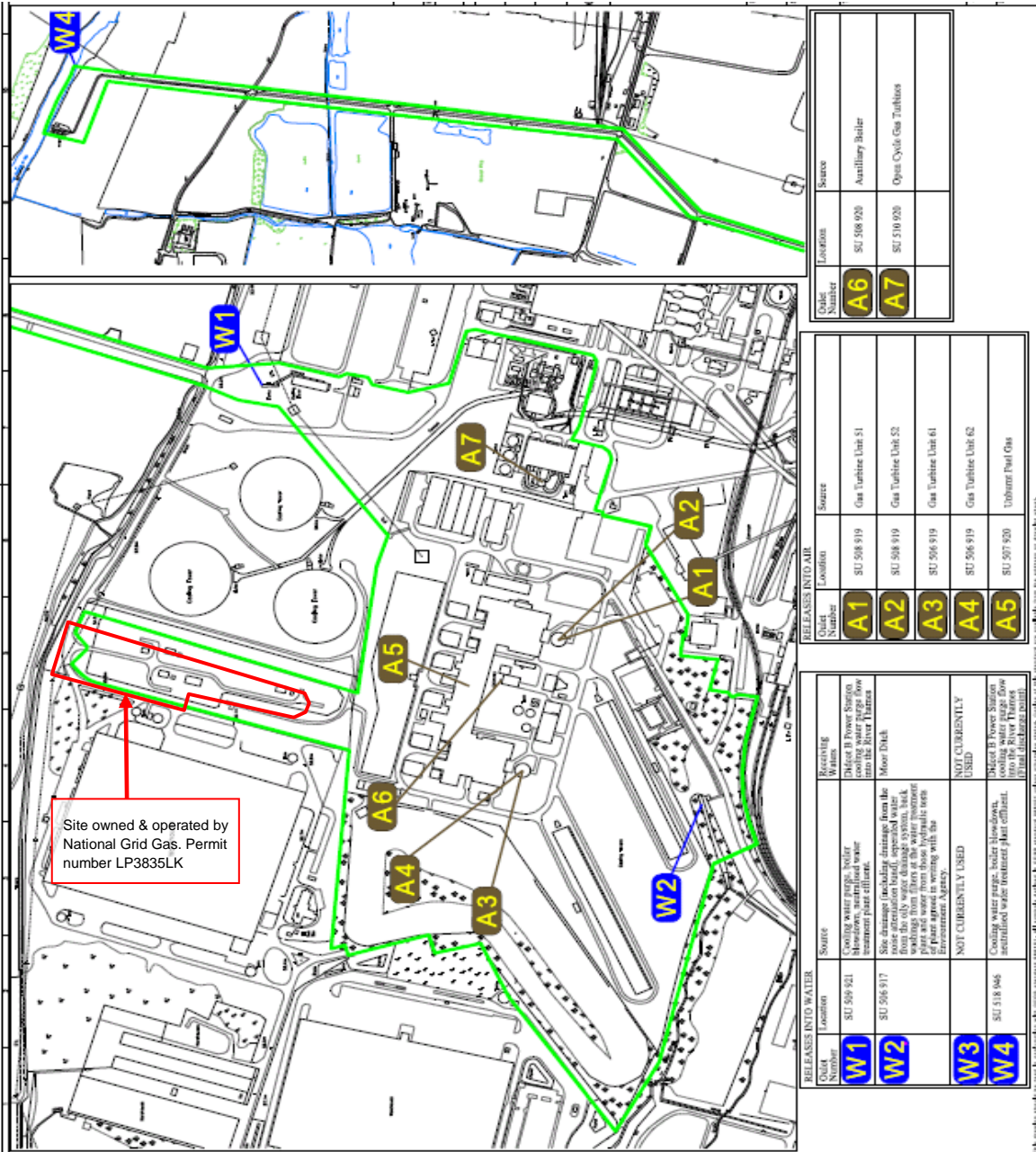
in relation to emissions from gas turbine or compression ignition engine combustion processes, the concentration in dry air at a temperature of 273K, at a pressure of 101.3kPa and with an oxygen content of 15% dry for liquid and gaseous fuels; and/or

- in relation to emissions from 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.

“year” means calendar year ending 31 December.

# Schedule 7 – Site

plan



END OF PERMIT