



Notice of variation and consolidation with introductory note

The Environmental Permitting (England & Wales) Regulations 2010

E.ON UK CHP Limited

Port of Liverpool CHP

Regent Road

Bootle

Liverpool

L20 1ED

Variation application number

Permit number

EPR/BK3506IS

Port of Liverpool CHP

Permit number EPR/BK3506IS

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.

Purpose

The Port of Liverpool Combined Heat and Power Station (CHP) is situated in the Liverpool Docks along the east bank of the River Mersey. The site is located in an Air Quality Management Area (AQMA) for NO_x in Liverpool. The main purpose of the activity at the installation is:

- To generate electricity to meet the electrical requirements of local customers and the Mersey Docks and Harbour Company;
- To generate steam to meet the requirements of local customers and the Mersey Docks and Harbour Company;
- To provide for the future energy needs of the Port of Liverpool.

The main plant components consist of natural gas compressors, gas turbine generator (GT), heat recovery steam generator (HRSG) with supplementary gas firing, gas/fuel oil fired auxiliary package boilers (three off), water treatment plant and steam supply and condensate return pipe work between client plants.

Operation

During normal operation, the steam and electricity demands are met with the GT on full load and with modulating supplementary firing of the HRSG. The auxiliary boilers are maintained on hot standby to quickly pick up the steam load should a trip occur on the GT and/or HRSG. Peak steam demands are met by full supplementary firing of the HRSG and modulated gas firing of one of the auxiliary boilers.

In combined cycle operation (CCGT) the GT generates a net power output of 32.1 MWe. The gas fuel combustor incorporates dry low emission technology to control the emissions of carbon monoxide and oxides of nitrogen. The hot exhaust gases from the turbine pass to the HRSG at between 480°C and 530°C. During plant start up or emergency or essential maintenance periods the hot gases can be diverted in open cycle operation (OCGT) from the HRSG via the 40 m high bypass stack.

The Heat Recovery Steam Generator (HRSG) can generate steam at 20.8 kg/s (75 tph) at 18 barA and 230°C. Flue gases pass from the HRSG to air through another 40 m high stack. The HRSG has no auxiliary (fresh air) firing facility and therefore cannot operate independently of the GT.

Three auxiliary boilers are installed to form an independent back up steam raising facility and when all are in service full steam production, up to 28 tonnes per hour each, can be maintained. They are dual fired such that if there is an interruption of natural gas supply, distillate fuel oil can be used. Flue gases from each of these boilers are released to air in individual flues via a 40 m high multi flue shared windshield stack.

Cooling for the LCP system is by Fin Fan Coolers consisting of heat exchangers with forced draught cooling provided by numerous fans.

There is a requirement to make up water losses from blow down and the proportion of steam consumed at the customer's sites. An ion exchange water treatment plant prepares incoming towns water and recycled condensate for re-use as boiler feed water. The ion exchange plant requires periodic regenerating with hydrochloric acid and sodium hydroxide. Effluent from the regeneration process is neutralised and discharged into the plant drainage system along with other wastewater arisings.

Emissions

The firing of natural gas forms carbon monoxide, carbon dioxide and oxides of nitrogen. Establishing good combustion condition controls carbon monoxide levels. Releases of carbon dioxide may be allied to electrical and steam energy output to derive a measurement of overall efficiency of the process. Oxides of nitrogen (NOx) are formed in high temperature reactions between nitrogen in the fuel, combustion air and oxygen. The formation of NOx is reduced by the use of low NOx burner technology in the GT.

The use of distillate fuel oil produces releases of carbon monoxide, carbon dioxide, oxides of nitrogen, sulphur dioxide and small quantities of particulate matter from residual ash and incomplete combustion. Sulphur dioxide releases are controlled by limits on the sulphur content of the fuel and, if necessary, limits on periods of firing.

No substances prescribed for release to water are used as part of the installation. Water treatment chemicals may have traces of metals in them and releases of these are controlled by product specification. There are no releases to controlled waters. There are releases to sewer.

The permitted activity has the potential to create ground contamination and consequently all plant and equipment associated with the CHP are built or contained on bunded concrete areas.

The Operator's environmental management system (EMS) ISO 14001 addresses the identification, assessment, reduction and mitigation of risk of accidents potentially affecting the environment.

Energy

Individual sections of the CHP plant have the following thermal ratings:

Quantity	Appliance	Net rated thermal input for individual combustion units	Net rated thermal input for each LCP
1	Gas Turbine	80 MWth	102 MWth (LCP115)
1	Heat Recovery Steam Generator	22 MWth	
3	Auxiliary boilers	25 MWth each	75 MWth (LCP417)
Total	CHP Total	177 MWth	177 MWth

The CHP can achieve an overall efficiency of greater than 75% (meaning that more than 75% of the energy of the natural gas fuel is converted into electrical and heat (steam) energy) and this is considered 'good quality' in terms of Government requirements.

Purpose of variation EPR/BK3506IS/V006

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.

There are two LCPs subject to this permit. The variation notice uses an updated LCP number in accordance with the most recent Defra LCP reference numbers. The LCP references have changed as follows:

LCP166 is changed to LCP115; and

The auxiliary boiler LCP (previously unlabelled) is identified as LCP417.

The Operator has chosen to operate these LCPs under the Transitional National Plan (TNP) compliance route. This is a change from the previous operating regime which was operation under emission limits determined by an assessment of the best available techniques (BAT). The rest of the installation is unchanged and continues to be operated as described above.

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

Status Log		
Detail	Date	Comments
Application BK3506IS	Received 19/12/01	
Response to request for information	07/05/02	Response dated 29/05/02
Permit BK3506IS (A001)	31/07/02	Determined
Variation BU3884 (V002)	01/07/03	Effective date
Variation JP3730BK (V003)	01/01/05	Effective date
Variation FP3931MY (V004)	14/02/07	Effective date
Variation application received EPR/BK3506IS/V005	05/05/09	
Variation determined EPR/BK3506IS/V005	13/08/09	Consolidated permit issued
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
Application for Minor Operational Change	05/01/15	Request granted to carry out trials regarding partial load operation. Trials time limited to be completed by 31/12/15.
Regulation 60 Notice response	27/03/15	Response received from the Operator.
Additional information received	30/06/15	Response to request for further information (RFI) dated 20/05/15.
	12/11/15	Response to request for clarification dated 10/11/15.
Variation determined EPR/BK3506IS/V006 (PAS Billing ref: CP3938AD)	29/12/15	Varied and consolidated permit, issued in modern condition format. Variation effective from 01/01/2016.

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/BK3506IS

Issued to

E.ON UK CHP Limited (“the operator”)

whose registered office is

**Westwood Way
Westwood Business Park
Coventry
West Midlands
CV4 8LG**

company registration number **02684288**

to operate a regulated facility at

**Port of Liverpool CHP
Regent Road
Bootle
Liverpool
L20 1ED**

to the extent set out in the schedules.

The notice shall take effect from 01/01/2016.

Name	Date
Mike Jenkins	29/12/2015

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/BK3506IS

This is the consolidated permit referred to in the variation and consolidation notice for application EPR/BK3506IS/V006 authorising,

E.ON UK CHP Limited (“the operator”),

whose registered office is

**Westwood Way
Westwood Business Park
Coventry
West Midlands
CV4 8LG**

company registration number **02684288**

to operate an installation at

**Port of Liverpool CHP
Regent Road
Bootle
Liverpool
L20 1ED**

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

Name	Date
Mike Jenkins	29/12/2015

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

This is not a multi-operator installation.

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.

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, LCP115 (CCGT operation), LCP115 (OCGT operation) and LCP417: 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, LCP417: standby fuel gasoil may be used for periods of up to 10 days during times of interruption to the gas supply.
- 2.3.6 For the following activities referenced in schedule 1, table S1.1: LCP115 (OCGT operation). 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: LCP115 (CCGT operation), LCP115 (OCGT operation) and LCP417. 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.

2.5 Pre-operational conditions

There are no pre-operational conditions

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, S3.3 and S3.4

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 table S3.1 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) surface water or groundwater 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 LCPs 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 of a single measured result shall be taken to be 20%;
 - (c) the 95% confidence interval for carbon monoxide releases of a single measured result shall be taken to be 10%;
 - (d) 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
 - (e) 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 start date and time, and the days and hours of operation for each period of standby fuel operation.

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: LCP115 and LCP417. 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, in which case it may be provided by telephone.

Schedule 1 – Operations

Table S1.1 activities		
Activity listed in Schedule 1 of the EP Regulations	Description of specified activity	Limits of specified activity
Section 1.1 A(1) (a): Burning any fuel in an appliance with a rated thermal input of 50 megawatts or more.	LCP115 (CCGT operation): Operation of a combined cycle gas turbine power plant (CCGT) and Heat Recovery Steam Generator (HRSG) burning gas to produce electricity (including partial load and partial by-pass operation). Overall net thermal input 102 MWth.	Receipt of natural gas from the national transmission system (NTS) to supply of electricity to the regional transmission network and steam for export. Partial by-pass is limited to a maximum of 50% of the by-pass damper position.
	LCP115 (OCGT operation): Operation in full by-pass mode of the gas turbine power plant (OCGT) burning gas to produce electricity.	Receipt of natural gas from the national transmission system (NTS) to supply of electricity to the regional transmission network and steam for export. The plant shall not be operated in full by-pass mode for more than 500 hours per year and only for emergency or essential maintenance periods.
	LCP417: three package boilers comprising: LCP417-1, LCP417-2 and LCP417-3 Burning gas or gas oil for production of steam. Overall net thermal input 75 MWth.	Receipt of natural gas from the national transmission system (NTS) or oil from storage to supply of steam for export.
Directly Associated Activity		
Directly associated activity	Water treatment	From receipt of raw materials to ion exchange and water polishing and discharge to effluent system.

Table S1.2 Operating techniques		
Description	Parts	Date Received
Application for permit	The responses to questions given in the following sections of the application for the permit: 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8, 2.9, 2.10 and 2.11	19/12/01
Response to Schedule 4 Part 1 Notice	The responses to the following questions of the notice: 1, 2, 3, 4, 5 and 7	31/05/02
Variation application FP3931MY	The responses to questions given in the following sections of the application for the variation: 1.1, 1.2, 1.3, 1.4, 1.5 and 1.6	22/01/07
Response to regulation 60(1) Notice – request for information dated 31/10/14	Compliance routes and operating techniques identified in response to notice questions 2 (compliance route), 4 (plant configuration), 5 (net rated thermal input), 6 (MSUL/MSDL), 9 (proposed ELVs), 10 (standby fuel derogations) and 11 (monitoring requirements).	Received 27/03/15

Table S1.2 Operating techniques

Description	Parts	Date Received
Receipt of additional information to the regulation 60(1) Notice. requested by letter dated 20/05/15	Compliance routes and operating techniques identified in response to notice questions 4 (plant configuration), 5 (net rated thermal input), 6 (MSUL/MSDL), 9 (proposed ELVs) and 11 (monitoring requirements).	30/06/15
Receipt of additional information to the regulation 60(1) Notice. requested by email dated 10/11/15	Compliance routes and operating techniques identified in response to email questions 1 and 2 (proposed ELVs), 3 (net rated thermal input), 7 and 10 (MSUL/MSDL) and 9 (excluding <1500 hour compliance route).	12/11/15
Receipt of additional information to the regulation 60(1) Notice.	Confirmation of the compliance route chosen for LCP115 and LCP417	21/12/15

Table S1.3 Improvement programme requirements

Reference	Requirement	Date
IC1 (formerly 9.1)	The Operator shall submit written proposals for a baseline noise survey of the installation after commissioning. The survey shall a) identify the main sources of noise and vibration, operational times of the noise and details of the nearest noise sensitive receptors b) compare actual noise emissions against those predicted in the design stage of the project c) include proposals, if appropriate, for noise control techniques and remedial measures	Complete
IC2 (formerly 9.2)	The Operator shall develop a noise management plan taking account of the BAT guidance in section 2.9 of the (General) Sector Guidance note and the Agency Noise Guidance Note IPPC H3	Complete
IC3 (formerly 9.3)	The Operator shall a) provide a written site closure plan that considers the aspects described in the Indicative BAT Requirements of section 2.11 of the (General) Sector Guidance b) programme into the site management system a requirement to submit an update of this plan every 5 years, from the date of this permit, to the Agency.	Complete
IC4	For LCPD LCP166 (now LCP115 under IED) and LCP (previously unlabelled, now LCP417 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
IC5	The Operator shall investigate options to increase the steam demand and reduce the requirement for operation of partial by-pass operation. The Operator shall provide a report with details and conclusions of the investigation in writing to the Environment Agency.	30/09/16

Table S1.4 Start-up and Shut-down thresholds

Emission Point and Unit Reference	Minimum start up load	Minimum shut-down load
A1: LCP115 (CCGT operation) A2: LCP115 (OCGT operation)	22.4 MWe; 70% (Load in MW and as percent of rated power output (%))	22.4 MWe; 70% (Load in MW and as percent of rated power output (%))
A3, A4, A5: LCP417	7 tph; approx 25% (Steam flow rate from each boiler, in tonnes per hour and approximate percent of rated thermal output (%))	7 tph; approx 25% (Steam flow rate from each boiler, in tonnes per hour and approximate percent of rated thermal output (%))

Schedule 2 – Waste types, raw materials and fuels

Table S2.1 Raw materials and fuels	
Raw materials and fuel description	Specification
Gas oil (as stand-by fuel)	Not exceeding 0.1% w/w sulphur content

Schedule 3 – Emissions and monitoring

Table S3.1 Point source emissions to air from Gas Turbines >100 MWth operating under the Transitional National Plan					
Source and Emission point ref. & location	Parameter	Limits [2]	Reference period	Monitoring frequency	Monitoring standard or method
LCP115 Gas turbine fired on natural gas; emitting via A1, A2 Plant operating mode [1]: 1, 2, 4	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	60 mg/m ³	Monthly mean of validated hourly averages	Continuous [3]	BS EN 14181
		66 mg/m ³	95% of validated daily means within a calendar year	Continuous [3]	BS EN 14181
		120 mg/m ³	95% of validated hourly averages within a calendar year	Continuous [3]	BS EN 14181
	Carbon Monoxide	100 mg/m ³	Monthly mean of validated hourly averages	Continuous [3]	BS EN 14181
		110 mg/m ³	Daily mean of validated hourly averages	Continuous [3]	BS EN 14181
		200 mg/m ³	95% of validated hourly averages within a calendar year	Continuous [3]	BS EN 14181
	Sulphur dioxide	-	-	At least every 6 months	Concentration by calculation, as agreed in writing with the Environment Agency
	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
	Stack Gas Volume Flow	-	-	Continuous	BS EN 16911 & TGN M2
	As required by the Method Implementation Document for BS EN 15259	-	-	Pre-operation and when there is a significant operational change	BS EN 15259

Table S3.1 (continued) Point source emissions to air from Natural Gas fired boilers ≥50 <100MWth operating under the Transitional National Plan

Source and Emission point ref. & location	Parameter	Limits [2]	Reference period	Monitoring frequency	Monitoring standard or method
LCP417 Boiler plant fired on natural gas; emitting via A3, A4, A5 Plant operating mode [1]: 2 and 5	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	140 mg/m ³	-	At least every 6 months or as otherwise agreed in writing	BS EN 14792
	Carbon Monoxide	100 mg/m ³	-	At least every 6 months or as otherwise agreed in writing	BS EN 15058
	Sulphur dioxide	-	-	At least every 6 months	Concentration by calculation, as agreed in writing with the Environment Agency
	Dust	-	-		
	Oxygen	-	-	Periodic As appropriate to reference	BS EN 14789
	Water Vapour	-	-	Periodic As appropriate to reference	BS EN 14790
	Stack gas volume flow	-	-	As specified in TGN M2	BS EN 16911 & TGN M2
	As required by the Method Implementation Document for BS EN 15259	-	-	Pre-operation and when there is a significant operational change	BS EN 15259

Table S3.1 (continued) Point source emissions to air when Gas Turbines operating in full by-pass operation (<500 hrs)

Source, Emission point ref. & location	Parameter	Limit	Reference Period	Monitoring frequency	Monitoring standard or method
LCP115 (complete OCGT operation): Gas turbine fired on natural gas; emitting via A2 Plant operating mode: [1] 3	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	No limits set	--	Concentration by calculation, every 4380 operational hours or 2 years, whichever is sooner.	Agreed in writing with the Environment Agency
	Sulphur dioxide				
	CO				

Note [1]: See table S3.1.1

Note [2]: These limits do not apply during start up or shut down.

Note [3]: When in partial by-pass mode 4, monitoring of emissions at A1 is used for A2

Table S3.1.1: Plant Operating Modes		
Operating Plant	Mode of operation [1]	Emission points
GT & HRB	Mode 1 – Normal steam demand; closed cycle (GT & HRB with or without supplementary firing); natural gas fired; normal operation	A1
GT, HRB & Auxiliary Boilers	Mode 2 – High steam demand; closed cycle (GT & HRB with or without supplementary firing) plus Auxiliary Boilers; natural gas fired	A1, A3, A4, A5
GT	Mode 3 – Electricity only, no steam: open cycle (GT only); damper position 100% open; natural gas fired; condition 2.3.6 applies	A2
GT & HRB	Mode 4 – Low steam demand; partial load and partial by-pass (maximum damper position 50% open) at low steam demand; natural gas fired; no time restriction	A1 & A2
Auxiliary Boilers	Mode 5 – Auxiliary Boilers fired on natural gas; GT and HRB off-line	A3, A4, A5
Auxiliary Boilers	Mode 6 – Auxiliary Boilers fired on gas oil; GT and HRB off-line; emergency use only; no limits set; condition 2.3.5 applies	A3, A4, A5

Note [1]: In the event the HRB unit is off line with a plant requirement to produce steam and electricity the operator shall notify the Environment Agency.

Table S3.2 Point source emissions to sewer, effluent treatment plant or other transfers off-site–emission limits and monitoring requirements					
Source and Emission point ref. & location	Parameter	Concentration Limit	Annual limit	Monitoring frequency	Monitoring standard or method
S1 [1], S2 [2]	Mercury	0.001 mg/l	0.1 kg	Annual	[3]
	Cadmium	0.0025 mg/l	0.1 kg	Annual	[3]

Note [1]: Trade Effluent Interceptor discharging to United Utilities Ltd sewer

Note [2]: Surface Water Interceptor discharging to United Utilities Ltd sewer

Note [3]: By calculation using annual throughput of raw materials and the contamination levels.

Table S3.3 Annual limits (excluding start up and shut down except where otherwise stated).				
Substance	Medium	Limit		Emission Points
Oxides of nitrogen	Air	Assessment year	LCP TNP Limit	LCP115: A1, A2
		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	LCP417: A3, A4, A5
		01/01/20-30/06/20		

Table S3.4 Point source emissions to surface water or groundwater		
Location or description of point of measurement	Sources	Soakaways
W1	Steam traps along steam pipeline	Adjacent steam pipeline route to steam users

Schedule 4 – Reporting

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

Table S4.1 Reporting of monitoring data			
Parameter	Emission or monitoring point/reference	Reporting period	Period begins
Oxides of nitrogen	A1, A2	Every 3 months	1 January, 1 April, 1 July, 1 October
Carbon monoxide	A1, A2		
Oxides of nitrogen	A3, A4, A5	Every 6 months	1 January, 1 July
Carbon monoxide	A3, A4, A5		
Sulphur dioxide	A1, A2, A3, A4, A5	Every 6 months	1 January, 1 July
Dust	A3, A4, A5	Every 6 months	1 January, 1 July
Mass release of cadmium to sewer	S1, S2	Every 12 months	1 January
Mass release of mercury to sewer	S1, S2		

Table S4.2: Resource Efficiency Metrics	
Parameter	Units
Electricity Exported	GWh
Heat Exported	GWh
Mechanical Power Provided	GWh
Fossil Fuel Energy Consumption	GWh
Non-Fossil Fuel Energy Consumption	GWh
Annual Operating Hours	h
Water Abstracted from Fresh Water Source	m ³
Water Abstracted from Borehole Source	m ³
Water Abstracted from Estuarine Water Source	m ³
Water Abstracted from Sea Water Source	m ³
Water Abstracted from Mains Water Source	m ³
Gross Total Water Used	m ³
Net Water Used	m ³
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

Table S4.3 Chapter III Performance parameters for reporting to DEFRA

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

Table S4.4 Reporting forms

Media/ parameter	Reporting format	Starting Point	Agency recipient	Date of form
Air & Energy [1]	Form IED AR1 – SO ₂ , NO _x and dust mass emission and energy (For all LCPs)	01/01/16	National	31/12/15
Air [1]	Form IED RTA1 –TNP quarterly emissions summary log (For all LCPs under TNP)	01/01/16	National	31/12/15
LCP [1]	Form IED HR1 – operating hours (For all LCPs)	01/01/16	National	31/12/15
Air [1]	Form IED CON 2 – continuous monitoring (CEMs reporting for LCP115 only)	01/01/16	Area Office	31/12/15
CEMs [1]	Form IED CEM1 – Invalidation Log (CEMs reporting for LCP115 only)	01/01/16	Area Office	31/12/15
Air [1]	Form IED PM1 - discontinuous monitoring and load. (LCP147 only)	01/01/16	Area Office	31/12/15
Resource Efficiency [1]	Form REM1 – resource efficiency annual report	01/01/16	National	31/12/15
Sewer [2]	Form SEWER (ANNUAL) 1 or other form as agreed in writing by the Environment Agency	01/01/16	Area Office	03/08/09

Note [1]: Forms relating to LCP operation; these are standardised forms and not all parameters may be applicable to this permit.

Note [2]: Form relating to non-LCP operation.

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	

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

(b) Notification requirements for the breach of a limit	
To be notified within 24 hours of detection unless otherwise specified below	
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

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

Part B – to be submitted as soon as practicable

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

Name*	
Post	
Signature	
Date	

* 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.

“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.

“CEN” means Comité Européen de Normalisation.

“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.

“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 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.

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

“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.

“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.

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

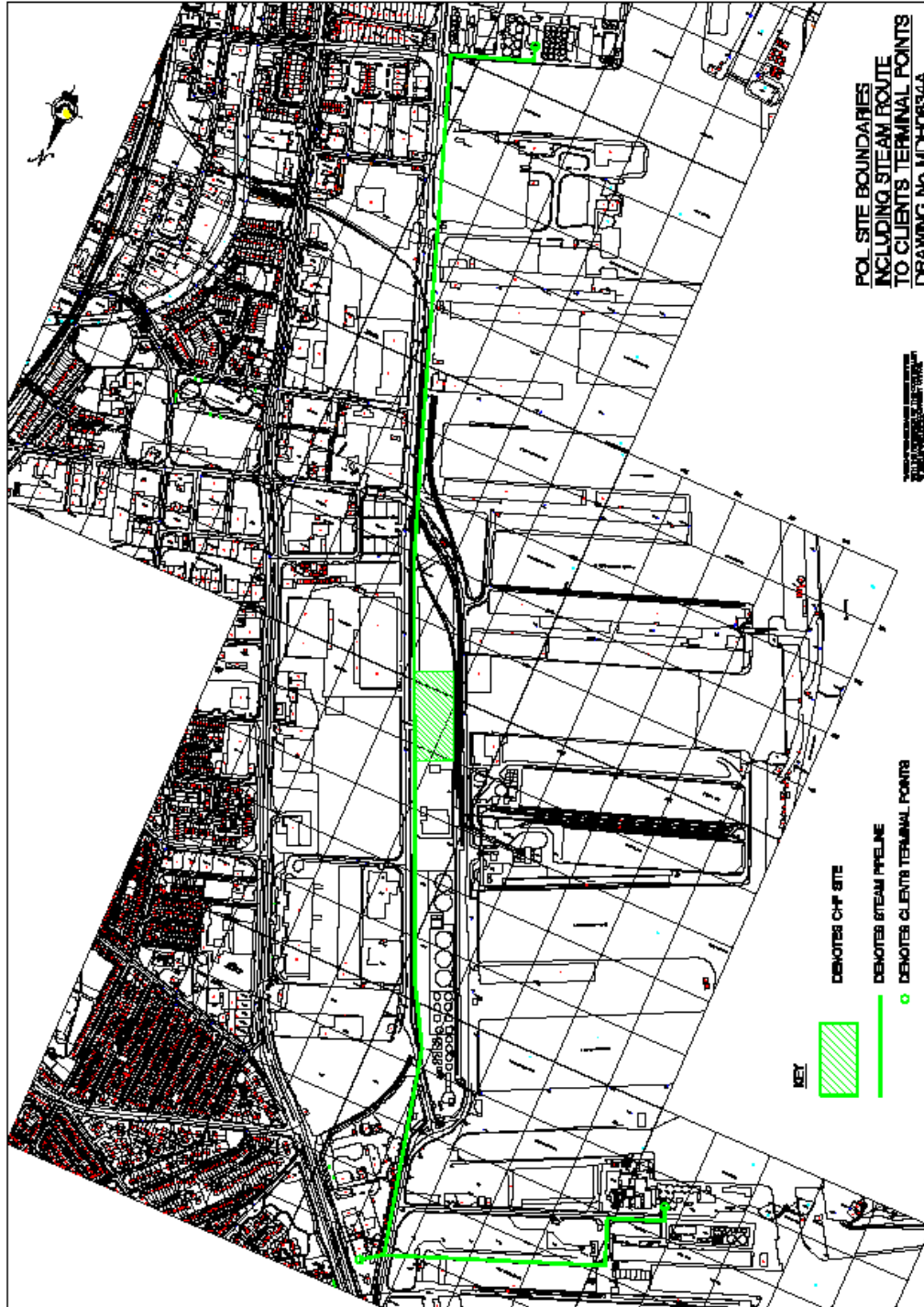
“TNP Register” means the register maintained by the Environment Agency in accordance with regulation 4 of the Large Combustion Plants (Transitional National Plan) Regulations 2015 SI2015 No.1973.

“year” means calendar year ending 31 December.

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 273.15 K, 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 273.15 K, at a pressure of 101.3 kPa and with an oxygen content of 15% dry for liquid and gaseous fuels; and/or

Schedule 7 – Site plan



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