Notice of variation and consolidation with introductory note

The Environmental Permitting (England & Wales) Regulations 2010

E.ON UK Cogeneration Limited

Sandbach Power Installation
Booth Lane
Elworth
Sandbach
Cheshire
CW11 3PZ

Variation application number

EPR/BS5371IZ/V005

Permit number

EPR/BS5371IZ

Sandbach Power Installation
Permit number EPR/BS5371IZ

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.

The main features of the installation are as follows.

E.ON UK Cogeneration Limited (E.ON), operate a combined cycle gas turbine (CCGT) power plant approximately 2 km from the town of Sandbach. The plant is located just off the A533, near Stud Green by the Trent and Mersey Canal and operates as a stand-alone unit, primarily during peak demand periods, solely for the supply of electricity to the regional transmission network.

In CCGT mode the plant comprises an aero-derivative gas turbine, an unfired heat recovery steam generator (HRSG), a condensing steam turbine and a hybrid forced draught cooling system. The maximum net rated thermal input of the gas turbine is 102.2 MWth.

The gas turbine comprises a compressor, a combustor and a power turbine. Combustion air from the atmosphere is filtered and drawn into the low-pressure compressor through the high-pressure compressor and into the combustor. Natural gas is injected into the combustion section where it is pre-mixed with hot combustion air in the dry, low emissions (DLE) burner system before ignition. The hot, pressurised combustion gases are expanded through the power turbine, which drives an electrical generator producing up to 41.5 MWe.

The exhaust gases from the turbine pass through the HRSG, before discharging to atmosphere via a 30 m high stack (emission point A1). There is no supplementary firing, no provision for the use of alternative fuels and no stand-by boiler plant. During start-up, periods of intended open cycle (OCGT mode) operation in response to rapid increased demand from the Grid or during maintenance of the HRSG or steam turbine, the gas turbine combustion gases vent to atmosphere via a 30 m high by-pass stack (emission point A2).

High-pressure steam raised in the HRSG is expanded through the condensing steam turbine, which drives a second electrical generator, producing up to 14 MWe. The electricity generated from the plant is supplied to the Elworth sub-station. Condensate from the steam turbine condenser is returned as boiler feedwater to the HRSG.

Boiler feedwater for the HRSG comprises polished demineralised water, currently supplied from the United Utilities towns water mains, which is further treated by E.ON to control corrosion and scaling. E.ON have buffer storage for the demineralised water supply equivalent to about 48 hours of operation. The HRSG feedwater system has a small continuous purge (blowdown) to control the quality of the water. This water is pumped from the blowdown pit into the cooling tower pond.

Water for the cooling water system, is abstracted from the Trent and Mersey canal at grid reference SJ 7304 6211. In periods of low canal flow, the abstraction may be supplemented with Towns water supply or alternatively the plant may reduce load. The cooling water system, which serves the steam turbine condenser and other auxiliary plant coolers, is closed circuit. This system is dosed with sulphuric acid to achieve optimum pH and with sodium hypochlorite as a biocide to control microbial growth. A continuous purge from the cooling tower pond is used to control water quality in the cooling water system. The purge is discharged via a dedicated pipeline into the canal at grid reference SJ 37282 36303.

Make up abstraction water for the cooling water system provides for the losses from the cooling tower purge, the blowdown quench and losses to atmosphere from the cooling tower plume. The cooling tower is a hybrid two-cell system, with forced draught fans and drift eliminators to minimise water losses to the plume.

The main emissions to air are carbon dioxide, carbon monoxide and oxides of nitrogen (NOx) from the combustion of natural gas. Emissions of NOx are minimised by the use of the dry, low emissions (DLE) burner system. Carbon monoxide emissions are minimised through appropriate burner control to maximise combustion efficiency. Carbon dioxide emissions and its impact are minimised through maximising energy efficiency of the plant. Emissions of carbon monoxide and NOx are monitored using the continuous emissions monitoring system installed which is capable of measuring emissions from both the main and the by-pass stack.

Emissions to water are via the cooling tower pond to the canal discharge point at grid reference SJ 37282 36303. The quality of the purged water is monitored for pH, residual available chlorine, temperature and suspended solids.

Any surface water passes through the site storm drains which go through an interceptor.

There are no emissions to sewer.

There are no direct emissions to land. Waste arisings include spent lubricating oils, gas turbine compressor blade wash liquor, oil filters and cooling tower pond silt, which are sent for off-site recovery or disposal.

The Operator has an externally certified Environmental Management System to the ISO 14001 standard.

Purpose of variation EPR/BS5371IZ/V005

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

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

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

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

The Operator has chosen to operate this LCP under the Transitional National Plan (TNP) compliance route. For the parameters specified under the TNP the Operator is required to achieve IED standards by no later than June 2020. 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 variation notice uses an updated LCP number in accordance with the most recent Defra reference numbers. The LCP reference has changed as follows:

- LCP168 is changed to LCP118.

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

Status log of the permit		
Description	**Date**	**Comments**
Application BS5371IZ (A001) Received	20/12/04	
Response by operator to notice dated 29/04/05 requiring further information	24/05/05	
Albion Chemicals announce in June 2005 closure of the chloralkali production facility from November 2005		
Additional application information Received	12/09/05	Revised sulphur emission data

Status log of the permit		
Description	**Date**	**Comments**
Additional application information Received	08/11/05	Revised installation boundary drawing
Permit BS5371IZ determined	20/12/05	Issued
Variation notice QP3832LG (V002)	19/06/06	Issued: Boiler water operational changes
Variation notice EA/EPR/BS5371IZ/V003	24/11/08	Issued: water discharge monitoring and control changes
Variation determined EPR/BS5371IZ/V004	11/03/13	Environment Agency Initiated Variation, to incorporate Eel Regulations improvement condition.
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	27/03/15	Response received from the Operator.
Additional information received	15/06/15	Response to request for further information (RFI) dated 12/05/15
Additional information received	08/12/15	Air quality assessment for 1500 hour Limited Hours Derogation compliance route justification in response to email dated 30/09/15
Variation determined EPR/BS5371IZ/V005 (PAS Billing ref: HP3938AB)	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/BS5371IZ

Issued to

E.ON UK Cogeneration Limited ("the operator")

whose registered office is

Westwood Way
Westwood Business Park
Coventry
CV4 8LG

company registration number **2730697**

to operate a regulated facility at

Sandbach Power Installation
Booth Lane
Elworth
Sandbach
Cheshire
CW11 3PZ

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/BS5371IZ

This is the consolidated permit referred to in the variation and consolidation notice for application EPR/BS5371IZ/V005 authorising,

E.ON UK Cogeneration Limited ("the operator"),

whose registered office is

Westwood Way
Westwood Business Park
Coventry
CV4 8LG

company registration number **2730697**

to operate an installation at

Sandbach Power Installation
Booth Lane
Elworth
Sandbach
Cheshire
CW11 3PZ

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.

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 blue 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 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 activities referenced in schedule 1, table S1.1: LCP118 (CCGT mode) and LCP118 (OCGT mode); 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

2.3.6 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.

2.3.7 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 and S3.2.

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

3.1.3 Total annual emissions from the emission point(s) 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 and S3.2.

3.5.2 The operator shall maintain records of all monitoring required by this permit including records of the taking and analysis of samples, instrument measurements (periodic and continuous), calibrations, examinations, tests and surveys and any assessment or evaluation made on the basis of such data.

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

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

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

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

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

(a) within 28 days of becoming aware of this fact, review the causes of the invalidations and submit to the Environment Agency for approval, proposals for measures to improve the reliability of the continuous measurement systems, including a timetable for the implementation of those measures; and

(b) implement the approved proposals.

3.6.3 Continuous measurement systems on emission points from the LCP shall be subject to quality control by means of parallel measurements with reference methods at least once every calendar year.

3.6.4 Unless otherwise agreed in writing by the Environment Agency in accordance with condition 3.6.5 below, the operator shall carry out the methods, including the reference measurement methods, to

use and calibrate continuous measurement systems in accordance with the appropriate CEN standards.

3.6.5 If CEN standards are not available, ISO standards, national or international standards which will ensure the provision of data of an equivalent scientific quality shall be used, as agreed in writing with the Environment Agency.

3.6.6 Where required by a condition of this permit to check the measurement equipment, the operator shall submit a report to the Environment Agency in writing, within 28 days of the completion of the check.

3.6.7 Where Continuous Emission Monitors are installed to comply with the monitoring requirements in schedule 3, table S3.1; the Continuous Emission Monitors shall be used such that:

- 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;
- the 95% confidence interval for nitrogen oxides of a single measured result shall be taken to be 20%;
- the 95% confidence interval for carbon monoxide releases of a single measured result shall be taken to be 10%;
- 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
- 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) for the following activity referenced in schedule 1, table S1.1: LCP118 (OCGT mode), the hours of operation in any year.

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

(a) in respect of the parameters and emission points specified in schedule 4 table S4.1;

(b) for the reporting periods specified in schedule 4 table S4.1 and using the forms specified in schedule 4 table S4.4; and

(c) giving the information from such results and assessments as may be required by the forms specified in those tables.

4.2.4 The operator shall, unless notice under this condition has been served within the preceding four years, submit to the Environment Agency, within six months of receipt of a written notice, a report assessing whether there are other appropriate measures that could be taken to prevent, or where that is not practicable, to minimise pollution.

4.2.5 For the following activities referenced in schedule 1, table S1.1: LCP118. 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 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 "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.	LCP118 (CCGT mode): Operation of a combined cycle gas turbine power plant (CCGT) burning gas to produce electricity. Net rated thermal input of 102.2 MWth.	Receipt of natural gas from the national transmission system (NTS) to supply of electricity to the regional transmission network.
	LCP118 (OCGT mode): Operation of an open cycle 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.
Directly Associated Activity		
Directly associated activity	Surface water drainage	Handling and storage of site drainage until discharge to the site surface water system.
Directly associated activity	Water treatment	From receipt of raw materials to dispatch to chemical effluent and dirty water system.
Directly associated activity	Waste storage and handling	Handling and storage of wastes on site to despatch off site for recovery or disposal.

Table S1.2 Operating techniques		
Description	Parts	Date Received
Application for permit BS5371IZ	The response to questions B2.1 and B2.2 given in sections 2.1 and 2.2 of the Application	20/12/04
	The response to the Notice Requiring Further Information, dated 29/04/05	27/05/05
Application for variation (V002)	Application for variation (15/05/06) and associated supplementary information (12/06/06) during commissioning and on completion of the described changes	19/05/06 16/06/06
Response to regulation 60(1) Notice – request for information dated 09/12/14	Compliance routes and operating techniques identified in response to questions 2 (compliance route), 4 (plant configuration), 5 (net rated thermal input), 6 (MSUL/MSDL), 9 (proposed ELVs) and 11 (monitoring requirements).	27/03/15
Receipt of additional information to the regulation 60(1) Notice. requested by letter dated 12/05/15	Compliance routes and operating techniques identified in response to questions 4 (plant configuration), 5 (net rated thermal input), 6 (MSUL/MSDL), 9 (proposed ELVs),	15/06/15
Receipt of additional information to the regulation 60(1) Notice.	Confirmation of the compliance route chosen for LCP118	21/12/15

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IC1 (formerly 1)	The Operator shall, in relation to containment of hazardous substances and the prevention of fugitive emissions, implement a formal scheme of registration, inspection and maintenance for: a) sub-surface pipework, vessels and sumps; b) surfacing and bunds; and c) above ground tanks and associated pipework.	Complete
IC2 (formerly 2)	The Operator shall carry out a review of: a) the environment impact of oxides of nitrogen emissions from the CCGT plant resulting from the "two-shifting" operation, in respect of the predicted ground level concentrations over short term averaging periods (1 hour and 24 hour); b) the justification for periods of open cycle operation on the CCGT plant, taking into account the reduced energy efficiency, the frequency and intervals of operation in this mode; and c) submit a written report to the Agency summarising the review.	Complete
IC3 (formerly 3)	The Operator shall implement measures to monitor and record suspended solids (turbidity) in the cooling water intake from the canal abstraction, providing continuous daily averaging capability.	Complete
IC4 (formerly 4)	The Operator shall incorporate a documented site closure plan into its management system, having regard to guidance in section 2.11 of the Agency's Sector Guidance Note - Combustion Activities.	Complete
IC5 (formerly 5)	The Operator shall submit proposals, with timescales for implementing measures for independent continuous monitoring of stack gas flow rates in respect of emission points A1 and A2.	Complete
IC6 (formerly 6)	The Operator shall: a) review the suitability of monitoring methods used against applicable standard methods in respect emissions to water and transfers to the on-site effluent treatment plant from emission points W1 {table 2.2.5} and E1 {table 2.13.2} of the permit respectively; and b) submit a written report to the Agency summarising the review, with proposals and timescales, if appropriate, for implementation of identified improvements.	Complete
IC7 (formerly 7)	The Operator shall: a) review application of the Agency's MCERT scheme in relation to emissions monitoring performance standards, in particular, provision of certified continuous emissions monitors for carbon monoxide and oxides of nitrogen; and b) submit a written report to the Agency summarising the review, with proposals and timescales, if appropriate, for implementation of identified improvements.	Complete
IC8 (formerly 8)	The Operator shall: a) review the performance of the Continuous Emission Monitors for release points A1 and A2 (as specified in Table 2.2.2 of the Permit), against the requirements of BS EN 14181; and b) submit a written report to the Agency summarising the reviews, with proposals and timescales, if appropriate, for implementation of identified improvements to achieve compliance with the requirements of BS EN 14181.	Complete

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IC9 (formerly 9)	The Operator shall undertake a review of the existing screening measures at the intakes and outfalls which provide and discharge water to and from the Installation. The review shall be undertaken with reference to the Eels (England and Wales) Regulations 2009 (SI 2009/3344) and the Environment Agency ''Safe Passage of Eel'' Regulatory Position Statement version 1 dated July 2012. The Operator shall submit details of the arrangement suitable to meet the requirements for the safe passage of eels [of the Eels (England and Wales) Regulations 2009 (SI 2009/3344)] by either:- • Providing a written proposal for the installation of an eel screen. • Providing a written proposal to the modification of existing screening arrangements. • 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. • Providing a written response setting out a case for an exemption 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. 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. The proposals shall be implemented in accordance with the Environment Agency's written approval.	Complete
IC10	For LCPD LCP168 (now LCP118 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 LPCD LCP was a NERP plant the final quarter submissions shall be provided on the RTA 1 form to the NERP Registry.	28/01/16

Table S1.4 Start-up and Shut-down thresholds		
Emission Point and Unit Reference	**Minimum start up load**	**Minimum shut-down load**
	Load in MW and as percent of rated power output (%) [1]	**Load in MW and as percent of rated power output (%) [1]**
LCP118: A1, A2	29 MWe; 70%	29 MWe; 70%

Note [1]: Gas turbine rated electrical output.

Schedule 2 – Waste types, raw materials and fuels

Table S2.1 Raw materials and fuels	
Raw materials and fuel description	**Specification**
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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, Emission point ref. & location	**Parameter**	**Limits [1]**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
LCP118 (CCGT mode) and LCP118 (OCGT mode): Gas turbine fired on natural gas; emitting via A1, A2	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	60 mg/m^3	Monthly mean of validated hourly averages	Continuous	BS EN 14181
		60 mg/m^3	95% of validated daily means within a calendar year	Continuous	BS EN 14181
		90 mg/m^3	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
	Carbon Monoxide	50 mg/m^3	Monthly mean of validated hourly averages	Continuous	BS EN 14181
		50 mg/m^3	Daily mean of validated hourly averages	Continuous	BS EN 14181
		75 mg/m^3	95% of validated hourly averages within a calendar year	Continuous	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	-	-		
	Stack gas temperature	-	-		Traceable to national standards
	Stack gas pressure	-	-		
	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

Note [1]: These limits do not apply during start up or shut down

Table S3.2 Point Source emissions to water (other than sewer) – emission limits and monitoring requirements					
Source, Emission point ref. & location	**Parameter**	**Limit**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
LCP118 cooling water purge, neutralised boiler blowdown water, and Reverse Osmosis plant discharge via W1 at NGR 37282 36303	Total suspended solids [1]	35 mg/l	--	Continuous	Turbidity, traceable to CEN or National standards
	pH	6-9	Instantaneous	Continuous	BS 1647-2
	Flow	600 m^3 per day	24 hour period beginning 00.01	Continuous	Traceable to CEN or National standards
	Available chlorine	1 mg/l	Daily average maximum value	Continuous	Traceable to CEN or National standards
	Temperature (maximum)	28 ^oC	--	Continuous	Traceable to CEN or National standards

Note [1]: For daily average values for the discharge of greater than 35 mg/l, compliance with the emission limit requirement shall be taken to have been achieved if the measured value does not exceed the sum of [3.0 x {canal intake value} + 10], expressed as mg/l.

Table S3.4 Annual limits (excluding start up and shut down except where otherwise stated).				
Substance	**Medium**	**Limit (including unit)**		**Emission Points**
Oxides of nitrogen	Air	Assessment year	LCP TNP Limit	LCP118
		01/01/16 and subsequent years until 31/12/19 and 01/01/20-30/06/20	Emission allowance figure shown in the TNP Register as at 30 April the following year	

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	Every 3 months	1 January, 1 April, 1 July, 1 October
Sulphur dioxide	A1, A2	Every 6 months	1 January, 1 July
Emissions to water Parameters as specified in Table S3.2	W1	Every 6 months	1 January, 1 July

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	h

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	01/01/16	National	31/12/15
Air [1]	Form IED RTA1 – TNP quarterly emissions summary log	01/01/16	National	31/12/15
Air [1]	Form IED PM1 – discontinuous monitoring and load.	01/01/16	Area Office	31/12/15
LCP [1]	Form IED HR1 – operating hours	01/01/16	National	31/12/15
Air [1]	Form IED CON 2 – continuous monitoring (Gas Turbines Only)	01/01/16	Area Office	31/12/15
CEMs [1]	Form IED CEM – Invalidation Log	01/01/16	Area Office	31/12/15
Resource Efficiency [1]	Form REM1 – resource efficiency annual report	01/01/16	National	31/12/15
Water [2]	Form W1 or other form as agreed in writing by the Environment Agency	01/01/16	Area Office	31/12/15

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.

“CEN” means Commité 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.

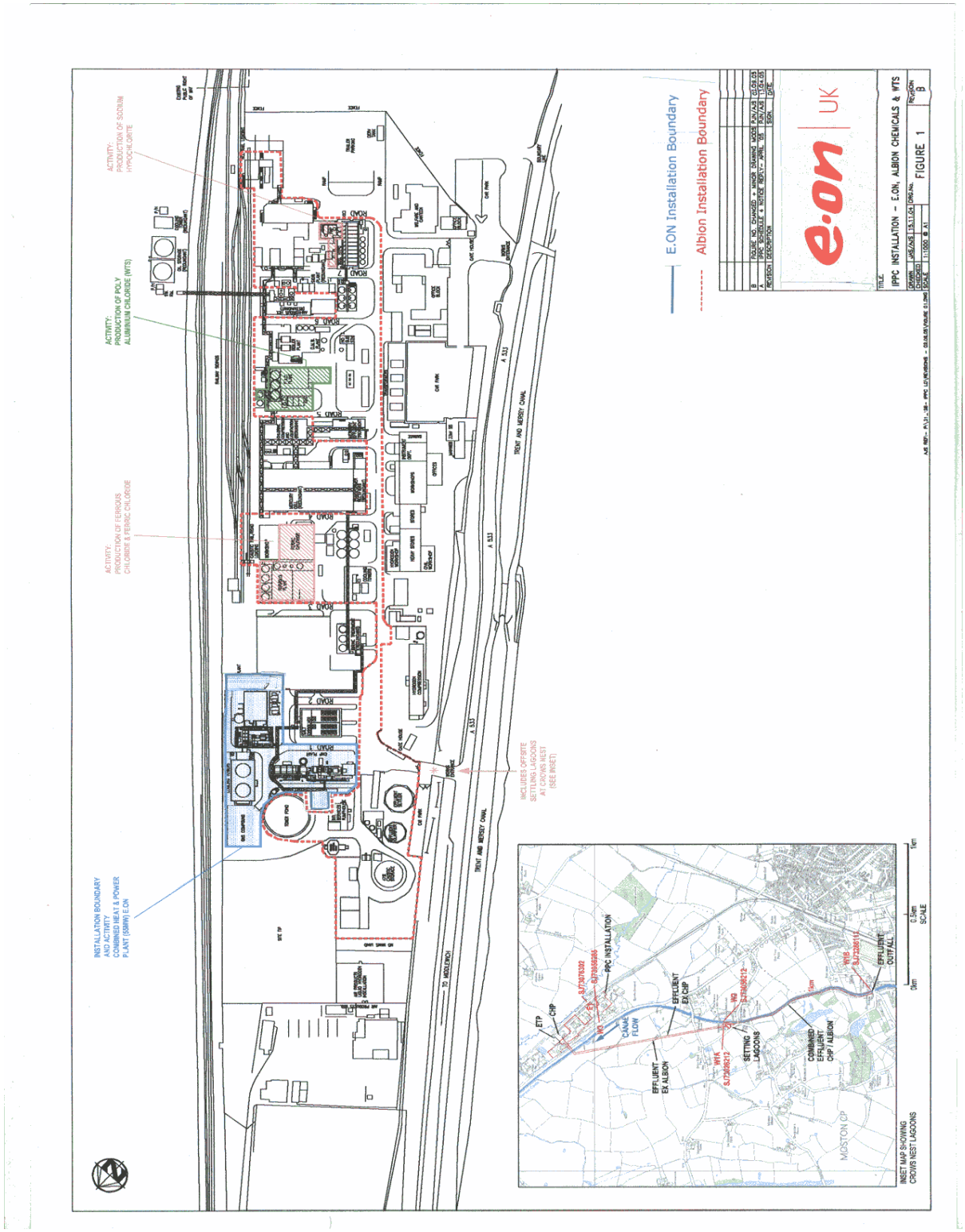
“TNP Register” means the register maintained by the Environment Agency in accordance with regulation 4 of the Large Combustion Plants (Transitional National Plan) Regulations 2015 SI2015 No.1973.

“Year” means calendar year ending 31 December.

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 the gas turbine, the concentration in dry air at a temperature of 273K, at a pressure of 101.3 kPa and with an oxygen content of 15% dry for gaseous fuels.

Schedule 7 – Site plan



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