Notice of variation and consolidation with introductory note

The Environmental Permitting (England & Wales) Regulations 2010

Uniper UK Limited

Killingholme Power Station
Chase Hill Road
North Killingholme
North East Lincolnshire
DN40 3LU

Variation application number

EPR/VP3933RJ/V002

Permit number

EPR/VP3933RJ

Killingholme Power Station
Permit number EPR/VP3933RJ

Introductory note

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

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

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

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

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

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

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

The net thermal input of the LCP(s) are as follows: LCP 108, LCP 109, LCP 110 AND LCP 111 each consist of one 446 MWth combined cycle gas turbine (CCGT).

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

- LCP 159 is changed to LCP 108;
- LCP 160 is changed to LCP 109;
- LCP 161 is changed to LCP 110 and
- LCP 162 is changed to LCP 111.

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

E.ON Killingholme Power Station is located on the south bank of the Humber Estuary, approximately 5 km north-west of Immingham Dock to the east of the villages of East Halton and North Killingholme. The site covers an area of 43 hectares and is centred on NGR 515371 418965. There are SSSI within 2 km and Natura 2000 sites within 10 km of the installation as follows:

- North Killingholme Haven Pits, Humber Estuary – 1 km away
- Humber Flats, Marshes and Coast SPA and Ramsar – 4.2 km away

The installation comprises two combined cycle gas turbine modules, each consisting of two 150 MW(e) gas turbines with associated heat recovery steam generators and a single 150 MW(e) steam turbine. Each module has a gross baseload output of 456 MW(e). Each gas turbine has a thermal input of 446 MW. All the gas turbines are fitted with dry low NOx burners. Both modules can operate in either open cycle mode where the waste gases are emitted directly to atmosphere through four separate 33 m high bypass stacks, or in combined cycle where the waste gases pass through the heat recovery steam generators before being emitted to atmosphere through four separate 76 m high stacks.

There is also a 7.8 MW auxiliary boiler and two hybrid cooling towers on the site.

There is one emission point to water. Cooling water purge including boiler blowdown, neutralised effluent from the filtration/ion exchange water treatment plant and surface water run-off are discharged to the Humber Estuary. Surface water from the buildings passes through oil interceptors prior to release. Uncontaminated rainwater is collected in the rainwater collection pit prior to release. This pit can be isolated via a valve in the event of contamination.

The installation is not inherently odorous. There are no odour generating activities or processes within the installation and there are no known odour problems.

The installation is located in an area with other industrial processes. Background noise around the installation is dominated by the nearby petrochemical sites. There have been no substantiated noise complaints received within the last 3 years.

There is an Environmental Management System in place which is externally accredited to ISO14001.

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 SP3233LQ	Duly made 06/03/06	
Request to extend determination period	29/09/06	Response date 04/10/06
Permit determined (EPR/SP3233LQ)	29/12/06	
Variation WP3832UJ (EPR/SP3233LQ/V002)	Duly made 20/06/07	
Variation determined WP3832UJ (EPR/SP3233LQ/V002)	08/04/08	
Variation determined EPR/SP3233LQ/V003	11/03/13	Environment Agency Initiated Variation, to incorporate Eel Regulations improvement condition.
Variation determined EPR/SP3233LQ/V004	Issued 29/09/14	Environment Agency Initiated Variation, to add an improvement condition requiring a cost benefit appraisal to ensure compliance with the Eels Regulations. Effective 1/10/14.
Application EPR/VP3933RJ/V002 (full transfer of permit EPR/SP3233LQ)	Duly made 09/07/2015	Application to transfer the permit in full to Uniper UK Limited.
Transfer determined EPR/VP3933RJ	26/08/2015	Full transfer of permit complete.
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	30/06/15	Response to request for further information (RFI) dated 05/06/15.

Status log of the permit		
Description	**Date**	**Comments**
Variation determined EPR/VP3933RJ/V002 (PAS Billing ref: HP3532RJ)	24/12/15	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/VP3933RJ

Issued to

Uniper UK Limited ("the operator")

whose registered office is

Westwood Way
Westwood Business Park
Coventry
CV4 8LG

company registration number 2796628

to operate a regulated facility at

Killingholme Power Station
Chase Hill Road
North Killingholme
North East Lincolnshire
DN40 3LU

to the extent set out in the schedules.

The notice shall take effect from 01/01/2016

Name	Date
Anne Nightingale	**24/12/2015**

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/VP3933RJ

This is the consolidated permit referred to in the variation and consolidation notice for application EPR/VP3933RJ/V002 authorising,

Uniper UK Limited ("the operator"),

whose registered office is

Westwood Way
Westwood Business Park
Coventry
CV4 8LG

company registration number 2796628

to operate an installation at

Killingholme Power Station
Chase Hill Road
North Killingholme
North East Lincolnshire
DN40 3LU

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

Name	Date
Anne Nightingale	**24/12/2015**

Authorised on behalf of the Environment Agency

Conditions

1 Management

1.1 General management

1.1.1 The operator shall manage and operate the activities:

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

(b) using sufficient competent persons and resources.

1.1.2 Records demonstrating compliance with condition 1.1.1 shall be maintained.

1.1.3 Any person having duties that are or may be affected by the matters set out in this permit shall have convenient access to a copy of it kept at or near the place where those duties are carried out.

1.2 Energy efficiency

1.2.1 The operator shall:

(a) take appropriate measures to ensure that energy is used efficiently in the activities;

(b) take appropriate measures to ensure the efficiency of energy generation at the permitted installation is maximised;

(c) review and record at least every four years whether there are suitable opportunities to improve the energy efficiency of the activities; and

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

1.3 Efficient use of raw materials

1.3.1 The operator shall:

(a) take appropriate measures to ensure that raw materials and water are used efficiently in the activities;

(b) maintain records of raw materials and water used in the activities;

(c) review and record at least every four years whether there are suitable alternative materials that could reduce environmental impact or opportunities to improve the efficiency of raw material and water use; and

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

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

1.4.1 The operator shall take appropriate measures to ensure that:

(a) the waste hierarchy referred to in Article 4 of the Waste Framework Directive is applied to the generation of waste by the activities;

(b) any waste generated by the activities is treated in accordance with the waste hierarchy referred to in Article 4 of the Waste Framework Directive; and

(c) where disposal is necessary, this is undertaken in a manner which minimises its impact on the environment.

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

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: LCP 108, LCP 109, LCP 110 and LCP 111. 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: LCP 108, LCP 109, LCP 110 and LCP 111. 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.

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 S3.1and S3.2.

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

3.1.3 Total annual emissions from the LCP emission points set out in schedule 3 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 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.

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

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

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

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

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

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

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

(a) for the continuous measurement systems fitted to the LCP release points defined in Table S3.1 the validated hourly, monthly and daily averages shall be determined from the measured valid hourly average values after having subtracted the value of the 95% confidence interval;

(b) the 95% confidence interval for nitrogen oxides and sulphur dioxide of a single measured result shall be taken to be 20%;

(c) the 95% confidence interval for dust releases of a single measured result shall be taken to be 30%;

(d) the 95% confidence interval for carbon monoxide releases of a single measured result shall be taken to be 10%;

(e) an invalid hourly average means an hourly average period invalidated due to malfunction of, or maintenance work being carried out on, the continuous measurement system. However, to allow some discretion for zero and span gas checking, or cleaning (by flushing), an hourly average period will count as valid as long as data has been accumulated for at least two thirds of the period (40 minutes). Such discretionary periods are not to exceed more than 5 in any one 24-hour period unless agreed in writing. Where plant may be operating for less than the 24-hour period, such discretionary periods are not to exceed more than one quarter of the overall valid hourly average periods unless agreed in writing; and

(f) any day, in which more than three hourly average values are invalid shall be invalidated.

4 Information

4.1 Records

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

(a) be legible;

(b) be made as soon as reasonably practicable;

(c) if amended, be amended in such a way that the original and any subsequent amendments remain legible, or are capable of retrieval; and

(d) be retained, unless otherwise agreed in writing by the Environment Agency, for at least 6 years from the date when the records were made, or in the case of the following records until permit surrender:

(i) off-site environmental effects; and

(ii) matters which affect the condition of the land and groundwater.

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

4.2 Reporting

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

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

(a) a review of the results of the monitoring and assessment carried out in accordance with the permit including an interpretive review of that data;

(b) the resource efficiency metrics set out in schedule 4 table S4.2;

(c) the performance parameters set out in schedule 4 table S4.3 using the forms specified in table S4.4 of that schedule and

(d) where condition 2.3.5 applies the hours of operation in any year.

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

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

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

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

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

4.3 Notifications

4.3.1 In the event:

(a) that the operation of the activities gives rise to an incident or accident which significantly affects or may significantly affect the environment, the operator must immediately—

(i) inform the Environment Agency,

(ii) take the measures necessary to limit the environmental consequences of such an incident or accident, and

(iii) take the measures necessary to prevent further possible incidents or accidents;

(b) of a breach of any permit condition the operator must immediately—

(i) inform the Environment Agency, and

(ii) take the measures necessary to ensure that compliance is restored within the shortest possible time;

(c) of a breach of permit condition which poses an immediate danger to human health or threatens to cause an immediate significant adverse effect on the environment, the operator must immediately suspend the operation of the activities or the relevant part of it until compliance with the permit conditions has been restored.

4.3.2 Any information provided under condition 4.3.1 (a)(i), 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 reference	**Activity listed in Schedule 1 of the EP Regulations**	**Description of specified activity**	**Limits of specified activity**
A1	Section 1.1 A(1) (a): Burning any fuel in an appliance with a rated thermal input of 50 megawatts or more.	LCP108:Unit GT 11 The operation of a Gas Turbine in Combined Cycle mode or Open Cycle Gas mode with a net rated thermal input of 446MW fired on natural gas for the generation of electricity. LCP 109:Unit GT 12 The operation of a Gas Turbine in Combined Cycle mode or Open Cycle Gas mode with a net rated thermal input of 446MW fired on natural gas for the generation of electricity. LCP 110:Unit GT 21 The operation of a Gas Turbine in Combined Cycle mode or Open Cycle Gas mode with a net rated thermal input of 446MW fired on natural gas for the generation of electricity. LCP 111:Unit GT 22 The operation of a Gas Turbine in Combined Cycle mode or Open Cycle Gas mode with a net rated thermal input of 446MW fired on natural gas for the generation of electricity. One 7.5 MW auxiliary boiler operating on natural gas with gas oil as standby.	From receipt of natural gas and gas oil to discharge of exhaust gases and wastes and the generation of electricity. From receipt of natural gas and gas oil to discharge of exhaust gases and wastes and the generation of steam.
	Directly Associated Activity		
A2	Oil storage	Fuel and lubricating oil storage	From receipt of raw materials to dispatch for use.
A3	Surface water drainage	Drainage of surface water into the Humber estuary.	Handling and storage of site drainage until discharge to the Humber estuary.

Table S1.1 activities			
Activity reference	**Activity listed in Schedule 1 of the EP Regulations**	**Description of specified activity**	**Limits of specified activity**
A4	Water treatment.	Filtration and ion exchange water treatment.	From receipt of raw materials to dispatch of chemical effluent and dirty water system.
A5	Miscellaneous utilities.	Miscellaneous utility systems (including emergency diesel generator, lubrication system and control systems)	From receipt of raw materials to dispatch for use.

Table S1.2 Operating techniques		
Description	**Parts**	**Date Received**
Application	The response to section 2.1 in the application	06/03/06
Response to regulation 60(1) Notice – request for information dated 31/10/14	Compliance routes and operating techniques identified in response to questions 2 (Compliance route), 4 (Configuration), 5 (Net rated thermal input), 6 (Minimum start up load and minimum shut down load), 9 (Proposed ELVs), 10 (Use of standby fuel on LCP), 11 (Monitoring requirements). Excluding compliance route ELV and LHD for LCP108, LCP109, LCP 110 and LCP 111. and related operating techniques	27/03/15
Receipt of additional information to the regulation 60(1) Notice. requested by letter dated 05/06/15	Compliance route(s) and operating techniques identified in response to questions 5 (Net rated thermal input), 6 (Minimum start up load and minimum shut down load),9 (Proposed ELVs).	Received 30/06/15
Receipt of additional information to the regulation 60(1) Notice.	Confirmation of the compliance routes chosen for LCP108, LCP109, LCP 110 and LCP 111	Received 15/12/15

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IC1	The Operator shall submit a report to the Agency summarising an improvement programme to achieve the requirements of sections 2.2.5 and 2.2.9 of IPPC Sector Guidance Note Combustion Activities to prevent potential fugitive emissions to ground from: • Bunding of fuel tank for emergency diesel generator • Sealing of containment kerbs around chemical delivery area A copy of the written report, including corrective actions and timescales shall be submitted to the Agency. The corrective actions shall be implemented from the date of approval in writing by the Agency.	Completed

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IC2	The Operator shall undertake a review of the Accident Management Plan in accordance with the requirements of section 2.8 of Combustion Technical Guidance Note as defined in Schedule 7 of the permit. The review shall include but not be limited to: • Inclusion of guidance as to the action to be taken in the event of an accident/incident A copy of the revised plan shall be submitted to the Agency.	Completed
IC3	A written report shall be submitted for the approval of the Agency summarising the results of a BPEO assessment of disposal of all waste arising from the installation. The report shall include a justification for each waste disposal route chosen and a timescale for the implementation of any actions identified. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the report. Any actions identified shall be implemented by the operator from the date of approval in writing by the Agency.	Completed
IC4	The operator shall carry out a waste minimisation audit in accordance with section 2.4.2 of the Combustion Technical Guidance Note as defined in Schedule 7 of the permit. A written report of the audit shall be submitted to the Agency and shall include a plan for completion of any improvements identified. Where appropriate the plan shall contain dates for the implementation of individual measures. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the report. The plan shall be implemented by the operator from the date of approval in writing by the Agency.	Completed
IC5	A written procedure shall be submitted to the Agency detailing the measures to be used so that monitoring equipment, personnel and organisations employed for the emissions monitoring programme shall have either MCERTS certification or accreditation in accordance with condition 3.6.3. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the procedure. The procedure shall be implemented by the operator from the date of approval in writing by the Agency.	Completed
IC6	A written Site Closure Plan shall be submitted to the Agency for approval to comply with the requirements of section 2.11 of the Combustion Technical Guidance Note as defined in schedule 7 of the permit.	Completed
IC7	The operator shall carry out a water efficiency audit in accordance with section 2.4.3 of the Combustion Technical Guidance Note as defined in Schedule 7 of the permit. A written report of the audit shall be submitted to the Agency and shall include a plan for completion of any improvements identified. Where appropriate the plan shall contain dates for the implementation of individual measures. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the report. The plan shall be implemented by the operator from the date of approval in writing by the Agency.	Completed
IC8	The operator shall install HR3 low-NOx burners to each of the gas turbines as described in the application. A written report summarising the works carried out shall be submitted to the Agency.	Completed

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IC9	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.	Completed

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IC10	The Operator has undertaken a review of the existing screening arrangements with reference to the Eels (England and Wales) Regulations 2009 (SI 2009/3344) and the Environment Agency ''Safe Passage for Eel'' Regulatory Position Statement version 1 dated July 2012 (and as amended February 2013) in response to Improvement Programme reference IC9. The Environment Agency has determined that the site does not comply with the requirements for safe passage of eel and the Operator is now required to complete a cost benefits appraisal of best available technique with reference to the Environment Agency ''Safe Passage for Eel: Guidance on Exemptions'' as a screening tool. a) If the Cost Benefit Assessment shows that the Benefits are greater than the costs by a factor of 1.5 or more, then the Operator shall submit to the Environment Agency for review a report setting out the costs and the technical and economic feasibility to introduce the improvements to achieve best available technique. b) If the Cost Benefit Assessment shows that the Benefits are not greater than the costs by a factor of 1.5 or more, then the Operator shall, with reference to the Environment Agency ''Safe Passage for Eel: Guidance on exemptions, assess which alternative measure, or combination of alternative measures, could be implemented under a case of a conditioned Exemption. The Operator shall submit a report to the Environment Agency setting out the costs and the technical and economic feasibility of implementing their proposed alternative measure or measures. In all cases, the submission shall contain relevant timescales in accordance with the Safe Passage for Eel Regulatory Position Statement version 1 dated July 2012 (as amended 2013). The proposals shall be implemented following written approval of the Environment Agency. Whilst undertaking this Improvement Condition, the Operator shall be operating under exemption from the requirements to place eel screen diversion structures pursuant to Regulation 17(5)(a) of the Eels (England and Wales) Regulations 2009. The exemption will remain in place until the Environment Agency has provided written approval that the Improvement Condition has been deemed complete.	Received on 24/06/15, under assessment by the Environment Agency
IC 11	For LCPD LCP159, LCP160, LCP161 and LCP 162 (now LCP108, LCP109, LCP110 and LCP111 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
IC12	The Operator shall submit a report in writing to the Environment Agency which includes an assessment of the proposed ELVs for Oxides of Nitrogen for the IED Chapter III '1,500 hours derogation' compliance route. The report shall also include:- a. A review of the proposed ELVs and any amendment to those proposed ELVs based upon this assessment. b. A Best Available Technique (BAT) justification for the setting of the resulting ELVs, this should include site specific assessments. With reference to the Environment Agency's Horizontal Guidance Note 1, a revised site specific air impact assessment utilising the proposed monthly ELV for the long term impact and the 95 percentile ELV for the short term impact.	31/03/16

Table S1.4 Start-up and Shut-down thresholds		
Emission Point and Unit Reference	**“Minimum Start-Up Load” Load in MW and as percent of rated power output (%)**	**“Minimum Shut-Down Load”**
A1 LCP 108 GT11 HRSG stack	105 MW; 70%	90 MW; 60%
A3 LCP 109 GT 12 HRSG stack	105 MW; 70%	90 MW; 60%
A5 LCP 110 GT 21 HRSG stack	105 MW; 70%	90 MW; 60%
A7 LCP 111 GT 22 HRSG stack	105 MW; 70%	90 MW; 60%
A2 LCP 108 GT11 Bypass stack	105 MW; 70%	90 MW; 60%
A4 LCP 109 GT 12 Bypass stack	105 MW; 70%	90 MW; 60%
A6 LCP 110 GT 21 Bypass stack	105 MW; 70%	90 MW; 60%
A8 LCP 111 GT 22 Bypass stack	105 MW; 70%	90 MW; 60%

Schedule 2 – Waste types, raw materials and fuels

Table S2.1 Raw materials and fuels	
Raw materials and fuel description	**Specification**
Natural gas	-
Gas oil	Not exceeding 0.1% w/w sulphur content
Water treatment plant chemicals	Discharges of Mercury as a result of the impurities of raw materials used in the water treatment plant shall be controlled by ensuring that impurity levels are the minimum available in the commercial product.
Water treatment plant chemicals	Discharges of Cadmium as a result of the impurities of raw materials used in the water treatment plant shall be controlled by ensuring that impurity levels are the minimum available in the commercial product.

Schedule 3 – Emissions and monitoring

Table S3.1 Point source emissions to air						
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit)-these limits do not apply during start up or shut down.**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A1 Gas turbine 11 boiler stack	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	LCP No. 108 Gas turbine fired on natural gas	60 mg/m^3 70% to base load[1]	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A1 Gas turbine 11 boiler stack	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	LCP No. 108 Gas turbine fired on natural gas	66 mg/m^3 70% to base load 83 mg/m^3 MSUL/MSDL to base load	95% of validated daily means within a calendar year	Continuous	BS EN 14181
A1 Gas turbine 11 boiler stack	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	LCP No. 108 Gas turbine fired on natural gas	120 mg/m^3 70% to base load[1]	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A1 Gas turbine 11 boiler stack	Carbon Monoxide	LCP No. 108 Gas turbine fired on natural gas	100 mg/m^3 70% to base load[1]	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A1 Gas turbine 11 boiler stack	Carbon Monoxide	LCP No. 108 Gas turbine fired on natural gas	110 mg/m^3 70% to base load[1] 110 mg/m^3 MSUL/MSDL to base load	95% of validated daily means within a calendar year	Continuous	BS EN 14181
A1 Gas turbine 11 boiler stack	Carbon Monoxide	LCP No. 108 Gas turbine fired on natural gas	200 mg/m^3 70% to base load	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A1 Gas turbine 11 boiler stack	Sulphur dioxide	LCP No. 108 Gas turbine fired on natural gas	-	-	At least every 6 months	Concentration by calculation, as agreed in writing with the Environment Agency

Table S3.1 Point source emissions to air						
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit)-these limits do not apply during start up or shut down.**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A1 Gas turbine 11 boiler stack	Oxygen	LCP No. 108 Gas turbine fired on natural gas	-	-	Continuous As appropriate to reference	BS EN 14181
A1 Gas turbine 11 boiler stack	Water Vapour	LCP No. 108 Gas turbine fired on natural gas	-	-	Continuous As appropriate to reference	BS EN 14181
A1 Gas turbine 11 boiler stack	Stack gas temperature	LCP No. 108 Gas turbine fired on natural gas	-	-	Continuous As appropriate to reference	Traceable to national standards
A1 Gas turbine 11 boiler stack	Stack gas pressure	LCP No. 108 Gas turbine fired on natural gas	-	-	Continuous As appropriate to reference	Traceable to national standards
A1 Gas turbine 11 boiler stack	Stack Gas Volume Flow	LCP No. 108 Gas turbine fired on natural gas	-	-	Continuous	BS EN 16911 & TGN M2
A1 Gas turbine 11 boiler stack	As required by the Method Implementation Document for BS EN 15259	LCP No. 108 Gas turbine fired on natural gas	-	-	Pre-operation and when there is a significant operational change	BS EN 15259
A2 Gas turbine 11 bypass stack	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	LCP No. 108 Gas turbine fired on natural gas	60 mg/m^3 70% to base load[1]	Monthly mean of validated hourly averages	Continuous	BS EN 14181

Table S3.1 Point source emissions to air						
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit)-these limits do not apply during start up or shut down.**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A2 Gas turbine 11 bypass stack	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	LCP No. 108 Gas turbine fired on natural gas	66 mg/m^3 70% to base load 83 mg/m^3 MSUL/MSDL to base load	95% of validated daily means within a calendar year	Continuous	BS EN 14181
A2 Gas turbine 11 bypass stack	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	LCP No. 108 Gas turbine fired on natural gas	120 mg/m^3 70% to base load[1]	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A2 Gas turbine 11 bypass stack	Carbon Monoxide	LCP No. 108 Gas turbine fired on natural gas	100 mg/m^3 70% to base load[1]	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A2 Gas turbine 11 bypass stack	Carbon Monoxide	LCP No. 108 Gas turbine fired on natural gas	110 mg/m^3 70% to base load[1] 110 mg/m^3 MSUL/MSDL to base load	95% of validated daily means within a calendar year	Continuous	BS EN 14181
A2 Gas turbine 11 bypass stack	Carbon Monoxide	LCP No. 108 Gas turbine fired on natural gas	200 mg/m^3 70% to base load	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A2 Gas turbine 11 bypass stack	Sulphur dioxide	LCP No. 108 Gas turbine fired on natural gas	-	-	At least every 6 months	Concentration by calculation, as agreed in writing with the Environment Agency
A2 Gas turbine 11 bypass stack	Oxygen	LCP No. 108 Gas turbine fired on natural gas	-	-	Continuous As appropriate to reference	BS EN 14181

Table S3.1 Point source emissions to air						
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit)-these limits do not apply during start up or shut down.**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A2 Gas turbine 11 bypass stack	Water Vapour	LCP No. 108 Gas turbine fired on natural gas	-	-	Continuous As appropriate to reference	BS EN 14181
A2 Gas turbine 11 bypass stack	Stack gas temperature	LCP No. 108 Gas turbine fired on natural gas	-	-	Continuous As appropriate to reference	Traceable to national standards
A2 Gas turbine 11 bypass stack	Stack gas pressure	LCP No. 108 Gas turbine fired on natural gas	-	-	Continuous As appropriate to reference	Traceable to national standards
A2 Gas turbine 11 bypass stack	Stack Gas Volume Flow	LCP No. 108 Gas turbine fired on natural gas	-	-	Continuous	BS EN 16911 & TGN M2
A2 Gas turbine 11 bypass stack	As required by the Method Implementation Document for BS EN 15259	LCP No. 108 Gas turbine fired on natural gas	-	-	Pre-operation and when there is a significant operational change	BS EN 15259
A3 Gas turbine 12 boiler stack	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	LCP No. 109 Gas turbine fired on natural gas	60 mg/m^3 70% to base load[1]	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A3 Gas turbine 12 boiler stack	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	LCP No. 109 Gas turbine fired on natural gas	66 mg/m^3 70% to base load 83 mg/m^3 MSUL/MSDL to base load	95% of validated daily means within a calendar year	Continuous	BS EN 14181

Table S3.1 Point source emissions to air						
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit)-these limits do not apply during start up or shut down.**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A3 Gas turbine 12 boiler stack	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	LCP No. 109 Gas turbine fired on natural gas	120 mg/m^3 70% to base load[1]	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A3 Gas turbine 12 boiler stack	Carbon Monoxide	LCP No. 109 Gas turbine fired on natural gas	100 mg/m^3 70% to base load[1]	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A3 Gas turbine 12 boiler stack	Carbon Monoxide	LCP No. 109 Gas turbine fired on natural gas	110 mg/m^3 70% to base load[1] 110 mg/m^3 MSUL/MSDL to base load	95% of validated daily means within a calendar year	Continuous	BS EN 14181
A3 Gas turbine 12 boiler stack	Carbon Monoxide	LCP No. 109 Gas turbine fired on natural gas	200 mg/m^3 70% to base load	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A3 Gas turbine 12 boiler stack	Sulphur dioxide	LCP No. 109 Gas turbine fired on natural gas	-	-	At least every 6 months	Concentration by calculation, as agreed in writing with the Environment Agency
A3 Gas turbine 12 boiler stack	Oxygen	LCP No. 109 Gas turbine fired on natural gas	-	-	Continuous As appropriate to reference	BS EN 14181
A3 Gas turbine 12 boiler stack	Water Vapour	LCP No. 109 Gas turbine fired on natural gas	-	-	Continuous As appropriate to reference	BS EN 14181

Table S3.1 Point source emissions to air						
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit)-these limits do not apply during start up or shut down.**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A3 Gas turbine 12 boiler stack	Stack gas temperature	LCP No. 109 Gas turbine fired on natural gas	-	-	Continuous As appropriate to reference	Traceable to national standards
A3 Gas turbine 12 boiler stack	Stack gas pressure	LCP No. 109 Gas turbine fired on natural gas	-	-	Continuous As appropriate to reference	Traceable to national standards
A3 Gas turbine 12 boiler stack	Stack Gas Volume Flow	LCP No. 109 Gas turbine fired on natural gas	-	-	Continuous	BS EN 16911 & TGN M2
A3 Gas turbine 12 boiler stack	As required by the Method Implementation Document for BS EN 15259	LCP No. 109 Gas turbine fired on natural gas	-	-	Pre-operation and when there is a significant operational change	BS EN 15259
A4 Gas turbine 12 bypass stack	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	LCP No. 109 Gas turbine fired on natural gas	60 mg/m^3 70% to base load[1]	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A4 Gas turbine 12 bypass stack	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	LCP No. 109 Gas turbine fired on natural gas	66 mg/m^3 70% to base load 83 mg/m^3 MSUL/MSDL to base load	95% of validated daily means within a calendar year	Continuous	BS EN 14181
A4 Gas turbine 12 bypass stack	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	LCP No. 109 Gas turbine fired on natural gas	120 mg/m^3 70% to base load[1]	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181

Table S3.1 Point source emissions to air						
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit)-these limits do not apply during start up or shut down.**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A4 Gas turbine 12 bypass stack	Carbon Monoxide	LCP No. 109 Gas turbine fired on natural gas	100 mg/m^3 70% to base load[1]	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A4 Gas turbine 12 bypass stack	Carbon Monoxide	LCP No. 109 Gas turbine fired on natural gas	110 mg/m^3 70% to base load[1] 110 mg/m^3 MSUL/MSDL to base load	95% of validated daily means within a calendar year	Continuous	BS EN 14181
A4 Gas turbine 12 bypass stack	Carbon Monoxide	LCP No. 109 Gas turbine fired on natural gas	200 mg/m^3 70% to base load	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A4 Gas turbine 12 bypass stack	Sulphur dioxide	LCP No. 109 Gas turbine fired on natural gas	-	-	At least every 6 months	Concentration by calculation, as agreed in writing with the Environment Agency
A4 Gas turbine 12 bypass stack	Oxygen	LCP No. 109 Gas turbine fired on natural gas	-	-	Continuous As appropriate to reference	BS EN 14181
A4 Gas turbine 12 bypass stack	Water Vapour	LCP No. 109 Gas turbine fired on natural gas	-	-	Continuous As appropriate to reference	BS EN 14181
A4 Gas turbine 12 bypass stack	Stack gas temperature	LCP No. 109 Gas turbine fired on natural gas	-	-	Continuous As appropriate to reference	Traceable to national standards

Table S3.1 Point source emissions to air						
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit)-these limits do not apply during start up or shut down.**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A4 Gas turbine 12 bypass stack	Stack gas pressure	LCP No. 109 Gas turbine fired on natural gas	-	-	Continuous As appropriate to reference	Traceable to national standards
A4 Gas turbine 12 bypass stack	Stack Gas Volume Flow	LCP No. 109 Gas turbine fired on natural gas	-	-	Continuous	BS EN 16911 & TGN M2
A4 Gas turbine 12 bypass stack	As required by the Method Implementation Document for BS EN 15259	LCP No. 109 Gas turbine fired on natural gas	-	-	Pre-operation and when there is a significant operational change	BS EN 15259
A5 Gas turbine 21 boiler stack	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	LCP No. 110 Gas turbine fired on natural gas	60 mg/m^3 70% to base load[1]	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A5 Gas turbine 21 boiler stack	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	LCP No. 110 Gas turbine fired on natural gas	66 mg/m^3 70% to base load 83 mg/m^3 MSUL/MSDL to base load	95% of validated daily means within a calendar year	Continuous	BS EN 14181
A5 Gas turbine 21 boiler stack	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	LCP No. 110 Gas turbine fired on natural gas	120 mg/m^3 70% to base load[1]	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A5 Gas turbine 21 boiler stack	Carbon Monoxide	LCP No. 110 Gas turbine fired on natural gas	100 mg/m^3 70% to base load[1]	Monthly mean of validated hourly averages	Continuous	BS EN 14181

Table S3.1 Point source emissions to air						
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit)-these limits do not apply during start up or shut down.**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A5 Gas turbine 21 boiler stack	Carbon Monoxide	LCP No. 110 Gas turbine fired on natural gas	110 mg/m^3 70% to base load[1] 110 mg/m^3 MSUL/MSDL to base load	95% of validated daily means within a calendar year	Continuous	BS EN 14181
A5 Gas turbine 21 boiler stack	Carbon Monoxide	LCP No. 110 Gas turbine fired on natural gas	200 mg/m^3 70% to base load	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A5 Gas turbine 21 boiler stack	Sulphur dioxide	LCP No. 110 Gas turbine fired on natural gas	-	-	At least every 6 months	Concentration by calculation, as agreed in writing with the Environment Agency
A5 Gas turbine 21 boiler stack	Oxygen	LCP No. 110 Gas turbine fired on natural gas	-	-	Continuous As appropriate to reference	BS EN 14181
A5 Gas turbine 21 boiler stack	Water Vapour	LCP No. 110 Gas turbine fired on natural gas	-	-	Continuous As appropriate to reference	BS EN 14181
A5 Gas turbine 21 boiler stack	Stack gas temperature	LCP No. 110 Gas turbine fired on natural gas	-	-	Continuous As appropriate to reference	Traceable to national standards
A5 Gas turbine 21 boiler stack	Stack gas pressure	LCP No. 110 Gas turbine fired on natural gas	-	-	Continuous As appropriate to reference	Traceable to national standards

Table S3.1 Point source emissions to air						
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit)-these limits do not apply during start up or shut down.**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A5 Gas turbine 21 boiler stack	Stack Gas Volume Flow	LCP No. 110 Gas turbine fired on natural gas	-	-	Continuous	BS EN 16911 & TGN M2
A5 Gas turbine 21 boiler stack	As required by the Method Implementation Document for BS EN 15259	LCP No. 110 Gas turbine fired on natural gas	-	-	Pre-operation and when there is a significant operational change	BS EN 15259
A6 Gas turbine 21 bypass stack	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	LCP No. 110 Gas turbine fired on natural gas	60 mg/m^3 70% to base load[1]	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A6 Gas turbine 21 bypass stack	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	LCP No. 110 Gas turbine fired on natural gas	66 mg/m^3 70% to base load 83 mg/m^3 MSUL/MSDL to base load	95% of validated daily means within a calendar year	Continuous	BS EN 14181
A6 Gas turbine 21 bypass stack	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	LCP No. 110 Gas turbine fired on natural gas	120 mg/m^3 70% to base load[1]	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A6 Gas turbine 21 bypass stack	Carbon Monoxide	LCP No. 110 Gas turbine fired on natural gas	100 mg/m^3 70% to base load[1]	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A6 Gas turbine 21 bypass stack	Carbon Monoxide	LCP No. 110 Gas turbine fired on natural gas	110 mg/m^3 70% to base load[1] 110 mg/m^3 MSUL/MSDL to base load	95% of validated daily means within a calendar year	Continuous	BS EN 14181

Table S3.1 Point source emissions to air						
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit)-these limits do not apply during start up or shut down.**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A6 Gas turbine 21 bypass stack	Carbon Monoxide	LCP No. 110 Gas turbine fired on natural gas	200 mg/m^3 70% to base load	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A6 Gas turbine 21 bypass stack	Sulphur dioxide	LCP No. 110 Gas turbine fired on natural gas	-	-	At least every 6 months	Concentration by calculation, as agreed in writing with the Environment Agency
A6 Gas turbine 21 bypass stack	Oxygen	LCP No. 110 Gas turbine fired on natural gas	-	-	Continuous As appropriate to reference	BS EN 14181
A6 Gas turbine 21 bypass stack	Water Vapour	LCP No. 110 Gas turbine fired on natural gas	-	-	Continuous As appropriate to reference	BS EN 14181
A6 Gas turbine 21 bypass stack	Stack gas temperature	LCP No. 110 Gas turbine fired on natural gas	-	-	Continuous As appropriate to reference	Traceable to national standards
A6 Gas turbine 21 bypass stack	Stack gas pressure	LCP No. 110 Gas turbine fired on natural gas	-	-	Continuous As appropriate to reference	Traceable to national standards
A6 Gas turbine 21 bypass stack	Stack Gas Volume Flow	LCP No. 110 Gas turbine fired on natural gas	-	-	Continuous	BS EN 16911 & TGN M2

Table S3.1 Point source emissions to air						
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit)-these limits do not apply during start up or shut down.**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A6 Gas turbine 21 bypass stack	As required by the Method Implementation Document for BS EN 15259	LCP No. 110 Gas turbine fired on natural gas	-	-	Pre-operation and when there is a significant operational change	BS EN 15259
A7 Gas turbine 22 boiler stack	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	LCP No. 111 Gas turbine fired on natural gas	60 mg/m^3 70% to base load[1]	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A7 Gas turbine 22 boiler stack	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	LCP No. 111 Gas turbine fired on natural gas	66 mg/m^3 70% to base load 83 mg/m^3 MSUL/MSDL to base load	95% of validated daily means within a calendar year	Continuous	BS EN 14181
A7 Gas turbine 22 boiler stack	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	LCP No. 111 Gas turbine fired on natural gas	120 mg/m^3 70% to base load[1]	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A7 Gas turbine 22 boiler stack	Carbon Monoxide	LCP No. 111 Gas turbine fired on natural gas	100 mg/m^3 70% to base load[1]	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A7 Gas turbine 22 boiler stack	Carbon Monoxide	LCP No. 111 Gas turbine fired on natural gas	110 mg/m^3 70% to base load[1] 110 mg/m^3 MSUL/MSDL to base load	95% of validated daily means within a calendar year	Continuous	BS EN 14181
A7 Gas turbine 22 boiler stack	Carbon Monoxide	LCP No. 111 Gas turbine fired on natural gas	200 mg/m^3 70% to base load	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181

Table S3.1 Point source emissions to air						
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit)-these limits do not apply during start up or shut down.**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A7 Gas turbine 22 boiler stack	Sulphur dioxide	LCP No. 111 Gas turbine fired on natural gas	-	-	At least every 6 months	Concentration by calculation, as agreed in writing with the Environment Agency
A7 Gas turbine 22 boiler stack	Oxygen	LCP No. 111 Gas turbine fired on natural gas	-	-	Continuous As appropriate to reference	BS EN 14181
A7 Gas turbine 22 boiler stack	Water Vapour	LCP No. 111 Gas turbine fired on natural gas	-	-	Continuous As appropriate to reference	BS EN 14181
A7 Gas turbine 22 boiler stack	Stack gas temperature	LCP No. 111 Gas turbine fired on natural gas	-	-	Continuous As appropriate to reference	Traceable to national standards
A7 Gas turbine 22 boiler stack	Stack gas pressure	LCP No. 111 Gas turbine fired on natural gas	-	-	Continuous As appropriate to reference	Traceable to national standards
A7 Gas turbine 22 boiler stack	Stack Gas Volume Flow	LCP No. 111 Gas turbine fired on natural gas	-	-	Continuous	BS EN 16911 & TGN M2
A7 Gas turbine 22 boiler stack	As required by the Method Implementation Document for BS EN 15259	LCP No. 111 Gas turbine fired on natural gas	-	-	Pre-operation and when there is a significant operational change	BS EN 15259

Table S3.1 Point source emissions to air						
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit)-these limits do not apply during start up or shut down.**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A8 Gas turbine 22 bypass stack	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	LCP No. 111 Gas turbine fired on natural gas	60 mg/m^3 70% to base load[1]	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A8 Gas turbine 22 bypass stack	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	LCP No. 111 Gas turbine fired on natural gas	66 mg/m^3 70% to base load 83 mg/m^3 MSUL/MSDL to base load	95% of validated daily means within a calendar year	Continuous	BS EN 14181
A8 Gas turbine 22 bypass stack	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	LCP No. 111 Gas turbine fired on natural gas	120 mg/m^3 70% to base load[1]	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A8 Gas turbine 22 bypass stack	Carbon Monoxide	LCP No. 111 Gas turbine fired on natural gas	100 mg/m^3 70% to base load[1]	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A8 Gas turbine 22 bypass stack	Carbon Monoxide	LCP No. 111 Gas turbine fired on natural gas	110 mg/m^3 70% to base load[1] 110 mg/m^3 MSUL/MSDL to base load	95% of validated daily means within a calendar year	Continuous	BS EN 14181
A8 Gas turbine 22 bypass stack	Carbon Monoxide	LCP No. 111 Gas turbine fired on natural gas	200 mg/m^3 70% to base load	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A8 Gas turbine 22 bypass stack	Sulphur dioxide	LCP No. 111 Gas turbine fired on natural gas	-	-	At least every 6 months	Concentration by calculation, as agreed in writing with the Environment Agency

Table S3.1 Point source emissions to air						
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit)-these limits do not apply during start up or shut down.**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A8 Gas turbine 22 bypass stack	Oxygen	LCP No. 111 Gas turbine fired on natural gas	-	-	Continuous As appropriate to reference	BS EN 14181
A8 Gas turbine 22 bypass stack	Water Vapour	LCP No. 111 Gas turbine fired on natural gas	-	-	Continuous As appropriate to reference	BS EN 14181
A8 Gas turbine 22 bypass stack	Stack gas temperature	LCP No. 111 Gas turbine fired on natural gas	-	-	Continuous As appropriate to reference	Traceable to national standards
A8 Gas turbine 22 bypass stack	Stack gas pressure	LCP No. 111 Gas turbine fired on natural gas	-	-	Continuous As appropriate to reference	Traceable to national standards
A8 Gas turbine 22 bypass stack	Stack Gas Volume Flow	LCP No. 111 Gas turbine fired on natural gas	-	-	Continuous	BS EN 16911 & TGN M2
A8 Gas turbine 22 bypass stack	As required by the Method Implementation Document for BS EN 15259	LCP No. 111 Gas turbine fired on natural gas	-	-	Pre-operation and when there is a significant operational change	BS EN 15259
A9 Auxiliary boiler stack	No parameters set	Auxiliary boiler	-	-	-	No permanent sampling access required.
A10 Station fuel gas vent pipe	No parameters set	Station fuel gas vent pipe	-	-	-	No permanent sampling access required.

Table S3.1 Point source emissions to air						
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit)-these limits do not apply during start up or shut down.**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
Miscellaneous process and building vents	No parameters set	-	-	-	-	No permanent sampling access required.

Note 1: This ELV applies when the load is >70% for the duration of the sampling period.

Table S3.2 Point Source emissions to water (other than sewer) – emission limits and monitoring requirements						
Emission point ref. & location	**Parameter**	**Source**	**Limit (incl. unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
W1 emission to Humber Estuary	Total daily volume	Purge pit	60,000 m^3/d	24 hour period beginning 00.01	Continuous	Not applicable
W1 emission to Humber Estuary	Hourly flow	Purge pit	3,960 m^3/hr	Hourly	Continuous	Not applicable
W1 emission to Humber Estuary	Temperature	Purge pit	30^oC	Instantaneous	Continuous	Not applicable
W1 emission to Humber Estuary	pH	Purge pit	6-9	Instantaneous	Continuous	BS6068-2.50
W1 emission to Humber Estuary	Total oxidant (as chlorine)	Purge pit	0.5 mg/l	24 hour period beginning 00.01	Continuous	BS6068-2.27
W1 emission to Humber Estuary	Oil or grease	Purge pit	No visible emission	24-hour flow proportional sample	Daily	Visual inspection

Table S3.3 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	LCP108 LCP109 LCP110 LCP111
		01/01/16 and subsequent years until 31/12/19 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, A3, A5, A7.	Every 3 months	1 January, 1 April, 1 July, 1 October
Oxides of nitrogen	A2, A4, A6, A8.	Every 2 years	1 January
Carbon Monoxide	A1, A3, A5, A7.	Every 3 months	1 January, 1 April, 1 July, 1 October
Carbon monoxide	A2, A4, A5, A8.	Every 2 years	1 January
Sulphur dioxide	A1, A3, A5, A7	Every 3 months	1 January, 1 April, 1 July, 1 October
Sulphur dioxide	A2, A4, A5, A8.	Every 2 years	1 January
Emissions to Water Parameters as required by condition 3.5.1	W1	Every 3 months	1 January, 1 April, 1 July, 1 October

Table S4.2: Resource Efficiency Metrics	
Parameter	**Units**
Electricity Exported	GWhr
Heat Exported	GWhr
Mechanical Power Provided	GWhr
Fossil Fuel Energy Consumption	GWhr
Non-Fossil Fuel Energy Consumption	GWhr
Annual Operating Hours	hr
Water Abstracted from Fresh Water Source	m^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	Form IED AR1 – SO_2, NO_x and dust mass emission and energy	01/01/16	National	31/12/15
Air	Form IED RTA1 –TNP quarterly emissions summary log	01/01/16	National	31/12/15
LCP	Form IED HR1 – operating hours	01/01/16	National	31/12/15
Air	Form IED CON 2 – continuous monitoring	01/01/16	Area Office	31/12/15
CEMs	Form IED CEM – Invalidation Log	01/01/16	Area Office	31/12/15
Resource Efficiency	Form REM1 – resource efficiency annual report	01/01/16	National	31/12/15
Water	Form water 1 or other form as agreed in writing by the Environment Agency	01/01/16	Area Office	31/12/15

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.

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

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

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

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

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

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

"CEN" means Commité Européen de Normalisation.

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

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

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

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

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

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

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

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

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

"MCR" means maximum continuous rating.

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

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

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

“ncv” means net calorific value.

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

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

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

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

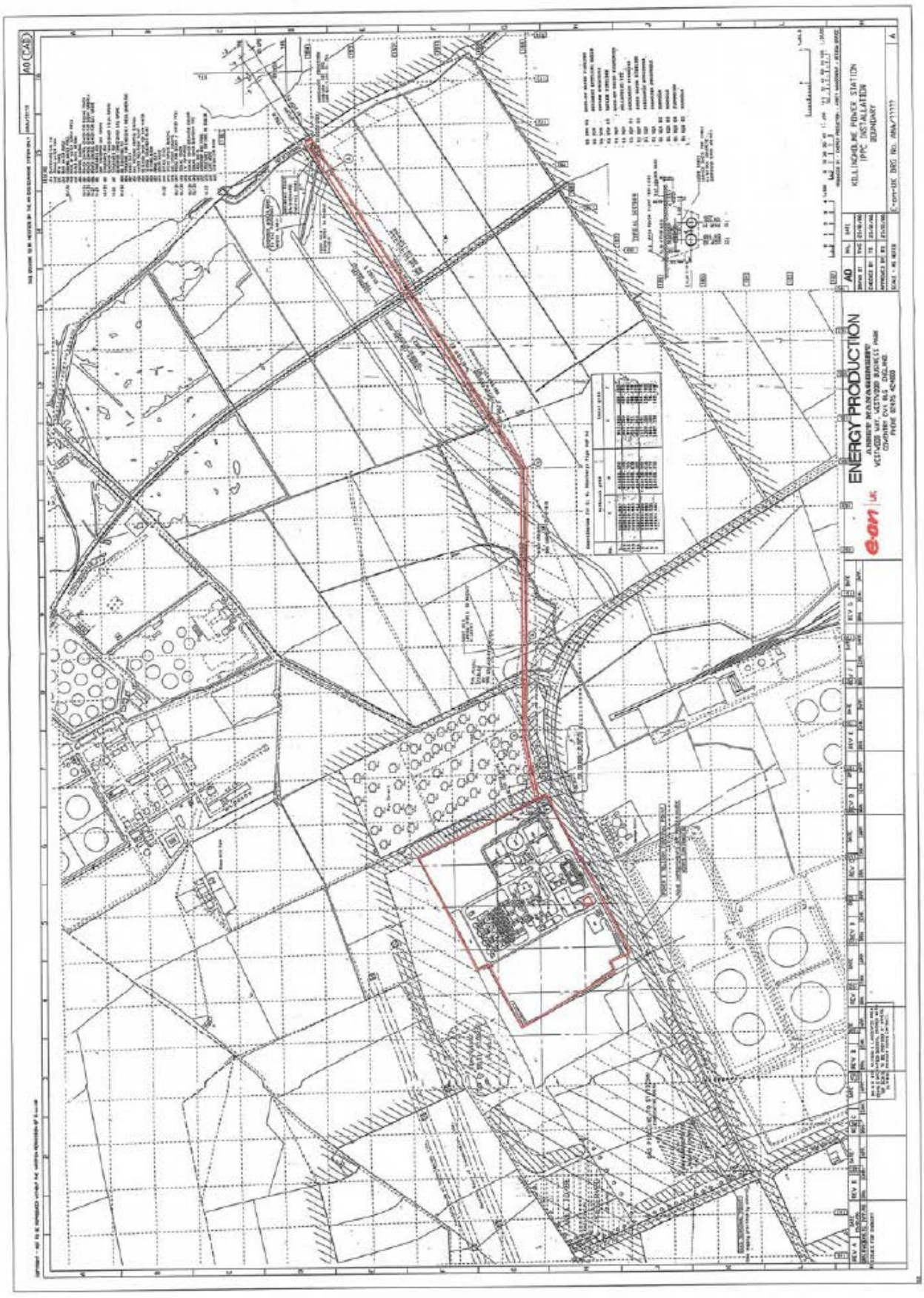
Where a minimum limit is set for any emission parameter, for example pH, reference to exceeding the limit shall mean that the parameter shall not be less than that limit.

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

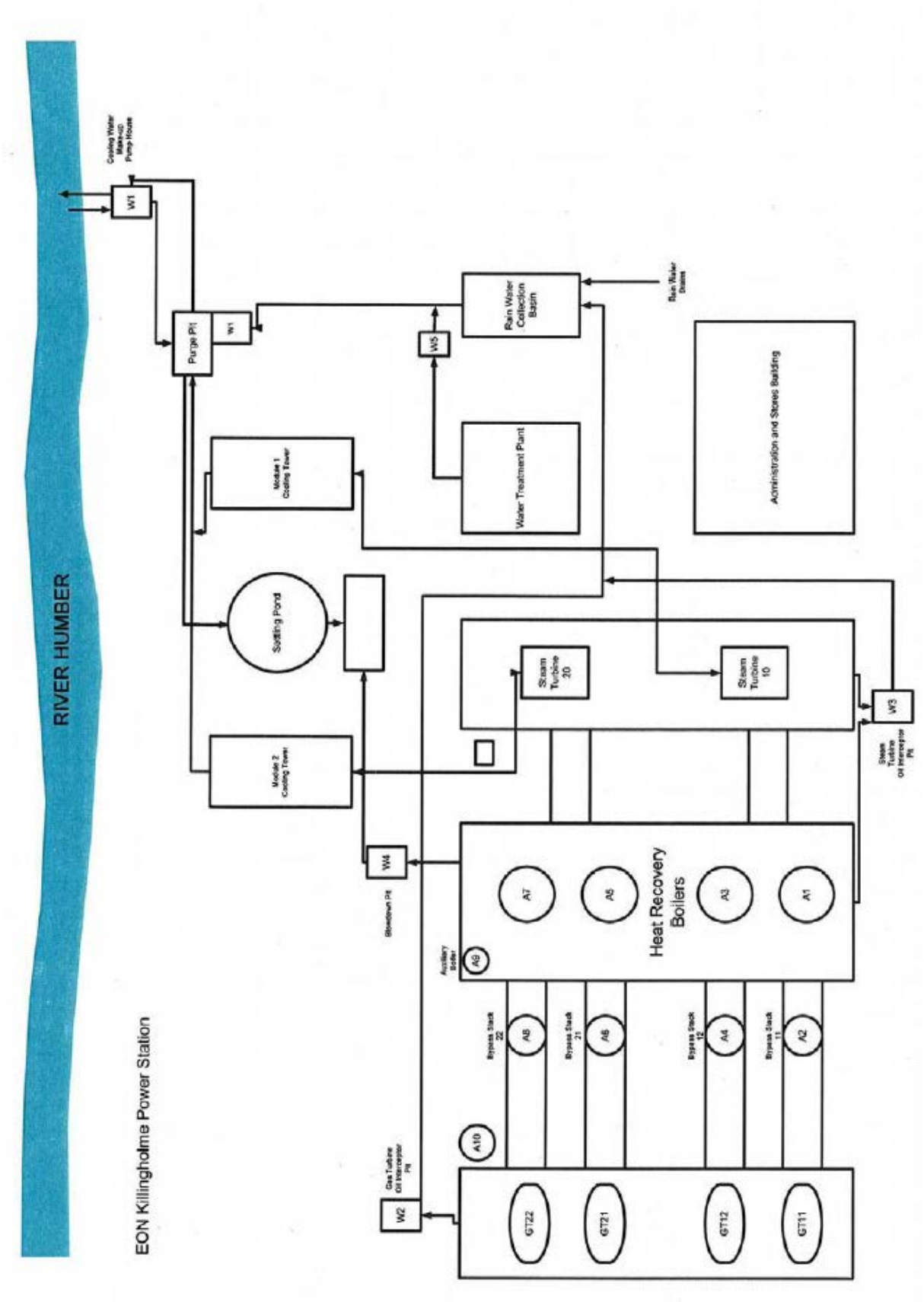
- in relation to emissions from combustion processes, the concentration in dry air at a temperature of 273K, at a pressure of 101.3 kPa and with an oxygen content of 3% dry for liquid and gaseous fuels, 6% dry for solid fuels; and/or
- in relation to emissions from gas turbine or compression ignition engine combustion processes, the concentration in dry air at a temperature of 273K, at a pressure of 101.3kPa and with an oxygen content of 15% dry for liquid and gaseous fuels; and/or
- in relation to emissions from combustion processes comprising a gas turbine with a waste heat boiler, the concentration in dry air at a temperature of 273K, at a pressure of 101.3kPa and with an oxygen content of 15% dry, unless the waste heat boiler is operating alone, in which case, with an oxygen content of 3% dry for liquid and gaseous fuels; and/or
- in relation to emissions from non-combustion sources, the concentration at a temperature of 273K and at a pressure of 101.3 kPa, with no correction for water vapour content.

“year” means calendar year ending 31 December.

Schedule 7 – Site plan



Plan showing emission points



END OF PERMIT