Notice of variation and consolidation with introductory note

The Environmental Permitting (England & Wales) Regulations 2016

Keadby Generation Limited

Keadby Power Station
Trentside
Keadby
Scunthorpe
DN17 3EF

Variation application number

EPR/YP3133LL/V010

Permit number

EPR/YP3133LL

Keadby Power Station
Permit number EPR/YP3133LL

Introductory note

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

Under the Environmental Permitting (England & Wales) Regulations 2016 (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 2 of the notice comprises a consolidated permit which reflects the variations being made. All the conditions of the permit have been varied and are subject to the right of appeal.

This is a substantial variation comprising of the addition of a new power plant, and its ancillary requirements. The new plant will be referred to as Keadby 2, see below for details.

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

Keadby Site

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

Keadby 1

The main operational processes at Keadby 1 consists of two General Electric 9FA 03 gas turbines (245MWe each) fitted with dry low NO_x burners. Each gas turbine exhausts through a heat recovery boiler with the combined steam output passing to the condensing steam turbine (nominal capacity of 260MW). The windshields for the 2 x Combined Cycle Gas Turbine (CCGT) stacks are 60m and the 2 x OCGT stacks are 47m. All electrical capacity is exported to the National Grid less the parasitic station load of nominally 12MW. Total thermal input for the gas turbines and steam turbine is approximately 1,339MW (LHV).

These gas turbines have the DEFRA LCP reference numbers LCP202 and LCP203.

A standalone auxiliary gas turbine of 25MW (75MW thermal input) operates in open cycle mode, with a windshield of 50m and provides additional supply to the grid during high demand periods and for main plant start up during 'black start' conditions. An auxiliary gas boiler of approximately 2MW provides steam for gland sealing and plant start up. This gas turbine has the DEFRA LCP reference number LCP204.

Keadby 2

The main operational processes at Keadby 2 consist of 1 x gas turbine unit with an output capacity of up to 610MWe, 1 x heat recovery steam generator of approximately 710MWth and 1 x steam turbine unit of approximately 300MWe. The total thermal input for the gas turbines and steam turbine is approximately 1430MWth. The gas turbine exhausts through a heat recovery boiler which has an integrated Selective Catalytic Reduction (SCR) abatement system, with the steam output passing to the condensing steam turbine. The main stack is 75m in height, with 2 x smaller stacks associated with the emergency diesel generator and Gas Heaters. A maximum of 910MWe (gross) electrical capacity is exported the National Grid less the parasitic load of nominally 17MW.

The gas turbine has the DEFRA LCP reference number LCP682.

The following services will be shared with Keadby 1 power station:

- Shared utilities and control room (albeit separate desks)
- Common management systems
- Common operations maintenance, management and support services team
- Shared access point
- Common Water Treatment Plant (WTP) for boiler makeup water.

The schedules specify the changes made to the permit.

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

Status log of the permit		
Description	**Date**	**Comments**
Application EPR/YP3133LL/A001	Duly made 03/04/2006	
Additional information received		13/10/2006, 27/10/2006
Permit determined EPR/YP3133LL	21/06/2007	
Variation determined EPR/YP3133LL/V002	21/01/2010	Variation to correct errors, incorporate benchmark emission limits and update improvement conditions table.
Variation determined EPR/YP3133LL/V003	04/02/2010	Variation to correct errors, incorporate benchmark emission limits and update improvement conditions table.
Variation determined EPR/YP3133LL/V004	11/03/2013	Environment Agency initiated variation, to incorporate Eel Regulations improvement condition.
Variation determined EPR/YP3133LL/V005	Issued 29/09/2014	Environment Agency Initiated Variation, to add an improvement condition requiring a cost benefit appraisal to ensure compliance with the Eels Regulations. Effective 1/10/2014.
Regulation 60 Notice sent to the Operator	31/10/2014	Issue of a Notice under Regulation 60(1) of the EPR. Environment Agency Initiated review and variation to vary the permit under IED to implement the special provisions for LCP under Chapter III, introducing new Emission Limit Values (ELVs) applicable to LCP, referred to in Article 30(2) and set out in Annex V. The permit is also updated to modern conditions.
Regulation 60 Notice response	23/03/2015	Response to Notice under Regulation 60(1) of the EPR received from the Operator.
Additional information received	10/07/2015	Response to request for further information (RFI) dated 26/06/2015.

Status log of the permit		
Description	**Date**	**Comments**
Additional information received	05/11/2015	Response to request for further information (RFI) dated 05/11/2015 regarding water emission point and LCP204.
Additional information received	19/11/2015	Response to request for further information (RFI) dated 18/11/2015 requesting revised plan of emission points
Additional information received	27/11/2015	Response to the request for information (RFI) regarding MSUL/MSDL dated 18/11/15.
Additional information received	21/12/2015	Confirmation of compliance route (TNP) for LCPs. Letter dated 18/12/15.
Variation determined V006 (Billing ref: TP3234AE)	24/12/2015	Varied and consolidated permit issued in modern condition format. Variation effective from 01/01/16.
Regulation 61 Notice sent to the Operator	05/01/2018	Issue of a Notice under Regulation 61(1) of the EPR. Environment Agency initiated review and variation to vary the permit under IED to implement Chapter II following the publication of the revised Best Available Techniques (BAT) Reference Document for large combustion plant.
Regulation 61 Notice response.	30/10/2018	Response received from the Operator.
Part surrender application EPR/YP3133LL/S007	Duly made 11/01/2019	Application to surrender an area of unused land from the installing boundary, and removal of surface water emission W4.
Part surrender determined EPR/YP3133LL (Billing Ref: UP3603PH)	10/05/2019	Part surrender complete
Variation addition of dewatering discharge EPR/YP3133LL/V008	Duly made 13/09/2019	Addition of dewatering discharge
Variation determined EPR/YP3133L/V008 (Billing ref: RP3620PU)	11/10/2019	Variation determined
Variation determined EPR/YP3133LL/V009 (Billing ref: RP3602PU)	08/04/2020	LCPD review, varied and consolidated permit issued. Effective from 08/04/2020
Application for Variation EPR/YP3133LL/V010 (Billing ref: JP3105BL)	Duly made 02/12/2019	To add Keadby 2 turbine and associated utilities.
Request for Further Information	Received 27/08/2020	Supplementary Information Annex C, Air Quality Assessment.
Variation determined	20/11/2020	

Other Part A installation permits relating to this installation		
Operator	**Permit number**	**Date of issue**
National Grid	EPR/BP3438LD	20/12/2006

End of introductory note

The Environmental Permitting (England and Wales) Regulations 2016

The Environment Agency in exercise of its powers under regulation 20 of the Environmental Permitting (England and Wales) Regulations 2016 varies

Permit number

EPR/YP3133LL

Issued to

Keadby Generation Limited ("the operator")

whose registered office is

Keadby Power Station
Trentside
Keadby
Scunthorpe
DN17 3EF

company registration number 02729513

to operate a regulated facility at

Keadby Power Station
Trentside
Keadby
Scunthorpe
DN17 3EF

to the extent set out in the schedules.

The notice shall take effect from 20/11/2020

Name	Date
	20/11/2020

Authorised on behalf of the Environment Agency

Schedule 1

All conditions have been varied by the consolidated permit as a result of an application from the operator.

Schedule 2 – consolidated permit

Consolidated permit issued as a separate document.

Permit

The Environmental Permitting (England and Wales) Regulations 2016

Permit number

EPR/YP3133LL

This is the consolidated permit referred to in the variation and consolidation notice for application EPR/YP3133LL/V010 authorising,

Keadby Generation Limited ("the operator"),

whose registered office is

Keadby Power Station
Trentside
Keadby
Scunthorpe
DN17 3EF

company registration number 02729513

to operate a regulated facility at

Keadby Power Station
Trentside
Keadby
Scunthorpe
DN17 3EF

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

Name	Date
	20/11/2020

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.

1.2.2 The operator shall review the viability of Combined Heat and Power (CHP) implementation at least every 4 years, or in response to any of the following factors, whichever comes sooner:

(a) new plans for significant developments within 15 km of the installation;

(b) changes to the Local Plan;

(c) changes to the BEIS UK CHP Development Map or similar; and

(d) new financial or fiscal incentives for CHP.

The results shall be reported to the Agency within 2 months of each review, including where there has been no change to the original assessment in respect of the above factors.

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, but excluding the land edged/hashed in red and blue that is excluded from the permitted area.

2.3 Operating techniques

2.3.1 The activities shall, subject to the conditions of this permit, be operated using the techniques and in the manner described in the documentation specified in schedule 1, table S1.2, unless otherwise agreed in writing by the Environment Agency.

2.3.2 For the following activities referenced in schedule 1, table S1.1: LCP202, LCP203, LCP204 and LCP 682. The activities shall be operated in accordance with the "Electricity Supply Industry IED Compliance Protocol for Utility Boilers and Gas Turbines" dated December 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: LCP204. Standby fuel gas oil may be used but for no more than 500 hours per year.

2.3.6 For the following activities referenced in schedule 1, table S1.1: LCP202, LCP203 and LCP204 operating in open cycle mode. The activities shall operate for less than 1,500 hours per year as a rolling average over a period of five years with a maximum of 2,250 hours operated in any one year

in line with Section 4.0 of Version 5.1: The Protocol for IED Annex V 1500 Limited Hours Derogation July 2015 or any later version.

2.3.7 For the following activities referenced in schedule 1, table S1.1: LCP202, LCP203, LCP204 and LCP682. 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 S1.5.

2.3.8 For the following activities referenced in schedule 1, table S1.1: LCP202, LCP203 and LCP682. The effective Dry Low NOx threshold shall conform to the specifications set out in Schedule 1, tables S1.2 and S1.6.

2.3.9 The emission limit values from emission points A1, A2, A3 & A101 listed in tables S3.1a and S3.1b of Schedule 3 following the issue of a Black Start Instruction by the National Grid shall be disregarded for the purposes of compliance whilst that instruction remains effective and in accordance with the report submitted in response to improvement condition IC9 & IC12.

2.3.10 For the following activities referenced in schedule 1, table S1.1: LCP682. The following conditions apply where there is a malfunction or breakdown of any abatement equipment:

Unless otherwise agreed in writing by the Environment Agency:

(i) if a return to normal operations is not achieved within 24 hours, the operator shall reduce or close down operations;

(ii) the cumulative duration of breakdown in any 12-month period shall not exceed 120 hours; and

(iii) the cumulative duration of malfunction in any 12-month period shall not exceed 120 hours.

2.3.11 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.

2.3.12 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

2.5.1 The activities shall not be brought into operation until the measures specified in schedule 1 table S1.4 have been completed.

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 S3.1a, S3.1b, S3.2 and S3.3.

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

3.1.3 The emission values from emission point A101 listed in schedule 3 table S3.1a & S3.1b, measured during periods of abatement equipment malfunction and breakdown shall be disregarded for the purposes of compliance with Tables S3.1a and S3.1b emission limit values.

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 S3.1a, S3.1b, S3.2 and S3.3;

(b) process monitoring specified in table S3.4.

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

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

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

3.6 Monitoring for Large Combustion Plant

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 and the Large Combustion Plant Best Available Techniques Conclusions.

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's 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, tables S3.1a and S3.1b; the Continuous Emission Monitors shall be used such that:

(a) for the continuous measurement systems fitted to the LCP release points defined in tables S3.1a and S3.1b the validated hourly, monthly, yearly 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) the 95% confidence interval for ammonia of a single measured result shall be taken to be 40%;

(f) 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. 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

(g) 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.

(d) where conditions 2.3.5 apply the hours of operation in any year and

(e) where condition 2.3.9 applies, the cumulative duration of breakdown and cumulative duration of malfunction in any 12 month period.

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 Within 10 days of the notification of abatement equipment malfunction or breakdown (condition 2.3.10) the operator shall submit an Air Quality Risk Assessment as outlined in the IED Compliance Protocol (condition 2.3.2).

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.

(d) of any malfunction or breakdown of abatement equipment relating to condition 2.3.10, the operator shall notify the Environment Agency within 48 hours unless notification has already been made under (a) to (c) above.

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, or 4.3.1 (d) where the information relates to malfunction or breakdown of abatement equipment 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.

In any other case:

(e) the death of any of the named operators (where the operator consists of more than one named individual);

(f) any change in the operator's name(s) or address(es); and

(g) any steps taken with a view to the operator, or any one of them, going into bankruptcy, entering into a composition or arrangement with creditors, or, in the case of them being in a partnership, dissolving the partnership.

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**
AR1	Section 1.1 A(1) (a): Burning any fuel in an appliance with a rated thermal input of 50 megawatts or more.	**K1 –** LCP202 (combined cycle mode): The operation of a Combined Cycle Gas Turbine for the generation of electricity. LCP202 (open cycle mode): The operation of an Open Cycle Gas Turbine for the generation of electricity. LCP203: (combined cycle mode): The operation of a Combined Cycle Gas Turbine for the generation of electricity. LCP203 (open cycle mode): The operation of an Open Cycle Gas Turbine for the generation of electricity. LCP204: The operation of an Open Cycle Auxiliary Gas Turbine for the generation of electricity and for black start operation. AB01: The operation of an auxiliary gas boiler with a net rated thermal input of 2MW for gland sealing and at main start up periods. **K2** LCP682 The operation of a Combined Cycle Gas Turbine for the generation of electricity.	The operation of a gas fired power station comprising Keadby 1 from receipt of fuels as specified in Table S2.1 to discharge of exhaust gases and the generation of steam and electricity for export. From receipt, handling and on-site storage of raw materials and waste to despatch of products and waste but excluding operation of the odourisation plant. The operation of a gas fired power station comprising Keadby 2 from receipt of fuels as specified in Table S2.1 to discharge of exhaust gases and the generation of steam and electricity for export. Including the operation of selective catalytic reduction abatement plant. From receipt, handling and on-site storage of raw materials and waste to despatch of products and waste.

Table S1.1 activities			
Activity reference	**Activity listed in Schedule 1 of the EP Regulations**	**Description of specified activity**	**Limits of specified activity**
		Emergency back-up diesel generator 3MWth	For use in the event of power failure for K1 and K2.
Directly Associated Activities			
AR2	Directly associated activity	Oil storage	From receipt of raw materials to handling, on-site storage and handling for use.
AR3	Directly associated activity	Surface water drainage	Handling and storage of site drainage until discharge to the site surface water system. Including surface water storage in attenuation pond.
AR4	Directly associated activity	Water treatment	From receipt of raw materials to dispatch of treated effluent, process waters and dirty water system to final discharge
AR5	Directly associated activity	Gas Heaters	The operation of gas heating plants from receipt of raw materials to handling, onsite storage and handling for use.
AR6	Trade and/or non-sewage effluent discharge to surface water or groundwater requiring specific substances assessment (any volume)	Discharge of excavation dewaterings	Discharge of excavation dewaterings from redevelopment work via current discharge point W1 and within the current permitted volume
AR7	Directly associated activity	Hybrid cooling system – Indirect cooling water system used to cool exhaust steam and components of the generating plant. (This plant will be utilised by Keadby 2 only)	From intake of water into the system from the Stainforth and Keadby canal, to final discharge into the River Trent.

Table S1.2 Operating techniques		
Description	**Parts**	**Date Received**
Application	The response to section 2.1, 2.2 and 2.3 excluding 2.3.4 and 2.3.5 in the Application.	03/04/06

Table S1.2 Operating techniques		
Description	**Parts**	**Date Received**
Receipt of additional information to the application	Responses to question 2 detailing air vent locations, pipe-work protection, specific site surface conditions, distillates transfer area improvements and BAT justification for distillate firing.	22/08/06
Receipt of additional information to the application	BAT justification for firing with distillate oil.	16/10/06, 26/10/07
Response to improvement condition 3	Method for determining particulate matter and sulphur dioxide from emission points A1, A2 and A3.	September 2007
Response to improvement condition 6	Response to IC 6 detailing review of emissions from release point W1.	24/02/09
Revised drawing Fig 2.22-1A emission points drawing (amendment v1)	Revised drawing to update emission points from site to include release point W4	30/10/15
Response to regulation 60(1) Notice – request for information dated 31/10/14.	Compliance routes and operating techniques identified in response to questions 2 (selected compliance route), 4 (configuration of LCP), 10 (derogation to not undertake monitoring when on standby fuels), 11 (monitoring requirements). Excluding compliance route ELV for LCP202, LCP203 and LCP204 and related operating techniques.	Received 23/03/15
Receipt of additional information to the regulation 60(1) Notice. Requested by email dated 18/11/2015.	Operating techniques identified in response to questions 6 (minimum start up load and minimum shut down load) Excluding compliance route ELV for LCP202, LCP203 and LCP204 and related operating techniques.	Received 27/11/15
Receipt of additional information to the regulation 60(1) Notice.	Confirmation of the compliance routes chosen for LCP202, LCP203 and LCP204.	Received 21/12/15 (letter dated 18/12/15)
Response to regulation 61(1) Notice – request for information dated 01/05/18 EPR/YP3133LL/V007	Compliance and operating techniques identified in response to the BAT Conclusions for large combustion plant published on 17th August 2017.	30/10/18
Additional information in response to regulation 61(1) Notice EPR/YP3133LL/V007	Stated use of Distillate Fuel Oil in LCP 202,203 and 204 and also the stated hours of operation of the above	05/09/19
Receipt of dewatering from excavation work for Keadby II to discharge via W1	Application form C2, C3 and C6 Environmental Permit Variation Application and water discharge – Supporting Information dated 03/06/2019.	13/09/19
Response to regulation 61(1) Notice – request for information dated 01/05/18 EPR/YP3133LL/V009	Compliance and operating techniques identified in response to the BAT Conclusions for large combustion plant published on 17th August 2017. – Amended Operating hours and fuels to be used on site.	18/09/19

Table S1.2 Operating techniques		
Description	**Parts**	**Date Received**
Request for confirmation by email 16/01/20	The Operator has confirmed they will comply with Joint Environmental Programme (JEP) report – 'Characterisation of power plant fuels for compliance with LCP BREF Conclusion BAT 9' issued October 2019.	16/01/20.
Application for substantial variation EPR/YP3133LL/V010	Application form C2, C3 and Keadby 2 Power Station Environmental Permit Application: Supporting Information dated 20/11/2019	02/12/19
Request for further Information	Supplementary Information Annex C, air Quality Assessment.	27/08/20
Request for further Information	Amended drawings – Site layout air, Water emissions A03 and Annex A Drainage drawings edited 20200929	30/09/20
Supplementary Information	Amended site plan	05/11/20

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

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
	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.	
IC 5	The Operator has undertaken a review of the existing screening arrangements with reference to the Eels (England and Wales) Regulations 2009 (SI 2009/3344) and the Environment Agency ''Safe Passage for Eel'' Regulatory Position Statement version 1 dated July 2012 (and as amended February 2013) in response to Improvement Programme reference IP4. 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.	Under review by the Environment Agency

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
	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.	
IC 6	For LCPD LCP413, LCP414 and LCP415 (now LCP202, LCP203 and LCP204 under IED). Annual emissions of dust, sulphur dioxide and oxides of nitrogen including energy usage for the year 01/01/2015 to 31/12/2015 shall be submitted to the Environment Agency using form AAE1 via the NERP Registry. If the LPCD LCP was a NERP plant the final quarter submissions shall be provided on the RTA 1 form to the NERP Registry.	Complete
IC 7	The operator shall provide a report in writing to the Environment Agency for acceptance which provides the net rated thermal input for LCP202, LCP203 and LCP204. The net rated thermal input is the 'as built' value unless the plant has been modified significantly resulting in an improvement of the plant efficiency or output that increases the rated thermal input (which typically requires a performance test to demonstrate that guaranteed improvements have been realised). Evidence to support this figure, in order of preference, shall be in the form of:- a) Performance test results* during contractual guarantee testing or at commissioning (quoting the specified standards or test codes), b) Performance test results after a significant modification (quoting the specified standards or test codes), c) Manufacturer's contractual guarantee value, d) Published reference data, e.g., Gas Turbine World Performance Specifications (published annually); e) Design data, e.g., nameplate rating of a boiler or design documentation for a burner system; f) Operational efficiency data as verified and used for heat accountancy purposes, g) Data provided as part of Due Diligence during acquisition, *Performance test results shall be used if these are available.	Complete
IC 8	The Operator shall submit a report in writing to the Environment Agency for acceptance. The report shall define and provide a written justification of the "minimum start up load" and "minimum shut-down load", for each unit within the LCP as required by the Implementing Decision 2012/249/EU in terms of: The output load (i.e. electricity, heat or power generated) (MW); and This output load as a percentage of the rated thermal output of the combustion plant (%). And / Or At least three criteria (operational parameters and / or discrete processes as detailed in the Annex) or equivalent operational parameters that suit the technical characteristics of the plant, which can be met at the end of start-up or start of shut-down as detailed in Article (9) 2012/249/EU.	Complete
IC 9	LCP 202, LCP203 and LCP204	12 months from issue of variation EPR/YP3133LL/V009

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
	A written report shall be submitted to the Environment Agency for approval. The report shall contain an impact assessment demonstrating that there is no significant environmental risk associated with black start operations and propose a methodology for minimisation of environmental impact during such a period of operation and for reporting instances of black start operation. The plant can be operated as set out in condition 2.3.9 of the permit once the report has been approved by the Environment Agency. The methodology for operation and reporting set out in the report shall be implemented by the Operator from the date of approval by the Environment Agency.	
IC10	The Operator shall submit a report in writing to the Environment Agency for acceptance. The report shall define and provide a written justification of the "minimum start up load" and "minimum shut-down load", for each unit within the LCP682 as required by the Implementing Decision 2012/249/EU in terms of: The output load (i.e. electricity, heat or power generated) (MW); and This output load as a percentage of the rated thermal output of the combustion plant (%). And / Or At least three criteria (operational parameters and / or discrete processes as detailed in the Annex) or equivalent operational parameters that suit the technical characteristics of the plant, which can be met at the end of start-up or start of shut-down as detailed in Article (9) 2012/249/EU.	Within 12 months of the date on which fuel is first burnt
IC11	The Operator shall for LCP682 submit a report in writing to the Environment Agency for approval. The report shall define an output load or operational parameters and provide a written justification for when the dry low NOx operation is effective. The report shall also include the NOx profile through effective dry low NOx to 70% and then to full load.	Within 4 months of the completion of commissioning
IC12	LCP682 A written report shall be submitted to the Environment Agency for approval. The report shall contain an impact assessment demonstrating that there is no significant environmental risk associated with black start operations and propose a methodology for minimisation of environmental impact during such a period of operation and for reporting instances of black start operation. The plant can be operated as set out in condition 2.3.9 of the permit once the report has been approved by the Environment Agency. The methodology for operation and reporting set out in the report shall be implemented by the Operator from the date of approval by the Environment Agency.	12 months from issue of variation EPR/YP3133LL/V010
IC13	The Operator shall submit a written report to the Environment Agency describing the performance and optimisation of the Selective Catalytic Reduction (SCR) system and combustion settings to minimise oxides of nitrogen (NOx) emissions within the emission limit values described in this permit with the minimisation of nitrous oxide emissions. The report shall include an assessment of the level of NOx and NO2 emissions that can be achieved under optimum operating conditions. The report shall also provide details of the optimisation (including dosing rates) for the control of acid gases and dioxins	Within 4 months of the completion of commissioning.

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IC14	The Operator shall submit a written report to the Environment Agency on the commissioning of the installation. The report shall summarise the environmental performance of the plant as installed against the design parameters set out in the Application. The report shall also include a review of the performance of the facility against the conditions of this permit and details of procedures developed during commissioning for achieving and demonstrating compliance with permit conditions.	Within 4 months of the completion of commissioning.

Table S1.4 Pre-operational measures	
Reference	**Pre-operational measures**
PO1	Prior to the commencement of commissioning, the Operator shall provide a written commissioning plan, including timelines for completion, for approval by the Environment Agency. The commissioning plan shall include the expected emissions to the environment during the different stages of commissioning, the expected durations of commissioning activities and the actions to be taken to protect the environment and report to the Environment Agency in the event that actual emissions exceed expected emissions. Commissioning shall be carried out in accordance with the commissioning plan as approved.

Table S1.5 Start-up and Shut-down thresholds		
Emission Point and Unit Reference	**"Minimum Start-Up Load"** **When two of the criteria listed below for the LCP or unit have been met.**	**"Minimum Shut-Down Load"** **When two of the criteria listed below for the LCP or unit have been met.**
Keadby 1 – A1(a), A1(b), A2(a) and A2(b) LCP202 and LCP203 In combined and open cycle modes burning natural gas	Flame on Emissions Compliance Mode >166MW gas turbine output, 70%	Flame off Emissions Compliance Mode <90 MW gas turbine output; 38%
A3 LCP 204	Flame on Combustion bypass valve <90% >17MW	Flame off Combustion bypass valve>90% <17MW
Keadby 2 – A101 **LCP682** In combined cycle burning natural gas	To be agreed in writing by the Environment Agency, following the outcome of improvement condition IC10	To be agreed in writing by the Environment Agency, following the outcome of improvement condition IC10

Table S1.6 Dry Low NOx effective definition	
Emission Point and Unit Reference	**Dry Low NOx effective definition** **Load in MW and as percent of rated power output (%)**
CCGT/OCGT	
Keadby 1 – A1(a) & A2(a) & A1(b) & A2(b) LCP202 and LCP203	166MW; 70%
A3 LCP204	17MW; 70%
CCGT	
Keadby 2 – A101 **LCP682**	To be agreed in writing by the Environment Agency, following the outcome of improvement condition IC11

Schedule 2 – Raw materials and fuels

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

Schedule 3 – Emissions and monitoring

Table S3.1a Point source emissions to air – emission limits and monitoring requirements shall apply from 01/07/20 to 16/08/21						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A1(a) & A2(a) [Points A1(a) & A2(a) on site plan in Schedule 7]	LCP202 & LCP203 Gas turbine fired on natural gas	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	50 mg/m^3 70% to baseload	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A1(a) & A2(a) [Points A1(a) & A2(a) on site plan in Schedule 7]	LCP202 & LCP203 Gas turbine fired on natural gas	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	55 mg/m^3 70% to baseload 55 mg/m^3 MSUL/MSDL to baseload	Daily mean of validated hourly averages	Continuous	BS EN 14181
A1(a) & A2(a) [Points A1(a) & A2(a) on site plan in Schedule 7]	LCP202 & LCP203 Gas turbine fired on natural gas	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	75 mg/m^3 70% to baseload	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A1(a) & A2(a) [Points A1(a) & A2(a) on site plan in Schedule 7]	LCP202 & LCP203 Gas turbine fired on natural gas	Carbon Monoxide	100 mg/m^3 70% to baseload	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A1(a) & A2(a) [Points A1(a) & A2(a) on site plan in Schedule 7]	LCP202 & LCP203 Gas turbine fired on natural gas	Carbon Monoxide	100 mg/m^3 70% to baseload 100 mg/m^3 MSUL/MSDL to baseload	Daily mean of validated hourly averages	Continuous	BS EN 14181

Table S3.1a Point source emissions to air – emission limits and monitoring requirements shall apply from 01/07/20 to 16/08/21						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A1(a) & A2(a) [Points A1(a) & A2(a) on site plan in Schedule 7]	LCP202 & LCP203 Gas turbine fired on natural gas	Carbon Monoxide	100 mg/m^3 70% to baseload	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A1(a) & A2(a) [Points A1(a) & A2(a) on site plan in Schedule 7]	LCP202 & LCP203 Gas turbine fired on natural gas when in combined cycle mode	Sulphur dioxide	-	-	At least every 6 months	Concentration by calculation, as agreed in writing with the Environment Agency
A1(a) & A2(a) [Points A1(a) & A2(a) on site plan in schedule 7]	LCP202 & LCP203 Gas turbine fired on natural gas	Oxygen	-	-	Continuous As appropriate to reference	BS EN 14181
A1(a) & A2(a) [Points A1(a) & A2(a) on site plan in schedule 7]	LCP202 & LCP203 Gas turbine fired on natural gas	Water vapour	-	-	Continuous As appropriate to reference	BS EN 14181
A1(a) & A2(a) [Points A1(a) & A2(a) on site plan in schedule 7]	LCP202 & LCP203 Gas turbine fired on natural gas	Stack gas temperature	-	-	Continuous As appropriate to reference	Traceable to national standards
A1(a) & A2(a) [Points A1(a) & A2(a) on site plan in schedule 7]	LCP202 & LCP203 Gas turbine fired on natural gas	Stack gas pressure	-	-	Continuous As appropriate to reference	Traceable to national standards

Table S3.1a Point source emissions to air – emission limits and monitoring requirements shall apply from 01/07/20 to 16/08/21						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A1(a/b) & A2(a/b) [Point A1(a/b) and point A2(a/b) on site plan in schedule 7]	LCP202 & LCP203 Gas turbine fired on natural gas when in open cycle mode	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	150 mg/m^3 70% to baseload	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A1(a/b) & A2(a/b) [Point A1(a/b) and point A2(a/b) on site plan in schedule 7]	LCP202 & LCP203 Gas turbine fired on natural gas when in open cycle mode	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	165mg/m^3 70% to baseload 165 mg/m^3 MSUL/MSDL to baseload	Daily mean of validated hourly averages	Continuous	BS EN 14181
A1(a/b) & A2(a/b) [Point A1(a/b) and point A2(a/b) on site plan in schedule 7]	LCP202 & LCP203 Gas turbine fired on natural gas when in open cycle mode	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	300 mg/m^3 70% to baseload	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A1(a/b) & A2(a/b) [Point A1(a/b) and point A2(a/b) on site plan in schedule 7]	LCP202 & LCP203 Gas turbine fired on natural gas when in open cycle mode	Carbon Monoxide	110mg/m^3 70% to baseload 110 mg/m^3 MSUL/MSDL to baseload	Daily mean of validated hourly averages	Continuous	BS EN 14181
A1(a/b) & A2(a/b) [Point A1(a/b) and point A2(a/b) on site plan in schedule 7]	LCP202 & LCP203 Gas turbine fired on natural gas when in open cycle mode	Carbon Monoxide	100 mg/m^3 70% to baseload	Monthly mean of validated hourly averages	Continuous	BS EN 14181

Table S3.1a Point source emissions to air – emission limits and monitoring requirements shall apply from 01/07/20 to 16/08/21						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A1(a/b) & A2(a/b) [Point A1(a/b) and point A2(a/b) on site plan in schedule 7]	LCP202 & LCP203 Gas turbine fired on natural gas when in open cycle mode	Carbon Monoxide	200 mg/m^3 70% to baseload	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A1(a/b) & A2(a/b) [Point A1(a/b) and point A2(a/b) on site plan in schedule 7]	LCP202 & LCP203 Gas turbine fired on natural gas when in open cycle mode	Sulphur dioxide	-	-	Concentration by calculation, every 2 years	Agreed in writing with the Environment Agency
A3 [Point A3 on site plan in schedule 7]	LCP204 Gas turbine fired on natural gas, OCGT	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	55 mg/m^3 70% to baseload	-	At least every six months	BS EN 14181
A3 [Point A3 on site plan in schedule 7]	LCP204 Gas turbine fired on natural gas, OCGT	Carbon Monoxide	110 mg/m^3 70% to baseload	-	At least every 6 months	BS EN 15058
A3 [Point A3 on site plan in schedule 7]	LCP204 Gas turbine fired on natural gas, OCGT	Sulphur dioxide	-	-	At least every 6 months	Agreed in writing with the Environment Agency
A3 [Point A3 on site plan in schedule 7]	LCP204 Gas turbine fired on natural gas, OCGT	Oxygen	-	-	Periodic as appropriate to reference	BS EN 14789
A3 [Point A3 on site plan in schedule 7]	LCP204 Gas turbine fired on natural gas, OCGT	Water vapour	-	-	Periodic as appropriate to reference	BS EN 14790
A3 [Point A3 on site plan in schedule 7]	LCP204 Gas turbine fired on natural gas, OCGT	Flow	-	-	Periodic as appropriate to reference	EN ISO 16911

Table S3.1a Point source emissions to air – emission limits and monitoring requirements shall apply from 01/07/20 to 16/08/21						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A3 [Point A3 on site plan in schedule 7]	LCP204 Gas turbine fired on natural gas OCGT	Stack gas volume flow	-	-	Periodic as appropriate to reference	BS EN 16911
A3 [Point A3 on site plan in schedule 7]	LCP204 Gas turbine fired on gas oil, OCGT	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	200mg/m^3	Daily average	At least every 6 months	Concentration by calculation
A3 [Point A3 on site plan in schedule 7]	LCP204 Gas turbine fired on gas oil, OCGT	Carbon Monoxide	-	-	-	-
A3 [Point A3 on site plan in schedule 7]	LCP204 Gas turbine fired on gas oil, OCGT	Sulphur dioxide	-	-	At least every 6 months	Concentration by calculation, as agreed in writing with the Environment Agency
A3 [Point A3 on site plan in schedule 7]	LCP204 Gas turbine fired on gas oil, OCGT	Dust	-	-	At least every 6 months	Concentration by calculation, as agreed in writing with the Environment Agency
A3 [Point A3 on site plan in schedule 7]	LCP204 Gas turbine fired on gas oil, OCGT	Oxygen	-	-	Periodic As appropriate to reference	BS EN 14789
A3 [Point A3 on site plan in schedule 7]	LCP204 Gas turbine fired on gas oil, OCGT	Water vapour	-	-	Periodic As appropriate to reference	BS EN 14790
A3 [Point A3 on site plan in schedule 7]	LCP204 Gas turbine fired on gas oil, OCGT	Stack gas volume flow	-	-	-	BS EN 16911

Table S3.1a Point source emissions to air – emission limits and monitoring requirements shall apply from 01/07/20 to 16/08/21						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A1(a), A1(b), A2(a), A2(b) & A3 [Points A1(a), A1(b), A2(a), A2(b) and A3 on site plan in schedule 7]	LCP202 & LCP203 Gas turbine fired on natural gas and/or LCP204 Gas turbine fired on Natural gas/gas oil	As required by the Method Implementation Document for BS EN 15259	-	-	Pre-operation and when there is a significant operational change	BS EN 15259
A4 & A5 [Points A4 & A5 on site plan in schedule 7]	Gas heaters 1 & 2	-	-	-	-	-
A6 Auxiliary Boiler [Point A6 on site plan in schedule 7]	AB01 Boiler plant fired on natural gas	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	-	-	-	-
A6 Auxiliary Boiler [Point A6 on site plan in schedule 7]	AB01 Boiler plant fired on distillate oil	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	-	-	-	-
A7 – A10	Emergency diesel engines exhausts 1 – 4	-	-	-	-	-
A11	Control and Admin Building gas fired domestic boiler exhaust	-	-	-	-	-
A12	Water treatment plant gas fired domestic boiler exhaust	-	-	-	-	-

Table S3.1a Point source emissions to air – emission limits and monitoring requirements shall apply from 01/07/20 to 16/08/21						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A13 – A14	Diesel fire foam pumps exhausts	-	-	-	-	-
A15 – A16	Diesel fire foam pumps exhausts	-	-	-	-	-
A17	Workshop and Stores gas fired air heater	-	-	-	-	-
A18	Water treatment plant gas fired air heater	-	-	-	-	-
A19	Diesel fire water pump building gas fired air heater	-	-	-	-	-
A23	LCP 204 fuel oil (diesel) tank atmospheric vent	-	-	-	-	-
A24	Acid bulk storage tank atmospheric vent	-	-	-	-	-
A25	Bulk caustic storage tank atmospheric vent	-	-	-	-	-
A26 – A28	LCP 202 & LCP 203 & ST generator seal oil vacuum tanks vapour exhaust	-	-	-	-	-

Table S3.1a Point source emissions to air – emission limits and monitoring requirements shall apply from 01/07/20 to 16/08/21						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A29 –A31	LCP 202 & LCP 203 & ST Lube oil tank mist eliminator exhausts	-	-	-	-	-
A32	LCP204 Lube oil tank mist eliminator exhaust	-	-	-	-	-
A33 – A34	LCP 202 & LCP 203 False start (waste diesel) drains sump atmospheric vent	-	-	-	-	-
A35 – A36	LCP 202 & LCP 203 HP Gas supply pipe work vent to atmosphere (natural gas)	-	-	-	-	-
A37	AB01 LP Gas supply cork vent to atmosphere (natural gas)	-	-	-	-	-
A38 – A40	LCP 202, LCP 203 & LCP 204 Inter stage vents to atmosphere (natural gas)	-	-	-	-	-
A41 – A43	LCP 202 & LCP 203 & ST Generator hydrogen supply gas control system vent to atmosphere	-	-	-	-	-

Table S3.1a Point source emissions to air – emission limits and monitoring requirements shall apply from 01/07/20 to 16/08/21						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A44 – A 46	LCP 202 & 203 & ST Generator seal oil gas (hydrogen) exhauster fan vents to atmosphere	-	-	-	-	-
A47 – A49	LCP 202 & LCP 203 & ST Battery Room exhauster vents to atmosphere	-	-	-	-	-
A50	Station Battery Room exhauster vent to atmosphere	-	-	-	-	-
A51	Station natural gas HP supply coalesce condensate drains tank atmospheric vent	-	-	-	-	-
A101 [Point A101 on site plan in Schedule 7]	LCP682 Gas turbine fired on natural gas	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	50mg/m^3 DLN effective to baseload Note 1	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A101 [Point A101 on site plan in Schedule 7]	LCP682 Gas turbine fired on natural gas	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	45.4mg/m^3 DLN effective to baseload Note 1	Daily mean of validated hourly averages	Continuous	BS EN 14181
			45.4mg/m^3 MSUL/MSDL to baseload Note 2			

Table S3.1a Point source emissions to air – emission limits and monitoring requirements shall apply from 01/07/20 to 16/08/21						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A101 [Point A101 on site plan in Schedule 7]	LCP682 Gas turbine fired on natural gas	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	75mg/m^3 DLN effective to baseload Note 1	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A101 [Point A101 on site plan in Schedule 7]	LCP682 Gas turbine fired on natural gas	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	34.1mg/m^3 Note 4 DLN effective to baseload Note 1	Yearly average	Continuous	BS EN 14181
A101 [Point A101 on site plan in Schedule 7]	LCP682 Gas turbine fired on natural gas	Carbon monoxide	100 mg/m^3 DLN effective to baseload Note 1	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A101 [Point A101 on site plan in Schedule 7]	LCP682 Gas turbine fired on natural gas	Carbon monoxide	110 mg/m^3 DLN effective to baseload Note 1 110 mg/m^3 MSUL/MSDL to baseload Note 2	Daily mean of validated hourly averages	Continuous	BS EN 14181
A101 [Point A101 on site plan in Schedule 7]	LCP682 Gas turbine fired on natural gas	Carbon monoxide	200 mg/m^3 DLN effective to baseload Note 1	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A101 [Point A101 on site plan in Schedule 7]	LCP682 Gas turbine fired on natural gas	Carbon monoxide	100 mg/m^3 DLN effective to baseload Note 1	Yearly average	Continuous	BS EN 14181

Table S3.1a Point source emissions to air – emission limits and monitoring requirements shall apply from 01/07/20 to 16/08/21						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A101 [Point A101 on site plan in Schedule 7]	LCP682 Gas turbine fired on natural gas	NH_3	3.8mg/m^3 DLN effective to baseload Note 1	Yearly average or average over the sampling period	Continuous	BS EN 14181
A101 [Point A101 on site plan in Schedule 7]	LCP682 Gas turbine fired on natural gas	SO_3	-	-	-	-
A101 [Point A101 on site plan in Schedule 7]	LCP682 Gas turbine fired on natural gas	Sulphur dioxide	-	-	At least every 6 months	Concentration by calculation, as agreed in writing with the Environment Agency
A101 [Point A101 on site plan in Schedule 7]	LCP682 Gas turbine fired on natural gas	Oxygen	-	-	Continuous As appropriate to reference	BS EN 14181
A101 [Point A101 on site plan in Schedule 7]	LCP682 Gas turbine fired on natural gas	Flow	-	-	Continuous As appropriate to reference	EN ISO 16911
A101 [Point A101 on site plan in Schedule 7]	LCP682 Gas turbine fired on natural gas	Water vapour	-	-	Continuous As appropriate to reference	BS EN 14181
A101 [Point A101 on site plan in Schedule 7]	LCP682 Gas turbine fired on natural gas	Stack gas temperature	-	-	Continuous As appropriate to reference	Traceable to national standards
A101 [Point A101 on site plan in Schedule 7]	LCP682 Gas turbine fired on natural gas	Stack gas pressure	-	-	Continuous As appropriate to reference	Traceable to national standards

Table S3.1a Point source emissions to air – emission limits and monitoring requirements shall apply from 01/07/20 to 16/08/21						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A101 [Point A101 on site plan in Schedule 7]	LCP682 Gas turbine fired on natural gas	As required by the Method Implementation Document for BS EN 15259	-	-	Pre-operation and when there is a significant operational change	BS EN 15259
A102 [Point A101 on site plan in Schedule 7]	LCP682 Emergency generator 3MWth	-	-	-	-	-
A103 [Point A101 on site plan in Schedule 7]	Fuel gas heater	NOx	100mg/m^3	Periodic, average over one hour	At least every 3 years	MCERTS
A104 [Point A101 on site plan in Schedule 7]	Water heating system – gas fired	NOx	100mg/m^3	Periodic, average over one hour	At least every 3 years	MCERTS
Note 1: This ELV applies when DLN is effective as defined in Table S1.6 of this permit. Note 2: This ELV applies when the load varies between MSUL/MSDL and base load during the daily reference period. MSUL and MSDL are defined in Table S1.5 of this permit. Note 3: This ELV applies >1500hrs/yr. Note 4: this ELV is based on efficiency allowances from the LCP BREF: Yearly average NOx = 30 x (62.5%/55%) = 34.1 mg/Nm3						

Table S3.1b Point source emissions to air – emission limits and monitoring requirements shall apply from 17/08/21						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A1(a) & A2(a) [Points A1(a) & A2(a) on site plan in Schedule 7]	LCP202 & LCP203 Gas turbine fired on natural gas	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	50 mg/m^3 DLN effective to baseload Note 2	Monthly mean of validated hourly averages	Continuous	BS EN 14181

Table S3.1b Point source emissions to air – emission limits and monitoring requirements shall apply from 17/08/21						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A1(a) & A2(a) [Points A1(a) & A2(a) on site plan in Schedule 7]	LCP202 & LCP203 Gas turbine fired on natural gas	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	50 mg/m^3 DLN effective to baseload Note 2	Daily mean of validated hourly averages	Continuous	BS EN 14181
			50 mg/m^3 MSUL/MSDL to baseload Note 1			
A1(a) & A2(a) [Points A1(a) & A2(a) on site plan in Schedule 7]	LCP202 & LCP203 Gas turbine fired on natural gas	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	75 mg/m^3 DLN effective to baseload Note 2	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A1(a) & A2(a) [Points A1(a) & A2(a) on site plan in Schedule 7]	LCP202 & LCP203 Gas turbine fired on natural gas	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	40mg/m^3 Note 3 DLN effective to baseload Note 2	Yearly average	Continuous	BS EN 14181
A1(a) & A2(a) [Points A1(a) & A2(a) on site plan in Schedule 7]	LCP202 & LCP203 Gas turbine fired on natural gas	Carbon Monoxide	100 mg/m^3 DLN effective to baseload Note 2	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A1(a) & A2(a) [Points A1(a) & A2(a) on site plan in Schedule 7]	LCP202 & LCP203 Gas turbine fired on natural gas	Carbon Monoxide	100 mg/m^3 DLN effective to baseload Note 2	Daily mean of validated hourly averages	Continuous	BS EN 14181

Table S3.1b Point source emissions to air – emission limits and monitoring requirements shall apply from 17/08/21						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
			100 mg/m^3 MSUL/MSDL to baseload Note 1			
A1(a) & A2(a) [Points A1(a) & A2(a) on site plan in Schedule 7]	LCP202 & LCP203 Gas turbine fired on natural gas	Carbon Monoxide	100 mg/m^3 DLN effective to baseload Note 2	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A1(a) & A2(a) [Points A1(a) & A2(a) on site plan in Schedule 7]	LCP202 & LCP203 Gas turbine fired on natural gas	Carbon Monoxide	100 mg/m^3 Note3 DLN effective to baseload Note 2	Yearly average	Continuous	BS EN 14181
A1(a) & A2(a) [Points A1(a) & A2(a) on site plan in Schedule 7]	LCP202 & LCP203 Gas turbine fired on natural gas	Sulphur dioxide	-	-	At least every 6 months	Concentration by calculation, as agreed in writing with the Environment Agency
A1(a) & A2(a) [Points A1(a) & A2(a) on site plan in schedule 7]	LCP202 & LCP203 Gas turbine fired on natural gas	Oxygen	-	-	Continuous As appropriate to reference	BS EN 14181
A1(a) & A2(a) [Points A1(a) & A2(a) on site plan in schedule 7]	LCP202 & LCP203 Gas turbine fired on natural gas	Water vapour	-	-	Continuous As appropriate to reference	BS EN 14181
A1(a) & A2(a) [Points A1(a) & A2(a) on site plan in schedule 7]	LCP202 & LCP203 Gas turbine fired on natural gas	Stack gas temperature	-	-	Continuous As appropriate to reference	Traceable to national standards

Table S3.1b Point source emissions to air – emission limits and monitoring requirements shall apply from 17/08/21						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A1(a) & A2(a) [Points A1(a) & A2(a) on site plan in schedule 7]	LCP202 & LCP203 Gas turbine fired on natural gas	Flow	-	-	Continuous As appropriate to reference	EN ISO 16911
A1(a) & A2(a) [Points A1(a) & A2(a) on site plan in schedule 7]	LCP202 & LCP203 Gas turbine fired on natural gas	Stack gas pressure	-	-	Continuous As appropriate to reference	Traceable to national standards
A1(a/b) & A2(a/b) [Point A1(a/b) and point A2(a/b) on site plan in schedule 7]	LCP202 & LCP203 Gas turbine fired on natural gas when in open cycle mode	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	150mg/m^3 70% to baseload DLN effective to baseload Note 2	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A1(a/b) & A2(a/b) [Point A1(a/b) and point A2(a/b) on site plan in schedule 7]	LCP202 & LCP203 Gas turbine fired on natural gas when in open cycle mode	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	80mg/m^3 DLN effective to baseload Note 2	Daily mean of validated hourly averages	Continuous	BS EN 14181
A1(a/b) & A2(a/b) [Point A1(a/b) and point A2(a/b) on site plan in schedule 7]	LCP202 & LCP203 Gas turbine fired on natural gas when in open cycle mode	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	300mg/m^3 70% to baseload	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181

Table S3.1b Point source emissions to air – emission limits and monitoring requirements shall apply from 17/08/21						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A1(a/b) & A2(a/b) [Point A1(a/b) and point A2(a/b) on site plan in schedule 7]	LCP202 & LCP203 Gas turbine fired on natural gas when in open cycle mode	Carbon Monoxide	110mg/m^3 DLN effective to baseload Note 2 --- 110 mg/m^3 MSUL/MSDL to baseload	Daily mean of validated hourly averages	Continuous	BS EN 14181
A1(a/b) & A2(a/b) [Point A1(a/b) and point A2(a/b) on site plan in schedule 7]	LCP202 & LCP203 Gas turbine fired on natural gas when in open cycle mode	Carbon Monoxide	100 mg/m^3 DLN effective to baseload Note 1	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A1(a/b) & A2(a/b) [Point A1(a/b) and point A2(a/b) on site plan in schedule 7]	LCP202 & LCP203 Gas turbine fired on natural gas when in open cycle mode	Carbon Monoxide	200 mg/m^3 DLN effective to baseload Note 1	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A1(a/b) & A2(a/b) [Point A1(a/b) and point A2(a/b) on site plan in schedule 7]	LCP202 & LCP203 Gas turbine fired on natural gas when in open cycle mode	Sulphur dioxide	-	-	Concentration by calculation, every 2 years	Agreed in writing with the Environment Agency
A3 [Point A3 on site plan in schedule 7]	LCP204 Gas turbine fired on natural gas, OCGT	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	55 mg/m^3 (NO and NO2 expressed as NO2)	Daily average	At least every six months	BS EN 14792

Table S3.1b Point source emissions to air – emission limits and monitoring requirements shall apply from 17/08/21						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A3 [Point A3 on site plan in schedule 7]	LCP204 Gas turbine fired on natural gas, OCGT	Carbon Monoxide	110 mg/m^3 DLN effective to baseload Note 2	-	At least every 6 months	BS EN 15058
A3 [Point A3 on site plan in schedule 7]	LCP204 Gas turbine fired on natural gas, OCGT	Sulphur dioxide	-	-	At least every 6 months	Agreed in writing with the Environment Agency
A3 [Point A3 on site plan in schedule 7]	LCP204 Gas turbine fired on natural gas, OCGT	Oxygen	-	-	Periodic as appropriate to reference	BS EN 14789
A3 [Point A3 on site plan in schedule 7]	LCP204 Gas turbine fired on natural gas, OCGT	Water vapour	-	-	Periodic as appropriate to reference	BS EN 14790
A3 [Point A3 on site plan in schedule 7]	LCP204 Gas turbine fired on natural gas, OCGT	Flow	-	-	Periodic as appropriate to reference	EN ISO 16911 and M2
A3 [Point A3 on site plan in schedule 7]	LCP204 Gas turbine fired on natural gas, OCGT	Stack gas volume flow	-	-	Periodic as appropriate to reference	BS EN 16911 & TGN M2
A3 [Point A3 on site plan in schedule 7]	LCP204 Gas turbine fired on gas oil, OCGT	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	200mg/m^3	Daily average	At least every 6 months	Concentration by calculation
A3 [Point A3 on site plan in schedule 7]	LCP204 Gas turbine fired on gas oil, OCGT	Sulphur dioxide	66mg/m^3	Daily average	At least every 6 months	Concentration by calculation
A3 [Point A3 on site plan in schedule 7]	LCP204 Gas turbine fired on gas oil, OCGT	Dust	10mg/m^3	Daily average	At least every 6 months	Concentration by calculation

Table S3.1b Point source emissions to air – emission limits and monitoring requirements shall apply from 17/08/21						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A1(a), A1(b), A2(a), A2(b) & A3 [Points A1(a), A1(b), A2(a), A2(b) and A3 on site plan in schedule 7]	LCP202 & LCP203 Gas turbine fired on natural gas and/or LCP204 Gas turbine fired on Natural gas/gas oil	As required by the Method Implementation Document for BS EN 15259	-	-	Pre-operation and when there is a significant operational change	BS EN 15259
A4 & A5 [Points A4 & A5 on site plan in schedule 7]	Gas heaters 1 & 2	-	-	-	-	-
A6 Auxiliary Boiler [Point A6 on site plan in schedule 7]	AB01 Boiler plant fired on natural gas	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	-	-	-	-
A6 Auxiliary Boiler [Point A6 on site plan in schedule 7]	AB01 Boiler plant fired on distillate oil	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	-	-	-	-
A7 – A10	Emergency diesel engines exhausts 1 – 4	-	-	-	-	-
A11	Control and Admin Building gas fired domestic boiler exhaust	-	-	-	-	-
A12	Water treatment plant gas fired domestic boiler exhaust	-	-	-	-	-
A13 – A14	Diesel fire foam pumps exhausts	-	-	-	-	-

Table S3.1b Point source emissions to air – emission limits and monitoring requirements shall apply from 17/08/21						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A15 – A16	Diesel fire foam pumps exhausts	-	-	-	-	-
A17	Workshop and Stores gas fired air heater	-	-	-	-	-
A18	Water treatment plant gas fired air heater	-	-	-	-	-
A19	Diesel fire water pump building gas fired air heater	-	-	-	-	-
A23	LCP 204 fuel oil (diesel) tank atmospheric vent	-	-	-	-	-
A24	Acid bulk storage tank atmospheric vent	-	-	-	-	-
A25	Bulk caustic storage tank atmospheric vent	-	-	-	-	-
A26 – A28	LCP 202 & LCP 203 & ST generator seal oil vacuum tanks vapour exhaust	-	-	-	-	-
A29 –A31	LCP 202 & LCP 203 & ST Lube oil tank mist eliminator exhausts	-	-	-	-	-

Table S3.1b Point source emissions to air – emission limits and monitoring requirements shall apply from 17/08/21						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A32	LCP204 Lube oil tank mist eliminator exhaust	-	-	-	-	-
A33 – A34	LCP 202 & LCP 203 False start (waste diesel) drains sump atmospheric vent	-	-	-	-	-
A35 – A36	LCP 202 & LCP 203 HP Gas supply pipe work vent to atmosphere (natural gas)	-	-	-	-	-
A37	AB01 LP Gas supply cork vent to atmosphere (natural gas)	-	-	-	-	-
A38 – A40	LCP 202, LCP 203 & LCP 204 Inter stage vents to atmosphere (natural gas)	-	-	-	-	-
A41 – A43	LCP 202 & LCP 203 & ST Generator hydrogen supply gas control system vent to atmosphere	-	-	-	-	-
A44 – A 46	LCP 202 & 203 & ST Generator seal oil gas (hydrogen) exhauster fan vents to atmosphere	-	-	-	-	-

Table S3.1b Point source emissions to air – emission limits and monitoring requirements shall apply from 17/08/21						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A47 – A49	LCP 202 & LCP 203 & ST Battery Room exhauster vents to atmosphere	-	-	-	-	-
A50	Station Battery Room exhauster vent to atmosphere	-	-	-	-	-
A51	Station natural gas HP supply coalesce condensate drains tank atmospheric vent	-	-	-	-	-
A101 [Point A101 on site plan in Schedule 7]	LCP682 Gas turbine fired on natural gas	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	50mg/m^3 DLN effective to baseload Note 1	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A101 [Point A101 on site plan in Schedule 7]	LCP682 Gas turbine fired on natural gas	Oxides of Nitrogen (NO and NO2 expressed as NO2)	45.4 mg/m^3 DLN effective to baseload Note 1	Daily mean of validated hourly averages	Continuous	BS EN 14181
			45.4 mg/m^3 MSUL/MSDL to baseload Note 2			
A101 [Point A101 on site plan in Schedule 7]	LCP682 Gas turbine fired on natural gas	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	75mg/m^3 DLN effective to baseload Note 1	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181

Table S3.1b Point source emissions to air – emission limits and monitoring requirements shall apply from 17/08/21						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A101 [Point A101 on site plan in Schedule 7]	LCP682 Gas turbine fired on natural gas	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	34.1mg/m^3 DLN effective to baseload Note 1	Yearly average	Continuous	BS EN 14181
A101 [Point A101 on site plan in Schedule 7]	LCP682 Gas turbine fired on natural gas	Carbon monoxide	100 mg/m^3 DLN effective to baseload Note 1	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A101 [Point A101 on site plan in Schedule 7]	LCP682 Gas turbine fired on natural gas	Carbon monoxide	100 mg/m^3 DLN effective to baseload Note 1	Daily mean of validated hourly averages	Continuous	BS EN 14181
			100 mg/m^3 MSUL/MSDL to baseload Note 2			
A101 [Point A101 on site plan in Schedule 7]	LCP682 Gas turbine fired on natural gas	Carbon monoxide	100 mg/m^3 DLN effective to baseload Note 1	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A101 [Point A101 on site plan in Schedule 7]	LCP682 Gas turbine fired on natural gas	Carbon monoxide	100 mg/m^3 DLN effective to baseload Note 1	Yearly average	Continuous	BS EN 14181

Table S3.1b Point source emissions to air – emission limits and monitoring requirements shall apply from 17/08/21						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A101 [Point A101 on site plan in Schedule 7]	LCP682 Gas turbine fired on natural gas	Sulphur dioxide	-	-	At least every 6 months	Concentration by calculation, as agreed in writing with the Environment Agency
A101 [Point A101 on site plan in Schedule 7]	LCP682 Gas turbine fired on natural gas	NH^3	$3.8mg/m^3$ Note 1	Yearly average or average over the sampling period	Continuous	BS EN 14181
A101 [Point A101 on site plan in Schedule 7]	LCP682 Gas turbine fired on natural gas	SO^3	-	-	-	-
A101 [Point A101 on site plan in Schedule 7]	LCP682 Gas turbine fired on natural gas	Oxygen	-	-	Continuous As appropriate to reference	BS EN 14181
A101 [Point A101 on site plan in Schedule 7]	LCP682 Gas turbine fired on natural gas	Flow	-	-	Continuous As appropriate to reference	EN ISO 16911
A101 [Point A101 on site plan in Schedule 7]	LCP682 Gas turbine fired on natural gas	Water vapour	-	-	Continuous As appropriate to reference	BS EN 14181
A101 [Point A101 on site plan in Schedule 7]	LCP682 Gas turbine fired on natural gas	Stack gas temperature	-	-	Continuous As appropriate to reference	Traceable to national standards
A101 [Point A101 on site plan in Schedule 7]	LCP682 Gas turbine fired on natural gas	Stack gas pressure	-	-	Continuous As appropriate to reference	Traceable to national standards
A101 [Point A101 on site plan in Schedule 7]	LCP682 Gas turbine fired on natural gas	As required by the Method Implementation Document for BS EN 15259	-	-	Pre-operation and when there is a significant operational change	BS EN 15259

Table S3.1b Point source emissions to air – emission limits and monitoring requirements shall apply from 17/08/21						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A102 [Point A101 on site plan in Schedule 7]	LCP682 Emergency generator 3MWth	-	-	-	-	-
A103 [Point A101 on site plan in Schedule 7]	Fuel gas heater	NOx	100mg/m^3	Periodic, average over one hour	At least every 3 years	MCERTS
A104 [Point A101 on site plan in Schedule 7]	Water heating system – gas fired	NOx	100mg/m^3	Periodic, average over one hour	At least every 3 years	MCERTS
Note 1: This ELV applies when DLN is effective as defined in Table S1.6 of this permit. Note 2: This ELV applies when the load varies between MSUL/MSDL and base load during the daily reference period. MSUL and MSDL are defined in Table S1.5 of this permit. Note 3: This ELV applies >1500hrs/yr. Note 4: Note 4: this ELV is based on efficiency allowances from the LCP BREF: Yearly average NOx = 30 x (62.5%/55%) = 34.1 mg/Nm3 Daily mean of validated hourly averages						

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**
Keadby 1						
W1 on site plan Fig.2.22-1B (emission to River Trent at grid reference (SE 83652 12223) [Point A1, point A2 and point A3 on site plan in schedule 7]	Daily maximum flow	- Cooling water - Water from water treatment plant (including regeneration effluent from W8 and filter water backwash effluent from W7) - surface drainage from lube oil unloading area via tilt plate separator and pump pit	15 m^3/sec	Average of 24-hour period beginning 00:01hrs	Daily	MCERTS

W1 on site plan Fig.2.22-1B (emission to River Trent at grid reference (SE 83652 12223)	Oil or Grease	- roadways at South East area, via tilt plate separator and pump pit - chemical tanker offload area via interceptor sump - bulk chemical storage bunds via effluent neutralisation sumps boiler - blowdown effluent from W9 - Abstracted excavation de-waterings from excavation to a maximum volume of 6,264m^3/day	No visible emission	24-hour period beginning 00:01hrs	Daily	-
	Total Daily Volume		985,670 m^3 (per day) not including surface water treatment	24-hour period beginning 00:01hrs	Continuous	MCERTS
	Discharge Temperature		To be agreed under IC3	Average over 24-hour period beginning 00:01hrs and maximum recorded	Continuous	Calibrated resistance thermometer device (RTD) UKAS approved
	Cooling water abstraction and discharge temperature differential		-	Average over 24-hour period beginning 00:01hrs and maximum recorded	Continuous	Calibrated resistance thermometer device (RTD) UKAS approved
	Mercury		-	-	-	[note 4]
	Cadmium		-	-	-	[note 5]
W2, W3, W5 (emissions to Red House Drain or Kelsey Drain)	Oil and grease	Drainage of surface waters from north-east power island, main transformer, amenity blocks, drainage of surface waters from fuel tank farm and Ealand Road area	No visible emission	Spot	Daily	-
W4,	Removed from permit under partial surrender EPR/YP3133LL/S007					

W7 & W9	Removed from permit under substantial variation EPR/YP3133LL/V010					
W6	Oil and grease	Drainage water from cooling water pump house and oil handling area	No visible emission	Spot	Daily	-
W8 [note 6]	pH range	Ion exchange effluent	5 – 10	24 hour period beginning 00:01hrs	Continuous	BS6068-2.50
Keadby 2						
W10	pH	Discharge of the K2 cooling water outflow into the K1 cooling water culvert.	5-10	24 hour period beginning 00:01hrs	Continuous	BS6068-2.50
	Daily maximum flow rate		100 l/s100l/s	Average of 24-hour period beginning 00:01hrs	Daily	MCERTS
	Residual chlorine		0.2mg/l Cl_2	-	-	-
	Conductivity		<5000uS/cm	-	-	-
	Oil & grease		No visible emission	Spot	Daily	-
	Discharge Temperature		35^{o}C	Average over 24-hour period and maximum recorded	Continuous	Calibrated resistance thermometer device (RTD) UKAS approved
	Cadmium		-	-	-	[note 4]
	Mercury		-	-	-	[note 5]
W11	pH	Rain water from roofs, paved areas and water from oil/water separators and neutralised water from the condensate polishing plant waste water system stored in the detention basin, released using a hydro brake	5 - 10	Spot	Daily	-
	Oil & grease		No visible emission	Spot (visual)	Daily	-

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

46% sodium hydroxide < 500 μg/kg

98% sulphuric acid < 1000 μg/kg

water treatment chemicals < 400 μg/kg

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

46% sodium hydroxide < 500 μg/kg

98% sulphuric acid < 1000 μg/kg

water treatment chemicals < 400 μg/kg

Note 6. pH applies to discharges longer than 10 minutes in duration.

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

Table S3.3 Process monitoring requirements				
Emission point reference or source or description of point of measurement	**Parameter**	**Monitoring frequency**	**Monitoring standard or method**	**Other specifications**
Keadby 1				
Cooling waters intake and discharge temperature differential	Temperature ^{O}C	Daily average	Calibrated resistance thermometer device (RTD) UKAS approved	
LCP 202 & LCP203	Net electrical efficiency	After each modification which that could significantly affect these parameters	EN Standards or equivalent	
LCP 204	Net electrical efficiency	After each modification which that could significantly affect these parameters	By calculation	
Keadby 2				
Cooling waters intake and discharge temperature differential	Temperature °C	Daily average	Calibrated resistance thermometer device (RTD) UKAS approved	
LCP 682	Net electrical efficiency	After each modification which that could significantly affect these parameters	EN Standards or equivalent	

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(a) & A2(a) A1(b) & A2(b) & A101	Every 3 months for continuous monitoring	1 January, 1 April, 1 July, 1 October
	A3	Every 6 months for periodic monitoring	1 January, 1 July
		Every year where there is an annual average	1 January
		Every 2 years for concentration by calculation	1 January
Carbon Monoxide	A1(a) & A2(a) A1(b) & A2(b) & A101	Every 3 months for continuous monitoring	1 January, 1 April, 1 July, 1 October
	A3	Every 6 months for periodic monitoring	1 January, 1 July
		Every year where there is an annual average	1 January
		Every 2 years for concentration by calculation	1 January
Sulphur dioxide	A3	Every 6 months for periodic monitoring	1 January, 1 July
Dust	A3	Every 6 months for periodic monitoring	1 January, 1 July
Ammonia	A101	Every 3 months for continuous monitoring	1 January, 1 April, 1 July, 1 October
Operating hours	A1(a), A2(a), A3	Every 3 months	1 January, 1 April, 1 July, 1 October
	A1(b), A2(b)	Every 6 months	1 January, 1 July
	A101	Every 3 months	1 January, 1 April, 1 July, 1 October

Table S4.1 Reporting of monitoring data			
Parameter	**Emission or monitoring point/reference**	**Reporting period**	**Period begins**
Emissions to Water Parameters as required by condition 3.5.1	W1, W2,W3, W5, W6, W7, W8, W9, W10 and W11	Every 6 months	1 January, 1 July

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 Large Combustion Plant 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 NOx for each LCP	Annually	t
Total Emissions to Air of SO2 for each LCP	Annually	t
Total Emissions to Air of Dust for each LCP	Annually	t
Operating Hours for each LCP	Annually	hr

Table S4.3 Large Combustion Plant Performance parameters for reporting to DEFRA		
Parameter	**Frequency of assessment**	**Units**
Operating Hours as a five yearly rolling average for LCP 204	Annually	hr

Table S4.4 Reporting forms			
Media/ parameter	**Reporting format**	**Agency recipient**	**Date of form**
Air & Energy	Form IED AR1 – SO_2, NO_x and dust mass emission and energy	National and Area Office	LCP BREF Reporting forms v2.8 Aug 2020 or as agreed in writing with the Agency
LCP	Form IED/LCPBREF HR1 – operating hours	National and Area Office	
Air	Form IED/LCPBREF CON 2 – continuous monitoring	Area Office	
CEMs	Form IED/LCPBREF CEMS – Invalidation Log	Area Office	
Resource Efficiency	Form REM1 – resource efficiency annual report	National and Area Office	
Water	Form water 1 or other form as agreed in writing by the Environment Agency	Area Office	
Sewer	Form sewer 1 or other form as agreed in writing by the Environment Agency	Area Office	
Rolling Malfunction	Form IED/LCPBREF BD1 cumulative Malfunction & breakdown	Area Office	
Malfunction and breakdown	Form LCPBREF MF1 – as required	Area Office	
Black start data	Form LCPBREF BS1 – as required	Area Office	

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	

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

"Air Quality Risk Assessment" has the meaning given in Annex D of IED Compliance Protocol for Utility Boilers and Gas Turbines.

"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.

"average over the sampling period" means the average value of three consecutive measurements of at least 30 minutes each [or as agreed in writing with the Environment Agency].

"average of samples obtained during one year" means the average of the values obtained during one year of the periodic measurements taken with the monitoring frequency set for each parameter.

"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.

"commissioning" means testing of the installation that involves any operation of a Large Combustion Plant referenced in schedule 1, table S1.1 or as agreed with the Environment Agency.

"daily average" means the average over a period of 24 hours of validated hourly averages obtained by continuous measurements.

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

"DLN" means dry, low NO_x burners.

"dynamic emission limit value" (DELV) means an emission limit that varies in accordance with Article 40 of the Industrial Emissions Directive.

"emergency plant" means a plant which operates for the sole purpose of providing power at a site during an onsite emergency and/or during a black start and which does not provide balancing services or demand side response services.

"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.

"emissions to land" includes emissions to groundwater.

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

“EP Regulations” means The Environmental Permitting (England and Wales) Regulations SI 2016 No.1154 and words and expressions used in this permit which are also used in the Regulations have the same meanings as in those Regulations.

“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.

“low polluting fuels” means biomass or coal with an average as-received sulphur content of less than 0.4% by mass as described in the ESI IED Compliance Protocol for Utility Boilers and Gas Turbines.

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

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

“MCR” means maximum continuous rating.

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

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

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

“ncv” means net calorific value.

“Net electrical efficiency” means the ratio between the net electrical output (electricity produced minus the imported energy) and the fuel/feedstock energy input (as the fuel/feedstock lower heating value) at the combustion unit boundary over a given period of time.

“Net mechanical energy efficiency” means the ratio between the mechanical power at load coupling and the thermal power supplied by the fuel.

“Net total fuel utilisation” means the ratio between the net produced energy minus the imported electrical and/or thermal energy and the fuel energy input at the combustion unit boundary over a given period of time.

“non-emergency plant” means a plant which provides balancing services or demand side response services.

“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.

“SI” means site inspector.

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

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:

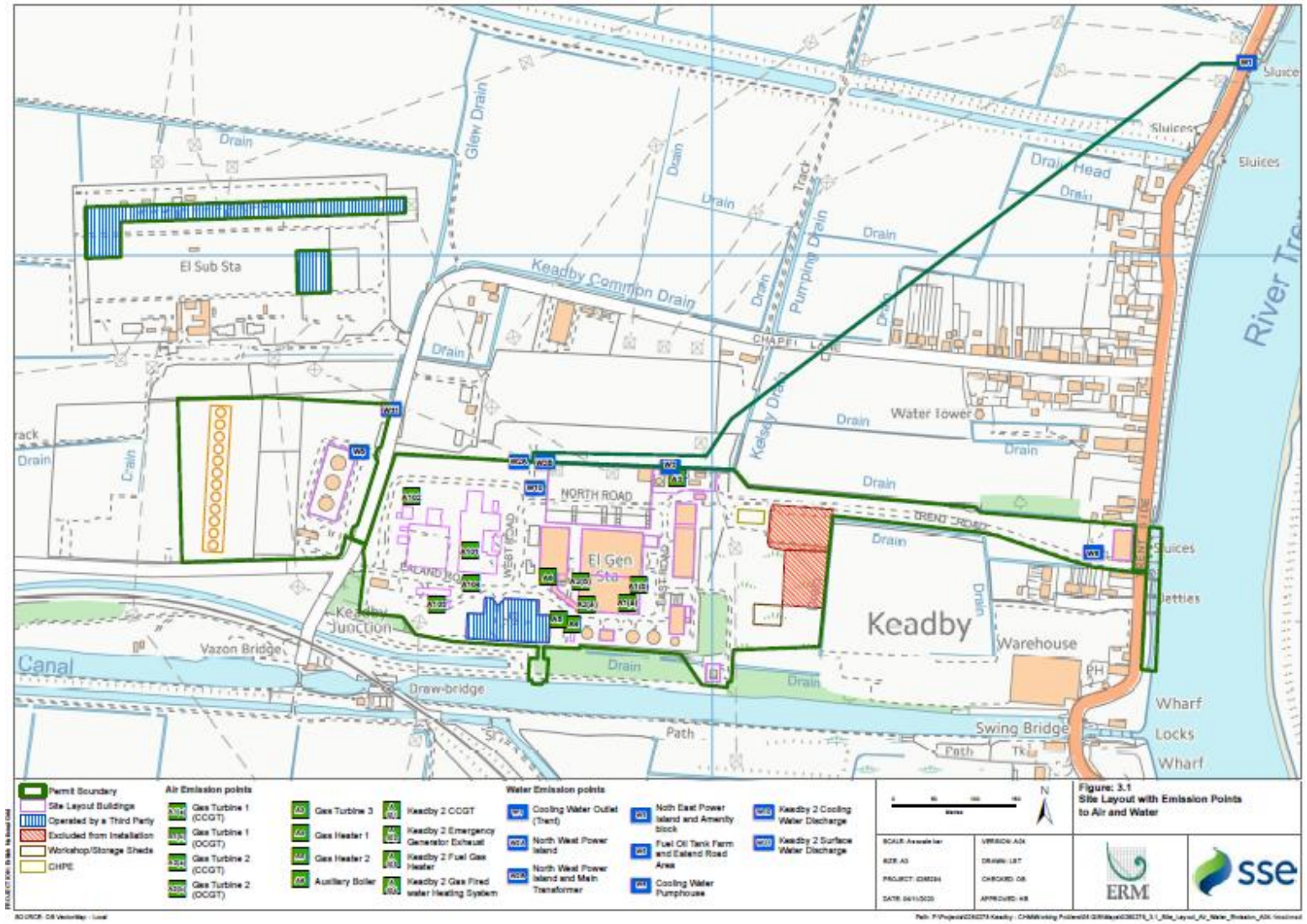
- in relation to emissions from combustion processes, the concentration in dry air at a temperature of 273K, at a pressure of 101.3 kPa and with an oxygen content of 3% dry for liquid and gaseous fuels, 6% dry for solid fuels; and/or

- 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.

“yearly average” means the average over a period of one year of validated hourly averages obtained by continuous measurements.

Schedule 7 – Site plan



END OF PERMIT