



Notice of variation and consolidation with introductory note

The Environmental Permitting (England & Wales) Regulations 2016

px-Limited

Stallingborough Titanium Dioxide Site
c/o Tronox Pigment UK Limited
PO Box 26
Grimsby
North Lincolnshire
DN41 8DP

Variation application number

EPR/FP3031HJ/V003

Permit number

EPR/FP3031HJ/V003

Stallingborough Titanium Dioxide Site

Permit number EPR/FP3031HJ/V003

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.

Article 21(3) of the Industrial Emissions Directive (IED) requires the Environment Agency to review conditions in permits that it has issued and to ensure that the permit delivers compliance with relevant standards, within four years of the publication of updated decisions on Best Available Techniques (BAT) Conclusions. We have reviewed the permit for this installation against the revised BAT Conclusions for the large combustion plant sector published on 17th August 2017. Only activities covered by this BAT Reference Document have been reviewed and assessed.

This variation makes the below changes following the review under Article 21(3) of the IED and the consolidation of the Environmental Permitting Regulations that came into force on the 4 January 2017:

- Permit conditions 3.6.2 to 3.6.7 require continuous monitoring of emissions to air of oxides of nitrogen and carbon monoxide applicable from 17 August 2021
- Revised emission limits and monitoring requirements for emissions to air applicable from 1st July 2020 until 16th August 2021 in Table S3.1a
- Revised emission limits and monitoring requirements for emissions to air applicable from 17 August 2021 in table S3.1b;
- Inclusion of process monitoring for energy efficiency in table S3.4; and
- Permit condition 2.3.6 and corresponding Table S1.5 & Improvement condition IC04 to define effective dry low NO_x point;

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

Two separate Operators, as part of a multi operator single installation, occupy the Stallingborough Titanium Dioxide pigment manufacturing installation. This permit authorises px Limited to undertake the activities listed in Schedule 1 of this permit.

The installation is situated within 300m of the Humber Estuary, designated as a Site of Special Scientific Interest (SSSI), and within 600m of a combined Special Protection Area (SPA)/Ramsar/SSSI area designated as Humber flats, Marshes and Coast, phase 1 (Pyewipe and Cleethorpes Coast). The impact of the plant's emissions have been modelled and assessed as being negligible for both these areas.

The plant produces electricity and steam using natural gas as fuel for use on the installation. The other operator on the installation, Tronox Pigment UK Limited (EPR/UP3537SJ), undertakes the production of titanium dioxide pigment from titanium ores using the chlorine process and as such requires both electricity and steam as generated by px Limited.

The Combined Heat and Power (CHP) Plant consists of two gas turbine (GT) electrical generators, each with its own supplementary fired heat recovery steam generator (HRSG), exhaust stack and associated equipment. The LCP CHP units are referenced LCP 221 and LCP 414.

The thermal input of each of these combustion lines is 70.0 MW (21.2 MWth for the gas turbine, 48.8 MWth for the HRSG) and the overall maximum electrical output for the CHP plant is 15 MW and an efficiency of approximately 72%. The two gas fired turbines are fitted with standard design burners with a steam injection

NOx abatement system. The plant receives a supply of demineralised boiler feed water from Tronox Pigment UK, which is “polished” at the plant by passing through a duplex mixed bed ion exchange system. Regeneration of this ion exchange system is carried out using 4% sulphuric acid and 4% caustic soda solution.

The main releases from the activity are air emissions related to combustion of natural gas and releases to water from the steam generator boiler blow down and boiler feed water treatment.

Releases to air are oxides of nitrogen, oxides of carbon, sulphur dioxide and dust via two main stacks (height 35m) with short term emissions from two by-pass stacks (heights 19.5m, used whilst the gas turbine achieves stable operating conditions prior to bringing the HRSG into operation). There is also the potential for releases from a temporary boiler, which may be used to fulfil the operator’s steam capacity obligation to Tronox Pigment UK Limited, during the bi-annual statutory inspection of the turbines.

The CHP plant does not use a cooling water system that requires the abstraction and discharge of water. The plant uses a closed cooling water system for cooling plant items such as the gas turbines and back pressure steam turbine; this is achieved using an air blast radiator to remove heat.

There is no direct discharge of water from the CHP plant to either water or sewer, all waste water and surface water enters the installation waste water system and is treated by Tronox Pigment UK Limited before discharge to the River Humber. Waters discharged to this system are mainly HRSG blow-down water, containing boiler treatment chemicals, and water from the regeneration of the ion exchange beds.

px Limited has an Environmental Management System externally certified to ISO 14001, which is also regularly internally audited as per the ISO 14001 standard.

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 PP3132SQ (EPR/PP3132SQ)	Received 30/09/2005	Application for 3000MW thermal input Power Station
Request to extend determination	Request dated 18/01/2006	Request accepted 24/01/2006
Request for further information	10/02/2006	Information received 24/02/2006
Permit determined	30/06/2006	
Application EPR/FP3031HJ/T001 (full transfer of permit EPR/PP3132SQ)	Duly made 01/02/2011	
Transfer determined	01/04/2011	
Regulation 60 Notice sent to the Operator	17/12/2014	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 Limits 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	25/03/2015	Response received from the Operator.
Additional information received	17/07/2015	Response to request for further information (RFI) dated 17/06/2015.

Status log of the permit		
Description	Date	Comments
Variation determined EPR/FP3031HJ/V002 (Billing ref: FP3031HJ)	22/12/2015	Varied and consolidated permit issued in modern condition format. Variation effective from 01/01/2016.
Regulation 61 Notice sent to the Operator	31/05/2018	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.	09/10/2018	Response received from the Operator.
Additional information in response to regulation 61(1) Notice EPR//FP3031HJ/V003 by email 25/02/2020	Received 24/03/2020	Compliance and operating techniques identified in response to BAT Conclusions 2, 12, 40, 41, 42 and 44
Additional information in response to regulation 61(1) Notice EPR//FP3031HJ/V003 by email 25/02/2020	Received 24/03/2020	Compliance and operating techniques identified in response to BAT 2 and BAT40
Additional information in response to regulation 61(1)	Received 5/05/2020	Compliance and operating techniques identified in response to BAT 41, BAT 42 and BAT 44
Variation determined EPR/FP3031HJ/V003 (Billing ref: BP3308BU)	30/06/2020	Varied and consolidated permit issued. Effective from 30/06/2020

Other Part A installation permits relating to this installation		
Operator	Permit number	Date of issue
Tronox Pigment UK Limited (previously known as Cristal Pigment UK Limited)	EPR/UP3537SJ	30/06/2006

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/FP3031HJ/V003

Issued to

px-Limited (“the operator”)

whose registered office is

px House

Westpoint Road

Stockton on Tees

TS17 6BF

company registration number 04373756

to operate part of a regulated facility at

Stallingborough Titanium Dioxide Site

c/o Tronox Pigment UK Limited

PO Box 26

Grimsby

North Lincolnshire

DN41 8DP

to the extent set out in the schedules.

The notice shall take effect from 30/06/2020

Name	Date
Daniel Timney	30/06/2020

Authorised on behalf of the Environment Agency

Schedule 1

All conditions have been varied by the consolidated permit as a result of an Environment Agency initiated variation.

Schedule 2 – consolidated permit

Consolidated permit issued as a separate document.

Permit

The Environmental Permitting (England and Wales) Regulations 2016

Permit number

EPR/FP3031HJ/V003

This is the consolidated permit referred to in the variation and consolidation notice for application EPR/FP3031HJ/V003 authorising,

px-Limited (“the operator”),

whose registered office is

px House

Westpoint Road

Stockton on Tees

TS17 6BF

company registration number 04373756

to operate part of a regulated facility at

Stallingborough Titanium Dioxide Site

c/o Tronox Pigment UK Limited

PO Box 26

Grimsby

North Lincolnshire

DN41 8DP

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

Name	Date
Daniel Timney	30/06/2020

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.

1.3 Efficient use of raw materials

1.3.1 The operator shall:

- (a) take appropriate measures to ensure that raw materials and water are used efficiently in the activities;
- (b) maintain records of raw materials and water used in the activities;
- (c) review and record at least every four years whether there are suitable alternative materials that could reduce environmental impact or opportunities to improve the efficiency of raw material and water use; and
- (d) take any further appropriate measures identified by a review.

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

1.4.1 The operator shall take appropriate measures to ensure that:

- (a) the waste hierarchy referred to in Article 4 of the Waste Framework Directive is applied to the generation of waste by the activities;
- (b) any waste generated by the activities is treated in accordance with the waste hierarchy referred to in Article 4 of the Waste Framework Directive; and
- (c) where disposal is necessary, this is undertaken in a manner which minimises its impact on the environment.

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

1.5 Multiple operator installations

- 1.5.1 Where the operator notifies the Environment Agency under condition 4.3.1 (a) or 4.3.1 (c), the operator shall also notify without delay the other operator(s) of the installation of the same information.

2 Operations

2.1 Permitted activities

- 2.1.1 The operator is only authorised to carry out the activities specified in schedule 1 table S1.1 (the “activities”).

2.2 The site

- 2.2.1 The activities shall not extend beyond the site, being the land shown edged in green on the site plan at schedule 7 to this permit, which is within the area edged in red on the site plan that represents the extent of the installation covered by this permit and that of the other operator of the installation.

2.3 Operating techniques

- 2.3.1 The activities shall, subject to the conditions of this permit, be operated using the techniques and in the manner described in the documentation specified in schedule 1, table S1.2, unless otherwise agreed in writing by the Environment Agency.
- 2.3.2 For the following activities referenced in schedule 1, table S1.1: LCP221 and LCP 414. 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: LCP221 and LCP414. The end of the start up period and the start of the shutdown period shall conform to the specifications set out in Schedule 1, tables S1.2 and S1.4
- 2.3.6 For the following activities referenced in schedule 1, table S1.1: LCP221 and LCP414. The effective Dry Low NOx threshold shall conform to the specifications set out in Schedule 1, tables S1.2 and S1.5.
- 2.3.7 For the following activities referenced in schedule 1, table S1.1: LCP221 and LCP414. 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.

2.3.8 The operator shall ensure that where waste produced by the activities is sent to a relevant waste operation, that operation is provided with the following information, prior to the receipt of the waste:

- (a) the nature of the process producing the waste;
- (b) the composition of the waste;
- (c) the handling requirements of the waste;
- (d) the hazardous property associated with the waste, if applicable; and
- (e) the waste code of the waste.

2.3.9 The operator shall ensure that where waste produced by the activities is sent to a landfill site, it meets the waste acceptance criteria for that landfill.

2.4 Improvement programme

2.4.1 The operator shall complete the improvements specified in schedule 1 table S1.3 by the date specified in that table unless otherwise agreed in writing by the Environment Agency.

2.4.2 Except in the case of an improvement which consists only of a submission to the Environment Agency, the operator shall notify the Environment Agency within 14 days of completion of each improvement.

3 Emissions and monitoring

3.1 Emissions to water, air or land

3.1.1 There shall be no point source emissions to water, air or land except from the sources and emission points listed in schedule 3 tables S3.1, S3.1a, 3.1b, 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 points A1, A2, A3 and A4 in schedule 3 tables S3.1, S3.1a, and S3.1b measured during periods of abatement equipment malfunction and breakdown shall be disregarded for the purposes of compliance with Tables S3.1, 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 S3.1, S3.1a, S 3.1b and S3.2; and
- (b) process monitoring specified in table S3.4

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

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

- 3.5.4 Permanent means of access shall be provided to enable sampling/monitoring to be carried out in relation to the emission points specified in schedule 3 tables S3.1, S3.1a, S3.1b and S3.2 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 shall be subject to quality control by means of parallel measurements with reference methods at least once every calendar year.
- 3.6.4 Unless otherwise agreed in writing by the Environment Agency in accordance with condition 3.6.5 below, the operator shall carry out the methods, including the reference measurement methods, to use and calibrate continuous measurement systems in accordance with the appropriate CEN standards.
- 3.6.5 If CEN standards are not available, ISO standards, national or international standards which will ensure the provision of data of an equivalent scientific quality shall be used, as agreed in writing with the Environment Agency.
- 3.6.6 Where required by a condition of this permit to check the measurement equipment, the operator shall submit a report to the Environment Agency in writing, within 28 days of the completion of the check.
- 3.6.7 Where Continuous Emission Monitors are installed to comply with the monitoring requirements in schedule 3, table(s) S3.1 and S3.1a; the Continuous Emission Monitors shall be used such that:
- (a) for the continuous measurement systems fitted to the LCP release points defined in table(s) S3.1 and S3.1a 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) 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
 - (f) any day, in which more than three hourly average values are invalid shall be invalidated.

4 Information

4.1 Records

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

- (a) be legible;
- (b) be made as soon as reasonably practicable;
- (c) if amended, be amended in such a way that the original and any subsequent amendments remain legible, or are capable of retrieval; and
- (d) be retained, unless otherwise agreed in writing by the Environment Agency, for at least 6 years from the date when the records were made, or in the case of the following records until permit surrender:
 - (i) off-site environmental effects; and
 - (ii) matters which affect the condition of the land and groundwater.

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

4.2 Reporting

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

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

- (a) a review of the results of the monitoring and assessment carried out in accordance with the permit including an interpretive review of that data;
- (b) the resource efficiency metrics set out in schedule 4 table S4.2;
- (c) the performance parameters set out in schedule 4 table S4.3 using the forms specified in table S4.4 of that schedule.
- (d) where condition 2.3.7 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 2.3.7) the operator shall submit an Air Quality Risk Assessment as outlined in the IED Compliance Protocol (condition 2.3.2).

4.2.6 For the following activities referenced in schedule 1, table S1.1: LCP221 and LCP414. Unless otherwise agreed in writing with the Environment Agency, within 1 month of the end of each quarter, the operator shall submit to the Environment Agency using the form IED RTA1, listed in table S4.4, the information specified on the form relating to the site's mass emissions.

4.3 Notifications

4.3.1 In the event:

- (a) that the operation of the activities gives rise to an incident or accident which significantly affects or may significantly affect the environment, the operator must immediately—
 - (i) inform the Environment Agency,
 - (ii) take the measures necessary to limit the environmental consequences of such an incident or accident, and
 - (iii) take the measures necessary to prevent further possible incidents or accidents;
- (b) of a breach of any permit condition the operator must immediately—
 - (i) inform the Environment Agency, and
 - (ii) take the measures necessary to ensure that compliance is restored within the shortest possible time;
- (c) of a breach of permit condition which poses an immediate danger to human health or threatens to cause an immediate significant adverse effect on the environment, the operator must immediately suspend the operation of the activities or the relevant part of it until compliance with the permit conditions has been restored.
- (d) of any malfunction or breakdown of abatement equipment relating to condition 2.3.7 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 Where the operator has entered into a climate change agreement with the Government, the Environment Agency shall be notified within one month of:

- (a) a decision by the Secretary of State not to re-certify the agreement;
- (b) a decision by either the operator or the Secretary of State to terminate the agreement; and
- (c) any subsequent decision by the Secretary of State to re-certify such an agreement.

4.3.8 The operator shall inform the Environment Agency in writing of the closure of any LCP within 28 days of the date of closure.

4.4 Interpretation

4.4.1 In this permit the expressions listed in schedule 6 shall have the meaning given in that schedule.

4.4.2 In this permit references to reports and notifications mean written reports and notifications, except where reference is made to notification being made "without delay", in which case it may be provided by telephone.

Schedule 1 – Operations

Table S1.1 activities			
Activity reference	Activity listed in Schedule 1 of the EP Regulations	Description of specified activity	Limits of specified activity
AR1	Section 1.1 A(1) (a): Burning any fuel in an appliance with a rated thermal input of 50 megawatts or more.	LCP221: Production of electrical power and steam in a Combined Heat and Power (CHP) plant comprising of one gas fired turbines and associated heat recovery steam generating (HRSG) boiler. LCP414: Production of electrical power and steam in a Combined Heat and Power (CHP) plant comprising of one gas fired turbines and associated heat recovery steam generating (HRSG) boiler.	From receipt of natural gas to discharge of exhaust gases and the generation of electricity and steam for export.
Directly Associated Activity			
AR2	Directly associated activity	De-ionisation of boiler feed water and regeneration of ion exchange.	Treatment of water supplied from Tronox Pigment UK Limited for use in the CHP plant only.
AR3	Directly associated activity	Boiler blowdown, boiler water treatment effluent, condensate drainage and turbine blade washings.	Handling and storage of effluents until discharge to Tronox Pigment UK Limited.

Table S1.2 Operating techniques		
Description	Parts	Date Received
Application	The response to questions 2.1 and 2.2 given in subsection 2.3 and 2.4 of the application supporting document section 6. Also further information that was received on 24/02/2006	20/09/2005

Table S1.2 Operating techniques		
Description	Parts	Date Received
Response to regulation 60(1) Notice – request for information dated 17/12/2014	Compliance route(s) and operating techniques identified in response to questions 1 (DEFRA LCP identifier), 2 (which compliance route), 3 (provide evidence of any notification made in relation to the TNP), 4 (configuration of each LCP), 5 (the net rated thermal input of each LCP), 6 (details of the derivation of minimum start-up load and minimum shut-down load), 7 (provide your proposed emission limit values), 8 (do you wish to apply for derogation not to undertake monitoring when on standby fuels), 9 (monitoring requirements with reference to IED).	Received 25/03/2015
Receipt of additional information to the regulation 60(1) Notice. requested by letter dated 17/06/2015	Compliance route(s) and operating techniques identified in response to questions 1 (DEFRA LCP identifier), 2 (which compliance route), 3 (provide evidence of any notification made in relation to the TNP), 4 (configuration of each LCP), 5 (the net rated thermal input of each LCP), 6 (details of the derivation of minimum start-up load and minimum shut-down load), 7 (provide your proposed emission limit values), 8 (do you wish to apply for derogation not to undertake monitoring when on standby fuels), 9 (monitoring requirements with reference to IED).	Received 17/07/2015
Response to regulation 61(1) Notice – request for information dated 01/05/2018 EPR/FP3031HJ/V003	Compliance and operating techniques identified in response to the BAT Conclusions for large combustion plant published on 17th August 2017.	Received 09/10/2018
Additional information in response to regulation 61(1) Notice EPR//FP3031HJ/V003 by email 25/02/2020	Compliance and operating techniques identified in response to BAT Conclusions 2, 12, 40, 41, 42 and 44	Received 24/03/2020
Additional information in response to regulation 61(1)	Compliance and operating techniques identified in response to BAT conclusions 41, 42 and 44	Received 05/05/2020

Table S1.3 Improvement programme requirements		
Improvement conditions IC01-IC03 have been removed from the permit through variation EPR/FP3031HJ/V003 as they are complete.		
Reference	Requirement	Date
IC04	The Operator shall 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.	31/07/2021

Table S1.4 Start-up and Shut-down thresholds		
Emission Point and Unit Reference	“Minimum Start-Up Load” Load in MW and as percent of rated power output (%) or steam flow rate in t/hr and as percent of rated thermal output (%) and when two of the criteria listed below for the LCP or unit have been met.	“Minimum Shut-Down Load” Load in MW and as percent of rated power output (%) or steam flow rate in t/hr and as percent of rated thermal output (%) and when two of the criteria listed below for the LCP or unit have been met.
A1:OCGT(No.1) A3:OCGT(No.2)	At 3.3MWe; 50% load at GT outlet temperature 990°C and GT shaft speed 11,000rpm or above	Less than 3.3MWe, 50% load at GT outlet temperature 990°C and GT shaft speed 11,000rpm
A2: LCP221 (GT/HRSG No.1) in supplementary mode A4:LCP414 (GT/HRSG No.2) in supplementary mode	At 6.6MWe; 100% load at GT outlet temperature 1059°C and GT shaft speed 11,000rpm or above	Below 3.3MWe; 50% load at GT outlet temperature 990°C and GT shaft speed 11,000rpm
A2: LCP221 (HRSG No.1) in auxiliary mode A4:LCP414 (HRSG No.2) in auxiliary mode)	At 18t/hr steam; 30% load at 42bar and temperature 400°C or above	Below 18t/hr steam; 30% load at 42bar and 400°C flame switched off

Table S1.5 Dry Low NOx effective definition	
Emission Point and Unit Reference	Load in MW and as percent of rated power output (%) or when two of the criteria listed below for the LCP or unit have been met, whichever is soonest
A2: LCP221 (GT/HRSG No.1) in supplementary mode A4:LCP414 (GT/HRSG No.2) in supplementary mode	As agreed in writing by the Environment Agency following the outcome of improvement condition IC04.

Schedule 2 – Raw materials and fuels

Table S2.1 Raw materials and fuels	
Raw materials and fuel description	Specification
Natural gas	-

Schedule 3 – Emissions and monitoring

Table S3.1 Point source emissions to air - emission limits and monitoring requirements until 30 th June 2020						
Emission point ref. & location	Source	Parameter	Limit (including unit)-these limits do not apply during start up or shut down.	Reference Period	Monitoring frequency	Monitoring standard or method
A2 [Gas turbine/HRSG Point A2 on site plan in schedule 7]	LCP221 Gas turbine with HRSG in supplementary mode fired on natural gas	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	125 mg/m ³ (at 15% O ₂ reference) MSUL/MSDL to base load ¹	-	At least every 6 months	BS EN 14792
A2 [Gas turbine/HRSG Point A2 on site plan in schedule 7]	LCP221 Gas turbine with HRSG in supplementary mode fired on natural gas	Carbon monoxide	100 mg/m ³ (at 15% O ₂ reference) MSUL/MSDL to base load ¹	-	At least every 6 months	BS EN 15058
A2 [Gas turbine/HRSG Point A2 on site plan in schedule 7]	LCP221 Gas turbine with HRSG in supplementary mode fired on natural gas	Sulphur dioxide	-	-	6 monthly by calculation	Concentration by calculation as agreed in writing with the Environment Agency
A2 [Gas turbine/HRSG Point A2 on site plan in schedule 7]	LCP221 Gas turbine with HRSG in supplementary mode fired on natural gas	Oxygen	-	-	Periodic as appropriate to reference	BS EN 14789

Table S3.1 Point source emissions to air - emission limits and monitoring requirements until 30th June 2020

Emission point ref. & location	Source	Parameter	Limit (including unit)-these limits do not apply during start up or shut down.	Reference Period	Monitoring frequency	Monitoring standard or method
A2 [Gas turbine/HRSG Point A2 on site plan in schedule 7]	LCP221 Gas turbine with HRSG in supplementary mode fired on natural gas	Water vapour	-	-	Periodic as appropriate to reference	BS EN 14790
A2 [Gas turbine/HRSG Point A2 on site plan in schedule 7]	LCP221 Gas turbine with HRSG in supplementary mode fired on natural gas	Stack gas volume flow	-	-	-	BS EN 16911
A2 [HRSG Point A2 on site plan in schedule 7]	LCP221 HRSG in auxiliary mode fired on natural gas	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	150 mg/m ³ (at 3% O ₂ reference) ² MSUL/MSDL to base load ¹	-	At least every 6 months	BS EN 14792
A2 [HRSG Point A2 on site plan in schedule 7]	LCP221 HRSG in auxiliary mode fired on natural gas	Carbon monoxide	100 mg/m ³ (at 3% O ₂ reference) ² MSUL/MSDL to base load ¹	-	At least every 6 months	BS EN 15058

Table S3.1 Point source emissions to air - emission limits and monitoring requirements until 30th June 2020						
Emission point ref. & location	Source	Parameter	Limit (including unit)-these limits do not apply during start up or shut down.	Reference Period	Monitoring frequency	Monitoring standard or method
A2 [HRSG Point A2 on site plan in schedule 7]	LCP221 HRSG in auxiliary mode fired on natural gas	Sulphur dioxide	-	-	6 monthly by calculation	Agreed in writing with the Environment Agency
A2 [HRSG Point A2 on site plan in schedule 7]	LCP221 HRSG in Auxiliary mode fired on natural gas.	Dust	-	-	Concentration by calculation every 4380 operational hours or 2 years, whichever is sooner	Agreed in writing with the Environment Agency
A2 [HRSG Point A2 on site plan in schedule 7]	LCP221 HRSG in auxiliary mode fired on natural gas.	Oxygen	-	-	Periodic As appropriate to reference	BS EN 14789
A2 [HRSG Point A2 on site plan in schedule 7]	LCP221 HRSG in auxiliary mode fired on natural gas	Water vapour	-	-	Periodic As appropriate to reference	BS EN 14790
A2 [HRSG Point A2 on site plan in schedule 7]	LCP221 HRSG in auxiliary mode fired on natural gas	Stack gas volume flow	-	-	-	BS EN 16941

Table S3.1 Point source emissions to air - emission limits and monitoring requirements until 30th June 2020

Emission point ref. & location	Source	Parameter	Limit (including unit)-these limits do not apply during start up or shut down.	Reference Period	Monitoring frequency	Monitoring standard or method
A4 [Gas turbine/HRSG Point A4 on site plan in schedule 7]	LCP414 Gas turbine with HRSG in supplementary mode fired on natural gas	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	125 mg/m ³ (at 15% O ₂ reference) MSUL/MSDL to base load ¹	-	At least every 6 months	BS EN 14792
A4 [Gas turbine/HRSG Point A4 on site plan in schedule 7]	LCP414 Gas turbine with HRSG in supplementary mode fired on natural gas	Carbon monoxide	100 mg/m ³ (at 15% O ₂ reference) MSUL/MSDL to base load ¹	-	At least every 6 months	BS EN 15058
A4 [Gas turbine/HRSG Point A4 on site plan in schedule 7]	LCP414 Gas turbine with HRSG in supplementary mode fired on natural gas	Sulphur dioxide	-	-	6 monthly by calculation	Agreed in writing with the Environment Agency
A4 [Gas turbine/HRSG Point A4 on site plan in schedule 7]	LCP414 Gas turbine with HRSG in supplementary mode fired on natural gas	Oxygen	-	-	Periodic as appropriate to reference	BS EN 14789

Table S3.1 Point source emissions to air - emission limits and monitoring requirements until 30th June 2020

Emission point ref. & location	Source	Parameter	Limit (including unit)-these limits do not apply during start up or shut down.	Reference Period	Monitoring frequency	Monitoring standard or method
A4 [Gas turbine/HRSG Point A4 on site plan in schedule 7]	LCP414 Gas turbine with HRSG in supplementary mode fired on natural gas	Water vapour	-	-	Periodic as appropriate to reference	BS EN 14790
A4 [Gas turbine/HRSG Point A4 on site plan in schedule 7]	LCP414 Gas turbine with HRSG in supplementary mode fired on natural gas	Stack gas volume flow	-	-	-	BS EN 16911
A2 & A4 [Gas turbines/HRSGs Points A2 & A4 on site plan in schedule 7]	LCP221 & LCP414 Gas turbines with HRSGs	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 [HRSG Point A4 on site plan in schedule 7]	LCP414 HRSG in Auxiliary mode fired on natural gas.	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	150 mg/m ³ (at 3% O ₂ reference) ² MSUL/MSDL to base load ¹	-	At least every 6 months	BS EN 14792 BS EN 15058

Table S3.1 Point source emissions to air - emission limits and monitoring requirements until 30th June 2020						
Emission point ref. & location	Source	Parameter	Limit (including unit)-these limits do not apply during start up or shut down.	Reference Period	Monitoring frequency	Monitoring standard or method
A4 [HRSG Point A4 on site plan in schedule 7]	LCP414 HRSG in Auxiliary mode fired on natural gas.	Carbon monoxide	100 mg/m ³ (at 3% O ₂ reference) ² MSUL/MSDL to base load ¹	-	At least every 6 months	BS EN 14792 BS EN 15058
A4 [HRSG Point A4 on site plan in schedule 7]	LCP414 HRSG in Auxiliary mode fired on natural gas.	Sulphur dioxide	-	-	6 monthly by calculation	Agreed in writing with the Environment Agency
A4 [HRSG Point A4 on site plan in schedule 7]	LCP414 HRSG in Auxiliary mode fired on natural gas.	Dust	-	-	Concentration by calculation every 4380 operational hours or 2 years, whichever is sooner	Agreed in writing with the Environment Agency
A4 [HRSG Point A4 on site plan in schedule 7]	LCP414 HRSG in Auxiliary mode fired on natural gas.	Oxygen	-	-	Periodic as appropriate to reference	BS EN 14789
A4 [HRSG Point A4 on site plan in schedule 7]	LCP414 HRSG in Auxiliary mode fired on natural gas.	Water vapour	-	-	Periodic as appropriate to reference	BS EN 14790

Table S3.1 Point source emissions to air - emission limits and monitoring requirements until 30th June 2020						
Emission point ref. & location	Source	Parameter	Limit (including unit)-these limits do not apply during start up or shut down.	Reference Period	Monitoring frequency	Monitoring standard or method
A4 [HRSG Point A4 on site plan in schedule 7]	LCP414 HRSG in Auxiliary mode fired on natural gas.	Stack gas volume flow	-	-	-	BS EN 16911
A4 [HRSG Point A4 on site plan in schedule 7]	LCP414 HRSG in Auxiliary mode fired on natural gas.	Stack gas temperature	-	-	Continuous As appropriate to reference	Traceable to national standards
A4 [HRSG Point A4 on site plan in schedule 7]	LCP414 HRSG in Auxiliary mode fired on natural gas.	Stack gas pressure	-	-	Continuous As appropriate to reference	Traceable to national standards
A1 [Gas turbine Point A1 on site plan in schedule 7]	Gas turbine by-pass No.1	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	Operation less than 500 hours per calendar year	-	6 monthly by calculation	Agreed in writing with the Environment Agency
A1 [Gas turbine Point A1 on site plan in schedule 7]	Gas turbine by-pass No.1	Carbon monoxide	Operation less than 500 hours per calendar year	-	6 monthly by calculation	Agreed in writing with the Environment Agency

Table S3.1 Point source emissions to air - emission limits and monitoring requirements until 30th June 2020

Emission point ref. & location	Source	Parameter	Limit (including unit)-these limits do not apply during start up or shut down.	Reference Period	Monitoring frequency	Monitoring standard or method
A1 [Gas turbine Point A1 on site plan in schedule 7]	Gas turbine by-pass No.1	Sulphur dioxide	Operation less than 500 hours per calendar year	-	6 monthly by calculation	Agreed in writing with the Environment Agency
A1 [Gas turbine Point A1 on site plan in schedule 7]	Gas turbine by-pass No.1	Oxygen	Operation less than 500 hours per calendar year	-	Periodic as appropriate to reference	BS EN 14789
A1 [Gas turbine Point A1 on site plan in schedule 7]	Gas turbine by-pass No.1	Water vapour	Operation less than 500 hours per calendar year	-	Periodic as appropriate to reference	BS EN 14790
A1 [Gas turbine Point A1 on site plan in schedule 7]	Gas turbine by-pass No.1	Stack gas volume flow	Operation less than 500 hours per calendar year	-	-	BS EN 16911
A3 [Gas turbine Point A3 on site plan in schedule 7]	Gas turbine by-pass No.2	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	Operation less than 500 hours per calendar year	-	6 monthly by calculation	Agreed in writing with the Environment Agency
A3 [Gas turbine Point A3 on site plan in schedule 7]	Gas turbine by-pass No.2	Carbon monoxide	Operation less than 500 hours per calendar year	-	6 monthly by calculation	Agreed in writing with the Environment Agency

Table S3.1 Point source emissions to air - emission limits and monitoring requirements until 30th June 2020

Emission point ref. & location	Source	Parameter	Limit (including unit)-these limits do not apply during start up or shut down.	Reference Period	Monitoring frequency	Monitoring standard or method
A3 [Gas turbine Point A3 on site plan in schedule 7]	Gas turbine by-pass No.2	Sulphur dioxide	Operation less than 500 hours per calendar year	-	6 monthly by calculation	Agreed in writing with the Environment Agency
A3 [Gas turbine Point A3 on site plan in schedule 7]	Gas turbine by-pass No.2	Oxygen	Operation less than 500 hours per calendar year	-	Periodic as appropriate to reference	BS EN 14789
A3 [Gas turbine Point A3 on site plan in schedule 7]	Gas turbine by-pass No.2	Water vapour	Operation less than 500 hours per calendar year	-	Periodic as appropriate to reference	BS EN 14790
A3 [Gas turbine Point A3 on site plan in schedule 7]	Gas turbine by-pass No.2	Stack gas volume flow	Operation less than 500 hours per calendar year	-	-	BS EN 16911

Note 1: This ELV applies where the load varies between MSUL/MSDL and base load during the sampling period. MSUL and MSDL are defined in Table S1.4.
Note 2: Under emergency (abnormal) conditions, where the GT is taken off-line and where the Operator has a credible plan to recover operation of the GT, the Oxygen reference condition is 15%.

Table S3.1a Point source emissions to air - emission limits and monitoring requirements shall apply until 16 August 2021						
Emission point ref. & location	Source	Parameter	Limit (including unit)-these limits do not apply during start up or shut down	Reference Period	Monitoring frequency	Monitoring standard or method
A2 [Gas turbine/HRSG Point A2 on site plan in schedule 7]	LCP221 Gas turbine with HRSG in supplementary mode fired on natural gas	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	82.5 mg/m ³ (at 15% O ₂ reference) MSUL/MSDL to base load ¹	Periodic	At least every 6 months	BS EN 14792
A2 [Gas turbine/HRSG Point A2 on site plan in schedule 7]	LCP221 Gas turbine with HRSG in supplementary mode fired on natural gas	Carbon monoxide	110 mg/m ³ (at 15% O ₂ reference) MSUL/MSDL to base load ¹	Periodic	At least every 6 months	BS EN 15058
A2 [Gas turbine/HRSG Point A2 on site plan in schedule 7]	LCP221 Gas turbine with HRSG in supplementary mode fired on natural gas	Sulphur dioxide	-	-	6 monthly by calculation	Concentration by calculation as agreed in writing with the Environment Agency
A2 [Gas turbine/HRSG Point A2 on site plan in schedule 7]	LCP221 Gas turbine with HRSG in supplementary mode fired on natural gas	Oxygen	-	-	Periodic as appropriate to reference	BS EN 14789

Table S3.1a Point source emissions to air - emission limits and monitoring requirements shall apply until 16 August 2021

Emission point ref. & location	Source	Parameter	Limit (including unit)-these limits do not apply during start up or shut down	Reference Period	Monitoring frequency	Monitoring standard or method
A2 [Gas turbine/HRSG Point A2 on site plan in schedule 7]	LCP221 Gas turbine with HRSG in supplementary mode fired on natural gas	Water vapour	-	-	Periodic as appropriate to reference	BS EN 14790
A2 [Gas turbine/HRSG Point A2 on site plan in schedule 7]	LCP221 Gas turbine with HRSG in supplementary mode fired on natural gas	Stack gas volume flow	-	-	-	BS EN 16911
A2 [HRSG Point A2 on site plan in schedule 7]	LCP221 HRSG in auxiliary mode fired on natural gas	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	110 mg/m ³ (at 3% O ₂ reference) ² MSUL/MSDL to base load ¹	Periodic	At least every 6 months	BS EN 14792
A2 [HRSG Point A2 on site plan in schedule 7]	LCP221 HRSG in auxiliary mode fired on natural gas	Carbon monoxide	110 mg/m ³ (at 3% O ₂ reference) ² MSUL/MSDL to base load ¹	Periodic	At least every 6 months	BS EN 15058

Table S3.1a Point source emissions to air - emission limits and monitoring requirements shall apply until 16 August 2021						
Emission point ref. & location	Source	Parameter	Limit (including unit)-these limits do not apply during start up or shut down	Reference Period	Monitoring frequency	Monitoring standard or method
A2 [HRSG Point A2 on site plan in schedule 7]	LCP221 HRSG in auxiliary mode fired on natural gas	Sulphur dioxide	-	-	6 monthly by calculation	Agreed in writing with the Environment Agency
A2 [HRSG Point A2 on site plan in schedule 7]	LCP221 HRSG in Auxiliary mode fired on natural gas.	Dust	-	-	Concentration by calculation every 4380 operational hours or 2 years, whichever is sooner	Agreed in writing with the Environment Agency
A2 [HRSG Point A2 on site plan in schedule 7]	LCP221 HRSG in auxiliary mode fired on natural gas.	Oxygen	-	-	Periodic As appropriate to reference	BS EN 14789
A2 [HRSG Point A2 on site plan in schedule 7]	LCP221 HRSG in auxiliary mode fired on natural gas	Water vapour	-	-	Periodic As appropriate to reference	BS EN 14790
A2 [HRSG Point A2 on site plan in schedule 7]	LCP221 HRSG in auxiliary mode fired on natural gas	Stack gas volume flow	-	-	-	BS EN 16941

Table S3.1a Point source emissions to air - emission limits and monitoring requirements shall apply until 16 August 2021

Emission point ref. & location	Source	Parameter	Limit (including unit)-these limits do not apply during start up or shut down	Reference Period	Monitoring frequency	Monitoring standard or method
A4 [Gas turbine/HRSG Point A4 on site plan in schedule 7]	LCP414 Gas turbine with HRSG in supplementary mode fired on natural gas	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	82.5 mg/m ³ (at 15% O ₂ reference) MSUL/MSDL to base load ¹	Periodic	At least every 6 months	BS EN 14792
A4 [Gas turbine/HRSG Point A4 on site plan in schedule 7]	LCP414 Gas turbine with HRSG in supplementary mode fired on natural gas	Carbon monoxide	110 mg/m ³ (at 15% O ₂ reference) MSUL/MSDL to base load ¹	Periodic	At least every 6 months	BS EN 15058
A4 [Gas turbine/HRSG Point A4 on site plan in schedule 7]	LCP414 Gas turbine with HRSG in supplementary mode fired on natural gas	Sulphur dioxide	-	-	6 monthly by calculation	Agreed in writing with the Environment Agency
A4 [Gas turbine/HRSG Point A4 on site plan in schedule 7]	LCP414 Gas turbine with HRSG in supplementary mode fired on natural gas	Oxygen	-	-	Periodic as appropriate to reference	BS EN 14789

Table S3.1a Point source emissions to air - emission limits and monitoring requirements shall apply until 16 August 2021

Emission point ref. & location	Source	Parameter	Limit (including unit)-these limits do not apply during start up or shut down	Reference Period	Monitoring frequency	Monitoring standard or method
A4 [Gas turbine/HRSG Point A4 on site plan in schedule 7]	LCP414 Gas turbine with HRSG in supplementary mode fired on natural gas	Water vapour	-	-	Periodic as appropriate to reference	BS EN 14790
A4 [Gas turbine/HRSG Point A4 on site plan in schedule 7]	LCP414 Gas turbine with HRSG in supplementary mode fired on natural gas	Stack gas volume flow	-	-	-	BS EN 16911
A4 [Gas turbine/HRSG Point A4 on site plan in schedule 7]	LCP414 Gas turbine with HRSG in supplementary mode fired on natural gas	Stack gas temperature	-	-	Continuous As appropriate to reference	Traceable to national standards
A4 [Gas turbine/HRSG Point A4 on site plan in schedule 7]	LCP414 Gas turbine with HRSG in supplementary mode fired on natural gas	Stack gas pressure	-	-	Continuous As appropriate to reference	Traceable to national standards
A2 & A4 [Gas turbines/HRSGs Points A2 & A4 on site plan in schedule 7]	LCP221 & LCP414 Gas turbines with HRSGs	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 S3.1a Point source emissions to air - emission limits and monitoring requirements shall apply until 16 August 2021						
Emission point ref. & location	Source	Parameter	Limit (including unit)-these limits do not apply during start up or shut down	Reference Period	Monitoring frequency	Monitoring standard or method
A4 [HRSG Point A4 on site plan in schedule 7]	LCP414 HRSG in Auxiliary mode fired on natural gas.	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	110 mg/m ³ (at 3% O ₂ reference) ² MSUL/MSDL to base load ¹	Periodic	At least every 6 months	BS EN 14792 BS EN 15058
A4 [HRSG Point A4 on site plan in schedule 7]	LCP414 HRSG in Auxiliary mode fired on natural gas.	Carbon monoxide	110 mg/m ³ (at 3% O ₂ reference) ² MSUL/MSDL to base load ¹	Periodic	At least every 6 months	BS EN 14792 BS EN 15058
A4 [HRSG Point A4 on site plan in schedule 7]	LCP414 HRSG in Auxiliary mode fired on natural gas.	Sulphur dioxide	-	-	6 monthly by calculation	Agreed in writing with the Environment Agency
A4 [HRSG Point A4 on site plan in schedule 7]	LCP414 HRSG in Auxiliary mode fired on natural gas.	Dust	-	-	Concentration by calculation every 4380 operational hours or 2 years, whichever is sooner	Agreed in writing with the Environment Agency
A4 [HRSG Point A4 on site plan in schedule 7]	LCP414 HRSG in Auxiliary mode fired on natural gas.	Oxygen	-	-	Periodic as appropriate to reference	BS EN 14789

Table S3.1a Point source emissions to air - emission limits and monitoring requirements shall apply until 16 August 2021

Emission point ref. & location	Source	Parameter	Limit (including unit)-these limits do not apply during start up or shut down	Reference Period	Monitoring frequency	Monitoring standard or method
A4 [HRSG Point A4 on site plan in schedule 7]	LCP414 HRSG in Auxiliary mode fired on natural gas.	Water vapour	-	-	Periodic as appropriate to reference	BS EN 14790
A4 [HRSG Point A4 on site plan in schedule 7]	LCP414 HRSG in Auxiliary mode fired on natural gas.	Stack gas volume flow	-	-	-	BS EN 16911
A1 [Gas turbine Point A1 on site plan in schedule 7]	Gas turbine by-pass No.1	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	Operation less than 500 hours per calendar year	-	6 monthly by calculation	Agreed in writing with the Environment Agency
A1 [Gas turbine Point A1 on site plan in schedule 7]	Gas turbine by-pass No.1	Carbon monoxide	Operation less than 500 hours per calendar year	-	6 monthly by calculation	Agreed in writing with the Environment Agency
A1 [Gas turbine Point A1 on site plan in schedule 7]	Gas turbine by-pass No.1	Sulphur dioxide	Operation less than 500 hours per calendar year	-	6 monthly by calculation	Agreed in writing with the Environment Agency

Table S3.1a Point source emissions to air - emission limits and monitoring requirements shall apply until 16 August 2021

Emission point ref. & location	Source	Parameter	Limit (including unit)-these limits do not apply during start up or shut down	Reference Period	Monitoring frequency	Monitoring standard or method
A1 [Gas turbine Point A1 on site plan in schedule 7]	Gas turbine by-pass No.1	Oxygen	Operation less than 500 hours per calendar year	-	Periodic as appropriate to reference	BS EN 14789
A1 [Gas turbine Point A1 on site plan in schedule 7]	Gas turbine by-pass No.1	Water vapour	Operation less than 500 hours per calendar year	-	Periodic as appropriate to reference	BS EN 14790
A1 [Gas turbine Point A1 on site plan in schedule 7]	Gas turbine by-pass No.1	Stack gas volume flow	Operation less than 500 hours per calendar year	-	-	BS EN 16911
A3 [Gas turbine Point A3 on site plan in schedule 7]	Gas turbine by-pass No.2	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	Operation less than 500 hours per calendar year	-	6 monthly by calculation	Agreed in writing with the Environment Agency
A3 [Gas turbine Point A3 on site plan in schedule 7]	Gas turbine by-pass No.2	Carbon monoxide	Operation less than 500 hours per calendar year	-	6 monthly by calculation	Agreed in writing with the Environment Agency
A3 [Gas turbine Point A3 on site plan in schedule 7]	Gas turbine by-pass No.2	Sulphur dioxide	Operation less than 500 hours per calendar year	-	6 monthly by calculation	Agreed in writing with the Environment Agency

Table S3.1a Point source emissions to air - emission limits and monitoring requirements shall apply until 16 August 2021

Emission point ref. & location	Source	Parameter	Limit (including unit)-these limits do not apply during start up or shut down	Reference Period	Monitoring frequency	Monitoring standard or method
A3 [Gas turbine Point A3 on site plan in schedule 7]	Gas turbine by-pass No.2	Oxygen	Operation less than 500 hours per calendar year	-	Periodic as appropriate to reference	BS EN 14789
A3 [Gas turbine Point A3 on site plan in schedule 7]	Gas turbine by-pass No.2	Water vapour	Operation less than 500 hours per calendar year	-	Periodic as appropriate to reference	BS EN 14790
A3 [Gas turbine Point A3 on site plan in schedule 7]	Gas turbine by-pass No.2	Stack gas volume flow	Operation less than 500 hours per calendar year	-	-	BS EN 16911

Note 1: This ELV applies where the load varies between MSUL/MSDL and base load during the sampling period. MSUL and MSDL are defined in Table S1.4.

Note 2: Under emergency (abnormal) conditions, where the GT is taken off-line and where the Operator has a credible plan to recover operation of the GT, the Oxygen reference condition is 15%.

Table S3.1b Point source emissions to air - emission limits and monitoring requirements shall apply from 17 th August 2021						
Emission point ref. & location	Source	Parameter	Limit (including unit)-these limits do not apply during start up or shut down	Reference Period	Monitoring frequency	Monitoring standard or method
A2 [Point A2 on site plan in Schedule 7]	LCP 221 Gas turbine with HRSG in supplementary mode fired on natural gas	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	55 mg/m ³ DLN effective to baseload ³	Yearly average	Continuous	BS EN 14181
			75 mg/m ³ DLN effective to baseload ³	Monthly mean of validated hourly averages		
			80 mg/m ³ DLN effective to baseload ³	Daily mean of validated hourly averages		
			80 mg/m ³ MSUL/MSDL to baseload			
			150 mg/m ³ DLN effective to baseload ³	95% of validated hourly averages within a calendar year		

Table S3.1b Point source emissions to air - emission limits and monitoring requirements shall apply from 17th August 2021

Emission point ref. & location	Source	Parameter	Limit (including unit)-these limits do not apply during start up or shut down	Reference Period	Monitoring frequency	Monitoring standard or method
A2 [Gas turbine/HRSG Point A2 on site plan in schedule 7]	LCP221 Gas turbine with HRSG in supplementary mode fired on natural gas	Carbon monoxide	100 mg/m ³ DLN effective to baseload ³	Yearly average	Continuous	BS EN 14181
			100 mg/m ³ DLN effective to baseload ³	Monthly mean of validated hourly averages		
			110 mg/m ³ DLN effective to baseload ³ 110 mg/m ³ MSUL/MSDL to baseload	Daily mean of validated hourly averages		
			200 mg/m ³ DLN effective to baseload ³	95% of validated hourly averages within a calendar year		
A2 [Gas turbine/HRSG Point A2 on site plan in schedule 7]	LCP221 Gas turbine with HRSG in supplementary mode fired on natural gas	Sulphur dioxide	-	-	6 monthly by calculation	Concentration by calculation as agreed in writing with the Environment Agency

Table S3.1b Point source emissions to air - emission limits and monitoring requirements shall apply from 17th August 2021						
Emission point ref. & location	Source	Parameter	Limit (including unit)-these limits do not apply during start up or shut down	Reference Period	Monitoring frequency	Monitoring standard or method
A2 [Gas turbine/HRSG Point A2 on site plan in schedule 7]	LCP221 Gas turbine with HRSG in supplementary mode fired on natural gas	Oxygen	-	-	Continuous As appropriate to reference	BS EN 14181
A2 [Gas turbine/HRSG Point A2 on site plan in schedule 7]	LCP221 Gas turbine with HRSG in supplementary mode fired on natural gas	Water vapour	-	-	Continuous As appropriate to reference	BS EN 14181
A2 [Gas turbine/HRSG Point A2 on site plan in schedule 7]	LCP221 Gas turbine with HRSG in supplementary mode fired on natural gas	Stack gas volume flow	-	-	Continuous As appropriate to reference	BS EN 16911
A2 [Gas turbine/HRSG Point A2 on site plan in schedule 7]	LCP221 Gas turbine with HRSG in supplementary mode fired on natural gas	Stack gas temperature	-	Continuous As appropriate to reference	Traceable to national standards	
A2 [Gas turbine/HRSG Point A2 on site plan in schedule 7]	LCP221 Gas turbine with HRSG in supplementary mode fired on natural gas	Stack gas pressure	-	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 17th August 2021						
Emission point ref. & location	Source	Parameter	Limit (including unit)-these limits do not apply during start up or shut down	Reference Period	Monitoring frequency	Monitoring standard or method
A2 [HRSG Point A2 on site plan in schedule 7]	LCP221 HRSG in auxiliary mode fired on natural gas	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	110 mg/m ³ (at 3% O ₂ reference) ² MSUL/MSDL to base load ¹	Periodic	At least every 6 months	BS EN 15058
A2 [HRSG Point A2 on site plan in schedule 7]	LCP221 HRSG in auxiliary mode fired on natural gas	Carbon monoxide	100 mg/m ³ (at 3% O ₂ reference) ² MSUL/MSDL to base load ¹	Periodic	At least every 6 months	BS EN 15058
A2 [HRSG Point A2 on site plan in schedule 7]	LCP221 HRSG in auxiliary mode fired on natural gas	Sulphur dioxide	-	-	6 monthly by calculation	Agreed in writing with the Environment Agency
A2 [HRSG Point A2 on site plan in schedule 7]	LCP221 HRSG in Auxiliary mode fired on natural gas.	Dust	-	-	Concentration by calculation every 4380 operational hours or 2 years, whichever is sooner	Agreed in writing with the Environment Agency
A2 [HRSG Point A2 on site plan in schedule 7]	LCP221 HRSG in auxiliary mode fired on natural gas	Oxygen	-	-	Periodic As appropriate to reference	BS EN 14789

Table S3.1b Point source emissions to air - emission limits and monitoring requirements shall apply from 17th August 2021

Emission point ref. & location	Source	Parameter	Limit (including unit)-these limits do not apply during start up or shut down	Reference Period	Monitoring frequency	Monitoring standard or method
A2 [HRSG Point A2 on site plan in schedule 7]	LCP221 HRSG in auxiliary mode fired on natural gas	Water vapour	-	-	Periodic As appropriate to reference	BS EN 14790
A2 [HRSG Point A2 on site plan in schedule 7]	LCP221 HRSG in auxiliary mode fired on natural gas	Stack gas volume flow	-	-	-	BS EN 16941
A4 [Gas turbine/HRSG Point A4 on site plan in schedule 7]	LCP 414 Gas turbine with HRSG in supplementary mode fired on natural gas	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	55 mg/m ³ DLN effective to baseload ³	Yearly average	Continuous	BS EN 14181
			75 mg/m ³ DLN effective to baseload ³	Monthly mean of validated hourly averages		
			80 mg/m ³ DLN effective to baseload ³	Daily mean of validated hourly averages		
			80 mg/m ³ MSUL/MSDL to baseload			
			150 mg/m ³ DLN effective to baseload ³	95% of validated hourly averages within a calendar year		

Table S3.1b Point source emissions to air - emission limits and monitoring requirements shall apply from 17 th August 2021						
Emission point ref. & location	Source	Parameter	Limit (including unit)-these limits do not apply during start up or shut down	Reference Period	Monitoring frequency	Monitoring standard or method
A4 [Gas turbine/HRSG Point A4 on site plan in schedule 7]	LCP414 Gas turbine with HRSG in supplementary mode fired on natural gas	Carbon monoxide	100 mg/m ³ DLN effective to baseload ³	Yearly average	Continuous	BS EN 14181
			100 mg/m ³ DLN effective to baseload ³	Monthly mean of validated hourly averages		
			110 mg/m ³ DLN effective to baseload ³	Daily mean of validated hourly averages		
			110 mg/m ³ MSUL/MSDL to baseload			
			200 mg/m ³ DLN effective to baseload ³	95% of validated hourly averages within a calendar year		
A4 [Gas turbine/HRSG Point A4 on site plan in schedule 7]	LCP414 Gas turbine with HRSG in supplementary mode fired on natural gas	Sulphur dioxide	-	-	6 monthly by calculation	Agreed in writing with the Environment Agency
A4 [Gas turbine/HRSG Point A4 on site plan in schedule 7]	LCP414 Gas turbine with HRSG in supplementary mode fired on natural gas	Oxygen	-	-	Continuous As appropriate to reference	BS EN 14181

Table S3.1b Point source emissions to air - emission limits and monitoring requirements shall apply from 17th August 2021						
Emission point ref. & location	Source	Parameter	Limit (including unit)-these limits do not apply during start up or shut down	Reference Period	Monitoring frequency	Monitoring standard or method
A4 [Gas turbine/HRSG Point A4 on site plan in schedule 7]	LCP414 Gas turbine with HRSG in supplementary mode fired on natural gas	Water vapour	-	-	Continuous As appropriate to reference	BS EN 14181
A4 [Gas turbine/HRSG Point A4 on site plan in schedule 7]	LCP414 Gas turbine with HRSG in supplementary mode fired on natural gas	Stack gas volume flow	-	-	Continuous As appropriate to reference	BS EN 14181
A4 [Gas turbine/HRSG Point A4 on site plan in schedule 7]	LCP414 Gas turbine with HRSG in supplementary mode fired on natural gas	Stack gas temperature	-	Continuous As appropriate to reference	Traceable to national standards	
A4 [Gas turbine/HRSG Point A4 on site plan in schedule 7]	LCP414 Gas turbine with HRSG in supplementary mode fired on natural gas	Stack gas pressure	-	Continuous As appropriate to reference	Traceable to national standards	
A2 & A4 [Gas turbines/HRSGs Points A2 & A4 on site plan in schedule 7]	LCP221 & LCP414 Gas turbines with HRSGs	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 [HRSG Point A4 on site plan in schedule 7]	LCP414 HRSG in Auxiliary mode fired on natural gas.	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	110 mg/m ³ (at 3% O ₂ reference) ² MSUL/MSDL to baseload	Periodic	At least every 6 months	BS EN 15058

Table S3.1b Point source emissions to air - emission limits and monitoring requirements shall apply from 17th August 2021						
Emission point ref. & location	Source	Parameter	Limit (including unit)-these limits do not apply during start up or shut down	Reference Period	Monitoring frequency	Monitoring standard or method
A4 [HRSG Point A4 on site plan in schedule 7]	LCP414 HRSG Auxiliary mode fired on natural gas.	Carbon monoxide	100 mg/m ³ (at 3% O ₂ reference) ² MSUL/MSDL to base load ¹	Periodic	At least every 6 months	BS EN 15058
A4 [HRSG Point A4 on site plan in schedule 7]	LCP414 HRSG in Auxiliary mode fired on natural gas.	Sulphur dioxide	-	-	6 monthly by calculation	Agreed in writing with the Environment Agency
A4 [HRSG Point A4 on site plan in schedule 7]	LCP414 HRSG in Auxiliary mode fired on natural gas.	Dust	-	-	Concentration by calculation every 4380 operational hours or 2 years, whichever is sooner	Agreed in writing with the Environment Agency
A4 [HRSG Point A4 on site plan in schedule 7]	LCP414 HRSG in Auxiliary mode fired on natural gas.	Oxygen	-	-	Periodic as appropriate to reference	BS EN 14789
A4 [HRSG Point A4 on site plan in schedule 7]	LCP414 HRSG in Auxiliary mode fired on natural gas.	Water vapour	-	-	Periodic as appropriate to reference	BS EN 14790

Table S3.1b Point source emissions to air - emission limits and monitoring requirements shall apply from 17th August 2021						
Emission point ref. & location	Source	Parameter	Limit (including unit)-these limits do not apply during start up or shut down	Reference Period	Monitoring frequency	Monitoring standard or method
A4 [HRSG Point A4 on site plan in schedule 7]	LCP414 HRSG in Auxiliary mode fired on natural gas.	Stack gas volume flow	-	-	-	BS EN 16911
A1 [Gas turbine Point A1 on site plan in schedule 7]	Gas turbine by-pass No.1	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	Operation less than 500 hours per calendar year	-	6 monthly by calculation	Agreed in writing with the Environment Agency
A1 [Gas turbine Point A1 on site plan in schedule 7]	Gas turbine by-pass No.1	Carbon monoxide	Operation less than 500 hours per calendar year	-	6 monthly by calculation	Agreed in writing with the Environment Agency
A1 [Gas turbine Point A1 on site plan in schedule 7]	Gas turbine by-pass No.1	Sulphur dioxide	Operation less than 500 hours per calendar year	-	6 monthly by calculation	Agreed in writing with the Environment Agency
A1 [Gas turbine Point A1 on site plan in schedule 7]	Gas turbine by-pass No.1	Oxygen	Operation less than 500 hours per calendar year	-	Periodic as appropriate to reference	BS EN 14789
A1 [Gas turbine Point A1 on site plan in schedule 7]	Gas turbine by-pass No.1	Water vapour	Operation less than 500 hours per calendar year	-	Periodic as appropriate to reference	BS EN 14790

Table S3.1b Point source emissions to air - emission limits and monitoring requirements shall apply from 17th August 2021						
Emission point ref. & location	Source	Parameter	Limit (including unit)-these limits do not apply during start up or shut down	Reference Period	Monitoring frequency	Monitoring standard or method
A1 [Gas turbine Point A1 on site plan in schedule 7]	Gas turbine by-pass No.1	Stack gas volume flow	Operation less than 500 hours per calendar year	-	-	BS EN 16911
A3 [Gas turbine Point A3 on site plan in schedule 7]	Gas turbine by-pass No.2	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	Operation less than 500 hours per calendar year	-	6 monthly by calculation	Agreed in writing with the Environment Agency
A3 [Gas turbine Point A3 on site plan in schedule 7]	Gas turbine by-pass No.2	Carbon monoxide	Operation less than 500 hours per calendar year	-	6 monthly by calculation	Agreed in writing with the Environment Agency
A3 [Gas turbine Point A3 on site plan in schedule 7]	Gas turbine by-pass No.2	Sulphur dioxide	Operation less than 500 hours per calendar year	-	6 monthly by calculation	Agreed in writing with the Environment Agency
A3 [Gas turbine Point A3 on site plan in schedule 7]	Gas turbine by-pass No.2	Oxygen	Operation less than 500 hours per calendar year	-	Periodic as appropriate to reference	BS EN 14789
A3 [Gas turbine Point A3 on site plan in schedule 7]	Gas turbine by-pass No.2	Water vapour	Operation less than 500 hours per calendar year	-	Periodic as appropriate to reference	BS EN 14790

Table S3.1b Point source emissions to air - emission limits and monitoring requirements shall apply from 17th August 2021						
Emission point ref. & location	Source	Parameter	Limit (including unit)-these limits do not apply during start up or shut down	Reference Period	Monitoring frequency	Monitoring standard or method
A3 [Gas turbine Point A3 on site plan in schedule 7]	Gas turbine by-pass No.2	Stack gas volume flow	Operation less than 500 hours per calendar year	-	-	BS EN 16911
<p>Note 1: This ELV applies where the load varies between MSUL/MSDL and base load during the sampling period. MSUL and MSDL are defined in Table S1.4.</p> <p>Note 2: Under emergency (abnormal) conditions, where the GT is taken off-line <u>and</u> where the Operator has a credible plan to recover operation of the GT, the Oxygen reference condition is 15%.</p> <p>Note 3: This ELV applies where the load varies between DLN effective to baseload during the sampling period are defined in Table S1.5.</p>						

Table S3.2 Point Source emissions to water (other than sewer) – emission limits and monitoring requirements

Emission point ref. & location	Parameter	Source	Limit (incl. unit)	Reference period	Monitoring frequency	Monitoring standard or method
W1 discharge from 8 tonne drain sump tank (reference W2 in application) to Tronox Pigment UK Limited effluent flume.	pH	Boiler feed-water treatment effluent, boiler blow-down waters, condensate drainage and washings from turbine blade cleaning	Note 1	Continuous	Weekly	BS EN 6068-2.50
W1 discharge from 8 tonne drain sump tank (reference W2 in application) to Tronox Pigment UK Limited effluent flume.	Oil or grease	Boiler feed-water treatment effluent, boiler blow-down waters, condensate drainage and washings from turbine blade cleaning	No visible emission	24 hour period beginning 00.01	Daily	-

Note 1: Records of effluent pH sent to Tronox Pigment UK Limited shall be retained and available for inspection.

Table S3.3 Annual limits (excluding start up and shut down except where otherwise stated).				
Substance	Medium	Limit (including unit)		Emission Points
Oxides of nitrogen	Air	Assessment year	LCP TNP Limit	Define each LCP as per the TNP
		01/01/16 and subsequent years until 31/12/19	Emission allowance figure shown in the TNP Register as at 30 April the following year	
		01/01/20-30/06/20		

Table S3.4 Process monitoring requirements				
Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
LCP 221 and LCP 414	Net total fuel utilisation	After each modification 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	A2, A4	Every 6 months until 16th August thereafter every 3 months	1 January, 1 July or 1 January, 1 April, 1 July, 1 October
	A1 & A3	Every 6 months	1 January, 1 July
Carbon monoxide	A2, A4	Every 6 months until 16th August thereafter every 3 months	1 January, 1 July or 1 January, 1 April, 1 July, 1 October
	A1 & A3	Every 6 months	1 January, 1 July
Sulphur dioxide	A1, A2, A3 & A4	Every 6 months	1 January, 1 July
Dust	A2, A4	Every 6 months	1 January, 1 July
Number of periods and duration of LCP221 and LCP414 within start-up configuration.	A1, A2, A3, A4	Every 6 months	1 January, 1 July
Number of periods and duration of LCP221 and LCP414 operating HRSG only.	A2, A4	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

Table S4.2 Resource Efficiency Metrics	
Parameter	Units
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 S4.4 Reporting forms		
Media/ parameter	Reporting format	Agency recipient
Air & Energy	Form IED AR1 – SO ₂ , NO _x and dust mass emission and energy. Form as agreed in writing by the Environment Agency.	National and Area Office
LCP	Form IED HR1 – operating hours. Form as agreed in writing by the Environment Agency.	Area Office
Air	Form IED RTA1 – TNP quarterly emissions summary log	National and Area Office
LCP	Form IED BD1 - cumulative annual rolling malfunction and breakdown hours. Form as agreed in writing by the Environment Agency.	Area Office
Air	Form IED MF1 – pollutant concentrations when during any day with malfunction or breakdown of abatement plant. Form as agreed in writing by the Environment Agency.	Area Office
Air	Form IED PM1 - discontinuous monitoring and load. Form as agreed in writing by the Environment Agency.	Area Office
Air	Form IED CON 2 – continuous monitoring. Form as agreed in writing by the Environment Agency	Area Office
CEMs	Form IED CEM – invalidation Log. Form as agreed in writing by the Environment Agency.	Area Office
Resource Efficiency	Form REM1 – resource efficiency annual report Form as agreed in writing by the Environment Agency.	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

Part C Malfunction or Breakdown of LCP abatement equipment

Permit Number	
Name of operator	
Location of Facility	
LCP Number	
Malfunction or breakdown	
Date of malfunction or breakdown	

(a) Notification requirements for any malfunction and breakdown of abatement equipment as defined by the Industrial Emission Directive*.	
To be notified within 48 hours of abatement equipment malfunction and breakdown	
Time at which malfunction or breakdown commenced	
Time at which malfunction or breakdown ceased	
Duration of the breakdown event in hours and minutes	
Reasons for malfunction or breakdown	
Where the abatement plant has failed, give the hourly average concentration of all measured pollutants.	
Cumulative breakdown operation in current year (at end of present event)	
Cumulative malfunction operation in current year (at end of present event)	
Name**	
Post	
Signature **	
Date	

* See section 3.6 and Appendix E of ESI Compliance Protocol for guidance

** 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.

“breakdown” has the meaning given in the ESI IED Compliance Protocol for Utility Boilers and Gas Turbines.

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

“CEN” means Comité Européen de Normalisation.

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

“commissioning” means testing of the installation that involves any operation of a Large Combustion Plant referenced in schedule 1, table S1.1

“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 windshaft 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.

“malfunction” has the meaning given 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/feedstock energy input at the gasification unit boundary over a given period of time. For a gasification unit.

“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.

“pests” means Birds, Vermin and Insects.

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

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

“SI” means site inspector.

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

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

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





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END OF PERMIT