WQ1 APPENDIX 6 - DRAX POWER STATION ENVIRONMENTAL PERMIT

Drax Bioenergy with Carbon Capture and Storage

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations, 2009 - Regulation 5(2)(k)

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Applicant: Drax Power Limited

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Notice of variation and consolidation with introductory note

The Environmental Permitting (England & Wales) Regulations 2016

Drax Power Limited

Drax Power Station
Selby
North Yorkshire
Y08 8PH

Variation application number

EPR/VP3530LS/V019

Permit number

EPR/VP3530LS

Drax Power Station
Permit number EPR/VP3530LS

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 1 of the notice specifies the conditions that have been varied and schedule 2 comprises a consolidated permit which reflects the variations being made. Only the variations specified in schedule 1 are subject to a right of appeal.

This variation makes the following changes to the permit:

- Addition of emission points to air;
- Addition of an improvement condition regarding submission of an updated site condition report and baseline survey; and
- Amended site plan showing revised site boundary.

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

Drax Power Station is located near Selby, North Yorkshire.

Drax Power Station began generating electricity after its first 660 MW coal fired unit was commissioned in 1974. In 1975, Drax Power Station was officially opened, with three coal fired units and a total generating capacity of just under 2,000 MW. Eleven years later, in 1986, Drax Power Station doubled in size and became the largest power station in the UK.

The installation now comprises four biomass fired units (1-4) and two coal fired units (5 and 6). Heavy fuel oil is used for start-up and stabilisation of the six units of LCP91. The installation has three oil-fired open cycle gas turbines (LCP454) used for start-up and grid support roles including black start. These units are only run for a few hundred hours per year at most.

- LCP91 – total thermal input of 10,000 MW
- LCP454 – total thermal input of 420 MW

The permit also includes the Ouse Renewable Energy Plant which has not yet been built and has not been assigned an LCP number. It will be fired on biomass and will have a single circulating pressurised fluidised bed (CFB) boiler.

A considerable stock of coal is held in profiled stockpiles on the installation site. Biomass stock is also held as a fuel for the units 1-4. A limited stock of petroleum coke is also held on site.

Combustion gases from LCP91 containing carbon dioxide, oxides of nitrogen, sulphur dioxide, nitrogen (from the combustion air and fuel) and water vapour together with smaller amounts of other substances including dust, are discharged from three separate flues (two boiler units per flue) rising inside a single windshield at a height of approximately 259m above ground.

LCP91 is retrofitted with flue gas desulphurisation equipment (FGD) to remove approximately 90% of sulphur dioxide in the combustion gases from the coal units 5 and 6. The FGD is turned off for units which are running on 100% biomass.

A Reverse Osmosis water treatment plant is installed on the site to provide high quality water for use in the production of Selective Non-Catalytic Reduction (SNCR) reagent. Units 1-5 have been fitted with SNCR which will be used to minimise NO_x emissions in order to comply with IED and BREF. Unit 5 will be fuelled on coal and will operate for <1500 hours. As it will be operating with a highly variable load profile then the applicability of SNCR will be limited on Unit 5.

Ash produced is sold where possible or otherwise transported after, conditioning with water, to an adjacent ash disposal facility at Barlow (operating under a separate EPR permit). Under some conditions surface water from the Barlow site overflows to the station water system. Checks on this have been included in the process monitoring requirements of the permit. Slurried pulverised fuel ash (PFA) sourced from Barlow is used in the biomass fired boilers to mitigated impacts of corrosion, fouling and slagging.

Furnace Bottom Ash (FBA) taken from the operational coal units (units 5 and 6) is reburnt in these units to extract any remaining heat. It is either introduced into the furnace neat or as a blend with advantaged fuels. Where advantaged fuels being predominantly 'pond fines' which is slurried coal produced by coal washing.

The station also uses oil (heavy fuel oil, bio-oil and PFO) for start-up and flame stabilisation. Gypsum produced as a product of the FGD process is processed on site and sold.

The installation discharges large volumes of cooling water, abstracted from the River Ouse, back to the same river after use in the cooling circuit after subsequent temperature reduction in natural draught cooling towers. These towers also discharge water vapour to the atmosphere. This is frequently more visible than the discharge of combustion gases.

The schedules specify the changes made to the permit.

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

Status log of the permit		
Description	**Date**	**Comments**
Application EPR/VP3530LS/A001	Duly Made 30/03/2006	
Additional Information received		23/08/2006, 29/08/2006 and applicant's written clarification received up to 23/07/2007plus grid references of main emission points 17/09/2007
Permit determined EPR/VP3530LS	30/10/2007	
Variation Notice SP3039XR (EPR/VP3530LS/V002) Issued	20/12/2007	
Variation application KP3937KC (EPR/VP3530LS/V003) Received	21/01/2010	
Additional Information Received	11/02/2010	
Variation determined EPR/VP3530LS/V003 (KP3937KC)	01/03/2010	
Variation application EPR/VP3530LS/V004	Duly Made 11/05/2010	
Additional information received via Schedule 5 notice (1)		
Additional information received via Schedule 5 notice (2)	17/08/2010	14/09/2010
Substantial Variation and consolidation EPR/VP3530LS/V004	23/02/2011	

Status log of the permit		
Description	**Date**	**Comments**
Variation determined EPR/VP3530LS/V005	11/03/2013	Environment Agency Initiated Variation, to incorporate Eel Regulations Improvement Condition.
Application EPR/VP3530LS/V006 (variation)	06/02/2013	Application to vary the permit. Application not duly made and returned on 13/03/2013.
Application EPR/VP3530LS/V007 Variation	Duly Made 14/10/2013	Application to vary permit to allow 3 boilers to run on 100% Biomass.
Additional Information received	18/12/2013 & 20/12/2013	Response to Schedule 5 notice dated 22/11/2013
Additional Information received	31/01/2014	Response to Schedule 5 notice dated 08/01/2014
Variation determined EPR/VP3530LS/V007	25/02/2014	Varied and consolidated Permit
Application EPR/VP3530LS/V008 (Variation)	Duly Made 10/03/2014	Application to permit the Co-combustion of coal and biomass in Unit 3 as part of an operational trial.
Variation EPR/VP3530LS/V008 determined	22/05/2014	
Application EPR/VP3530LS/V009 (Variation)	Duly Made 22/05/2014	Application for SNCR trial on Units 3 and 4 and for amendments with respect to the discharge of cooling water.
Variation determined EPR/VP3530LS/V009 (PAS/billing reference: VP3530LS)	19/08/2014	
Variation determined EPR/VP3530LS/V010 (PAS/billing reference: MP3535WN)	Issued 25/09/2014	Environment Agency Initiated Variation issued, to add an improvement condition requiring a cost benefit appraisal to ensure compliance with the Eels Regulations. Effective 1/10/14.
Regulation 60 Notice sent to the Operator	31/10/2014	Issue of a Notice under Regulation 60(1) of the EPR. Environment Agency Initiated review and variation to vary the permit under IED to implement the special provisions for LCP under Chapter III, introducing new Emission Limit Values (ELVs) applicable to LCP, referred to in Article 30(2) and set out in Annex V. The permit is also updated to modern conditions.
Application received	16/02/2015	Administrative variation to carry out a newly prescribed activity under the Industrial Emissions Directive.
Regulation 60 Notice response	27/03/2015	Response received from the Operator.
Application received EPR/VP3530LS/V012	21/04/2015	Substantial variation to add a new combustion activity with carbon capture. Application withdrawn.
Additional information received	28/05/2015	Response to request for further information (RFI) dated 14/05/15.

Status log of the permit		
Description	**Date**	**Comments**
Regulation 60 Notice sent to the Operator	21/10/2015	Notice to require further justification for the proposed SNCR system.
Regulation 60 Notice response	16/11/2015	Response received from the Operator.
Variation determined EPR/VP3530LS/V011 (PAS Billing ref: XP3638RM)	30/12/2015	Varied and consolidated permit issued in modern condition format. Variation effective from 01/01/2016.
Application withdrawn EPR/VP3530LS/V012	13/01/2016	Operator withdrawal.
EPR/VP3530LS/V013	-	Logged in error, cannot be reused.
Application received EPR/VP3530LS/V014	Duly made 01/11/2016	Application for normal variation.
Request from the Operator via email for a further requirement to be included in Variation EPR/VP3530LS/V014	01/12/2016	Application for variation to introduce slurried Pulverised Fuel Ash sourced from Barlow Mound into biomass fired boilers in order to mitigate impacts of corrosion fouling and slagging.
Response to Schedule 5 Notice received	08/12/2016	
Variation determined EPR/VP3530LS Billing reference MP3138DW	12/05/2017	Varied permit issued.
Application EPR/VP3530LS/V015 (variation)	Duly made 16/06/2018	Application for variation to permit use of biomass fuels from high arsenic regions. Renumbered from variation V016, as issued before Repower variation
Variation determined EPR/VP3530LS Billing reference ZP3139QY	01/10/2018	Varied permit issued.
Application EPR/VP3530LS/V016 (Variation)	Duly made 20/07/2018	Application for authorisation to trial bio-energy carbon capture technology. Renumbered from variation V017, as issued before Repower variation.
Variation determined EPR/VP3530LS Billing reference CP3335QA	30/10/2018	Varied permit issued.
Application EPR/VP3530LS/V017 (Variation)	-	Application Withdrawn 31/10/19
Regulation 61 Notice sent to the Operator	01/05/2018	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.	31/10/2018	Response received from the Operator.
Additional Information Received	26/09/2019	Further details regarding compliance and operating techniques identified in response to BAT Conclusions 2, 3, 4, 5, 6, 9, 12, 13, 14, 15, 16, 17, 19, 23 and 24

Status log of the permit		
Description	**Date**	**Comments**
Additional Information Received	20/12/2019	Further details regarding compliance and operating techniques identified in response to BAT Conclusion 4, 5, 17 and 19.
Additional Information Received	16/01/2020	Further details regarding compliance and operating techniques identified in response to BAT Conclusion 4, 5, 17 and 19.
Additional Information Received	24/02/2020	Details regarding how the OCGT will comply with the BAT conclusions.
Regulation 61 Notice sent to the Operator	23/01/2020	Issue of a Notice under Regulation 61(1) of the EPR. Requesting BAT compliance route and electrical efficiency of the plant.
Regulation 61 notice response	30/03/2020	Response received from the Operator.
Variation determined EPR/VP3530LS/V018	18/06/2020	Varied and consolidated permit issued. Effective from 01/07/2020.
Variation application EPR/VP3530LS/V019	Duly made 12/06/2020	Application to increase site area and add exhaust vent emission points.
Additional information EPR/VP3530LS/V019	01/07/2020	Historical maps.
Variation determined EPR/VP3530LS/V019 (Billing ref: UP3305BA)	29/07/2020	Varied and consolidated permit issued.

Other Part A installation permits relating to this installation		
Operator	**Permit number**	**Date of issue**
Drax Power Limited	BW9395IF	29/03/2007

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/VP3530LS

Issued to

Drax Power Limited ("the operator")

whose registered office is

Drax Power Station
Selby
North Yorkshire
YO8 8PH

company registration number 04883589

to operate a regulated facility at

Drax Power Station
Selby
North Yorkshire
Y08 8PH

to the extent set out in the schedules.

The notice shall take effect from 29/07/2020.

Name	Date
Claire Roberts	**29/07/2020**

Authorised on behalf of the Environment Agency

Schedule 1

The following conditions were varied as a result of the application made by the operator:

- Table S1.2, as referenced by conditions 2.3.1, 2.3.3 and 2.3.7, is amended to include operating techniques for the additional emission points.
- Table S1.3, as referenced by condition 2.4.1, is amended to add improvement condition IC50D.
- Tables S3.1 and S3.1a, as referenced by conditions 2.3.9, 3.1.1, 3.1.3, 3.1.4, 3.5.1, 3.5.4 and 3.6.7, are amended to include the additional emission points.
- Schedule 7, as referenced by condition 2.2.1, is amended by replacing the site plan with a revised site plan.

Schedule 2 – consolidated permit

Consolidated permit issued as a separate document.

Permit

The Environmental Permitting (England and Wales) Regulations 2016

Permit number

EPR/VP3530LS

This is the consolidated permit referred to in the variation and consolidation notice for application EPR/VP3530LS/V019 authorising,

Drax Power Limited ("the operator"),

whose registered office is

Drax Power Station
Selby
North Yorkshire
YO8 8PH

company registration number 04883589

to operate an installation at

Drax Power Station
Selby
North Yorkshire
Y08 8PH

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

Name	Date
Claire Roberts	**29/07/2020**

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.

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").

2.1.2 For the following activities referenced in schedule 1, table S1.1: AR6. Waste authorised by this permit shall be clearly distinguished from any other waste on the site.

2.2 The site

2.2.1 The activities shall not extend beyond the site, being the land shown edged in green on the site plan at schedule 7 to this permit.

2.3 Operating techniques

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

2.3.2 For the following activities referenced in schedule 1, table S1.1: LCP91 and LCP454. 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: LCP454. The activities shall not operate for more than 500 hours per year.

2.3.6 For the following activities referenced in schedule 1, table S1.1: LCP91, coal fired units 5 and 6. The activities shall operate for less than 1,500 hours per year as a rolling average over a period of five years with a maximum of 2,250 hours operated in any one year in line with Section 4.0 of Version 5.1: The Protocol for IED Annex V 1500 Limited Hours Derogation July 2015 or any later version.

2.3.7 For the following activities referenced in schedule 1, table S1.1: LCP91 and LCP454. The end of the start up period and the start of the shutdown period shall conform to the specifications set out in Schedule 1, tables S1.2 and S1.5.

2.3.8 For the following activities referenced in schedule 1, table S1.1: LCP91. 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, or shall operate the activities using low polluting fuels;

(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.

2.3.9 The emission limit values from emission point A1 and A2 listed in tables S3.1 and S3.1a of Schedule 3 following the issue of a Black Start Instruction by the National Grid shall be disregarded for the purposes of compliance whilst that instruction remains effective in accordance with the report submitted in response to improvement condition IC45D.

2.3.10 Waste shall only be accepted if:

(a) it is of a type and quantity listed in schedule 2, table S2.2 or S2.3; and

(b) it conforms to the description in the documentation supplied by the producer and holder.

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

(a) the nature of the process producing the waste;

(b) the composition of the waste;

(c) the handling requirements of the waste;

(d) the hazardous property associated with the waste, if applicable; and

(e) the waste code of the waste.

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

2.4 Improvement programme

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

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

2.5 Pre-operational conditions

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

3 Emissions and monitoring

3.1 Emissions to water, air or land

3.1.1 There shall be no point source emissions to water, air or land except from the sources and emission points listed in schedule 3, tables S3.1, S3.1a, S3.2 and S3.2a.

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

3.1.3 The emission values from emission point A1, measured during periods of abatement equipment malfunction and breakdown shall be disregarded for the purposes of compliance with Tables S3.1 and S3.1a emission limit values.

3.1.4 Total annual emissions from the LCP emission point(s) set out in schedule 3 tables S3.1, S3.1a, S3.2, S3.2a and S3.3 of a substance listed in schedule 3 table S3.3 shall not exceed the relevant limit in table S3.3.

3.1.5 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, 3.1a, 3.2, S3.2a and S3.3;

(b) surface water or groundwater specified in table S3.4; and

(c) process monitoring specified in table S3.5; and

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, S3.2, S3.2a and S3.3 unless otherwise agreed in writing by the Environment Agency.

3.6 Monitoring for Large Combustion Plant

3.6.1 All monitoring required by this permit shall be carried out in accordance with the provisions of Annex V of the Industrial Emissions Directive and the Large Combustion Plant Best Available Techniques Conclusions.

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

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

(b) implement the approved proposals.

3.6.3 Continuous measurement systems on emission points from the LCP 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, daily and yearly 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 conditions 2.3.5 and 2.3.6 apply, the hours of operation in any year; and

(e) where condition 2.3.8 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 1 month of the end of each quarter, the operator shall submit to the Environment Agency using the form made available for the purpose, the information specified on the form relating to the site and the waste accepted and removed from it during the previous quarter, if during that quarter the total amount accepted exceeds 100 tonnes of non-hazardous waste or 10 tonnes of hazardous waste.

4.2.6 Within 10 days of the notification of abatement equipment malfunction or breakdown (condition 2.3.8) the operator shall submit an Air Quality Risk Assessment as outlined in the IED Compliance Protocol (condition 2.3.2).

4.2.7 For the following activities referenced in schedule 1, table S1.1: LCP91. 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 2.3.8 the operator shall notify the Environment Agency within 48 hours unless notification has already been made under (a) to (c) above.

4.3.2 Any information provided under condition 4.3.1 (a)(i), 4.3.1 (b)(i) where the information relates to the breach of a condition specified in the permit, or 4.3.1 (d) where the information relates to malfunction or breakdown of abatement equipment shall be confirmed by sending the information listed in schedule 5 to this permit within the time period specified in that schedule.

4.3.3 Where the Environment Agency has requested in writing that it shall be notified when the operator is to undertake monitoring and/or spot sampling, the operator shall inform the Environment Agency when the relevant monitoring and/or spot sampling is to take place. The operator shall provide this information to the Environment Agency at least 14 days before the date the monitoring is to be undertaken.

4.3.4 The Environment Agency shall be notified within 14 days of the occurrence of the following matters, except where such disclosure is prohibited by Stock Exchange rules:

Where the operator is a registered company:

(a) any change in the operator's trading name, registered name or registered office address; and

(b) any steps taken with a view to the operator going into administration, entering into a company voluntary arrangement or being wound up.

Where the operator is a corporate body other than a registered company:

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

(d) any steps taken with a view to the dissolution of the operator.

In any other case:

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

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

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

4.3.5 Where the operator proposes to make a change in the nature or functioning, or an extension of the activities, which may have consequences for the environment and the change is not otherwise the subject of an application for approval under the Regulations or this permit:

(a) the Environment Agency shall be notified at least 14 days before making the change; and

(b) the notification shall contain a description of the proposed change in operation.

4.3.6 The Environment Agency shall be given at least 14 days notice before implementation of any part of the site closure plan.

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

4.4 Interpretation

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

4.4.2 In this permit references to reports and notifications mean written reports and notifications, except where reference is made to notification being made "immediately", in which case it may be provided by telephone.

Schedule 1 – Operations

Table S1.1 activities			
Activity reference	**Activity listed in Schedule 1 of the EP Regulations**	**Description of specified activity**	**Limits of specified activity**
AR1	Section 1.1 A(1) (a): Burning any fuel in an appliance with a rated thermal input of 50 megawatts or more.	LCP91: Operation of six boilers burning coal (units 5 and 6) and biomass (units 1 – 4) and for production of steam and electricity (10,000 MW aggregated net rated thermal input) LCP454: Operation of three open cycle gas turbines (OCGTs) burning gas oil to produce electricity (420 MW aggregated net rated thermal input) Operation of two package boilers burning gas-oil to produce steam to keep the heavy fuel oil mobile. (20 MW aggregated net rated thermal input) Ouse Renewable Energy Plant: Non-operational LCP	From receipt of coal, petroleum coke, furnace bottom ash at rates of up to 25% by mass per unit, heavy fuel oil, gas oil or biomass to discharge of exhaust gases and wastes, and the generation and export of electricity, including operation of SCR or SNCR. LCP454 shall only for start-up and grid support roles including black start. Limited to 500 hours per year as specified in condition 2.3.5. Wastes as specified in Table S2.2
AR2	Section 4.2 Part A(1)(a)(iv) Producing inorganic chemicals such as – salts	Operation of Flue Gas Desulphurisation (FGD) units	Receipt of limestone to dispatch of gypsum off site and discharge of wastewater to the wastewater treatment plant.
AR3	Section 5.4 Part A(1)(a)(ii): Disposal of non-hazardous waste with a capacity exceeding 50 tonnes per day - physico-chemical treatment;	Treatment of waste water from the flue gas desulphurisation plant	Discharge of wastewater from the FGD process to the discharge from site.
AR4	Section 3.5 Part B (f): Loading, unloading or storing pulverised fuel ash in bulk prior to further transportation in bulk	Pulverised fuel ash (PFA) handling and storage	Removal of ash from the combustion process to despatch from site.
AR5	Section 4.8 Part B (a)(iii): The storage in tanks of anhydrous ammonia	The storage and use of anhydrous ammonia over 100 tonnes storage capacity.	For use with abatement equipment (such as SCR) fitted to any or all of six main units discharging to air via point A1

Table S1.1 activities			
Activity reference	**Activity listed in Schedule 1 of the EP Regulations**	**Description of specified activity**	**Limits of specified activity**
AR6	Section 5.4 Part A(1)(b)(iii): treatment of slags and ashes	Treating pulverised fuel ash (PFA)	From receipt of PFA from the combustion process to dispatch off site. Wastes as specified in Table S2.3
AR7	Section 5.4 Part A(1)(b)(iii): treatment of slags and ashes	Treating pulverised fuel ash (PFA)	From receipt of PFA from Barlow Mound (BW9395IF) to slurrification and use as a mitigant against boiler corrosion at a rate of 15t/hr per unit to dispatch off site. Wastes as specified in Table S2.3
	Directly Associated Activity		
AR8	Directly associated activity	Fuel storage	From receipt of raw materials to dispatch for use
AR9	Directly associated activity	Water treatment	From receipt of raw materials to dispatch to effluent or water system.
AR10	Directly associated activity	The use of water from the River Ouse in the process, primarily to condense steam.	The pumping, filtering and chemical treatment of the water, its use in the condensers and cooling water system to the discharge of the water back to the River Ouse.
AR11	Directly associated activity	Reverse Osmosis	From the use of cooling water from the North Dock cooling circuit flumes to the production of high quality water for use with the SNCR's, to the return of reject water to the North Dock flumes to be discharged via the cooling water purge.
AR12	Directly associated activity	Surface water drainage	Handling and storage of site drainage until discharge to the site surface water system.

Table S1.2 Operating techniques		
Description	**Parts**	**Date Received**
Application	Documents 3 and 4 of application VP3530 and material referenced in these sections (covering application response to sections 2.1 and 2.2 of application) except that the installation boundary shall be as defined by Figure 2.1(part) in Schedule 2 as reproduced in section 2 of this permit (V004) and monitoring shall be as defined in section 4 of the permit where this differs from B2.10 (Monitoring) in document 3 of application VP3530	31/03/06 except modified V004 boundary plan Figure 2.1 supplied 20/01/2011
Schedule 4 Notice Response	Response to question D4 detailing revised installation boundary Fig 4.2 a) – further revised to exclude Cemex plant area as Fig 4.2 b)	22/08/2006
Schedule 4 Notice Response	Response to question D10 part 10.3 detailing revised procedure for reprocessing acid clean waters (further conditions in S1.3 also apply)	22/08/2006
Schedule 4 Notice Response	Response to question D27 part 5 detailing future use of petroleum coke.(further conditions in S1.3 and S1.4 also apply)	22/08/2006
Document 14 –Raw Materials	14.4.2, Table 14.2 and preceding paragraph “The coals burnt at Drax generally fall into the broad specification given in Table 14.2 although fuels outside these specifications can be burnt after the consideration of the technical and environmental implications”	31/03/2006
Fig 8-1 surface water detail	All	07/03/2007
Fugitive emissions plan	All	25/05/2008
Variation application EA/EPR/VP3530LS/ V003	Application details to burn Processed Fuel Oil (PFO)	21/01/2010
Substantial Variation application EA/EPR/VP3530LS/ V004	Part B of the application form	Duly made 11/05/2010
Schedule 5 notice (1) for extra information for V004	Operator responses to extra information questions	Responses dated 12/07/2010
Schedule 5 notice (2) for extra information for V004	Further Operator responses to extra information questions	Responses dated 14/09/2010
Revised plan of installation – Fig 2.1 (part) - boundary modified as per information in application VP3530LS/V004	Revised boundary plan submitted by applicant including extra area near Ouse REP	Version as submitted on 20/01/2011
Application for variation EPR/VP3530LS/V007	Sections 2, 3, 4, 5, 6, 7, 9, 10, 11 & 14 of the “Provision of information for Unit conversion to Biomass at Drax Power Station July 2013” Answer to questions 1, 3, in further information letter dated 18th September Answer to question 4 in further information letter dated 14th October	Duly made 14/10/2013
Schedule 5 notice (20/11/13) for extra information for V007	Operator responses to extra information questions 1, 2, 3, 4, 5 and 9	Responses dated 12/07/2010
	Application document entitled ‘Unit 3 Variation Technical Summary’	07/03/2014

Table S1.2 Operating techniques		
Description	**Parts**	**Date Received**
Application for variation EPR/VP3530LS/V008	E-mail from Operator to Environment Agency confirming: a) the fuelling scenarios (envelopes) under both potential modes of operation b) that the maximum coal sulphur content under operational mode 1 will be 3.6% c) that only coal from the installation's normal fuel diet will be used under both modes of operation d) that the maximum chlorine content of biomass fuel used during the trial will not exceed 0.04%	23/04/2014
Application for variation EPR/VP3530LS/V009	"Application for variation to enable trial to assess Selective Non-Catalytic Reduction (SNCR) techniques for a coal unit and a biomass unit supporting information."	22/05/2014
Variation Application to carry out a newly prescribed activity	Parts 3 and 4 of "Administrative Variation – September 2014 Supporting Information"	16/02/2015
Response to regulation 60(1) Notice – request for information dated 31/10/14	Compliance route(s) and operating techniques identified in response to questions 2 (compliance route), 4 (configuration of each LCP), 5 (net thermal input of each LCP), 6 (MSUL and MSDL) and 7 (sector approach) Application for Variation to Operate Selective Non-Catalytic Reduction on up to Six Generating Units at Drax Power Station (all parts).	Received 27/10/2015
Receipt of additional information to the regulation 60(1) Notice. requested by letter dated 14/5/15	Compliance route(s) and operating techniques identified in response to questions 5 (net thermal input of each LCP) and 6 (MSUL and MSDL).	Received 28/05/2015
Application for Variation EPR/ VP3530LS/V012	Application for variation to re-burn Furnace Bottom Ash, to install a Reverse Osmosis Plant and convert remaining coal combustion units to biomass.	01/11/2016
Request from the Operator via email for a further requirement to be included in Variation EPR/ VP3530LS/V012	Application for variation to introduce slurried Pulverised Fuel Ash sourced from Barlow Mound into biomass fired boilers in order to mitigate impacts of corrosion slagging and fouling.	01/12/2016
Response to Schedule 5	Confirmed use of advantaged fuels e.g. pond fines, outlined metals screening assessment, and information water usage for Reverse Osmosis plant.	08/12/2016
Response to email RFI dated 22/12/2016	Confirmed the make up of advantaged fuels and clarified that 'pond fines' fit within the original coal specification ranges.	03/01/2017

Table S1.2 Operating techniques		
Description	**Parts**	**Date Received**
Response to regulation 61(1) Notice – request for information dated 01/05/18 EPR/VP3530LS/V018	Compliance and operating techniques identified in response to the BAT Conclusions for large combustion plant published on 17th August 2017.	31/10/2018
Additional information in response to regulation 61(1) Notice EPR/VP3530LS/V018	Compliance and operating techniques identified in response to BAT Conclusions 2, 3, 4, 5, 6, 9, 12, 13, 14, 15, 16, 17, 19, 23 and 24.	26/09/2019
Additional information in response to regulation 61(1) Notice EPR/VP3530LS/V018	Compliance and operating techniques identified in response to BAT Conclusions 4, 5, 17 and 19	20/12/2019
Additional information in response to regulation 61(1) Notice EPR/VP3530LS/V018	Compliance and operating techniques identified in response to BAT Conclusions 4, 5, 17 and 19	16/01/2020
Additional information in response to regulation 61(1) Notice EPR/VP3530LS/V018	Details regarding how the OCGT will comply with the BAT conclusions.	24/02/2020
Response to regulation 61(1) Notice – request for information dated 01/05/18 EPR/VP3530LS/V018	Compliance route and electrical efficiency of the plant	30/03/2020
Application EPR/VP3530LS/V019	Sections 2, 3 and 5 of document “Application for a Minor Technical Variation to Additional Local Exhaust Vents at Drax Power Station VP3530LS”, reference 311019/SF/KBW01	11/11/2019

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
Improvement Conditions IC2D, IC3D, IC4D, IC5D, IC6D, IC7D, IC8D, IC9D, IC10D, IC11D, IC12D, IC13D, IC15D, IC16D, IC17D, IC18D, IC19D, IC25D, IC29D, IC30D, IC31D, IC32D, IC33D, IC35D, IC36D, IC37D, IC38D, IC39D, IC40D, IC41D confirmed completed and therefore, deleted form the permit through EPR/VP3530LS/V018. IC1D and IC42D are confirmed to be no longer applicable and therefore, deleted form the permit through EPR/VP3530LS/V018.		
IC14D	The operator shall continue ambient air monitoring as required by IPC variation BR7178 (concerning coal and petroleum coke blend usage) and continue reporting of results for Dust including content of nickel, vanadium and PAH content in Dust to the Environment Agency in writing unless otherwise approved by the Environment Agency in writing.	Ongoing
Ouse REP ICs (V004)		

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IC 20D (V004)	Provide dated copies of any written management, operational and environmental instructions issued by the operator relating to the Ouse REP LCP operation and associated activities (including the SNCR plant and for fuel supply and preparation and combustion product reuse or disposal) to the Environment Agency.	At least one month before date of first export of electric power from Ouse REP
IC 21D (V004)	Provide a commissioning report on Ouse REP to the Environment Agency in writing including an assessment of efficiency of operation of the Ouse REP and the associated SNCR plant. Present test results taken at above 80% MCR for the CFB boiler for emission values from point A3 for PM10 PM2.5 N2O NO NO2 CO2, CO and HCl with the SNCR plant in operation. If the CFB boiler is to be operated at any point other than during start up, shut down or during a notifiable emergency condition without SNCR provide further sets of results for A3 emissions as above without the SNCR plant in operation.	Within six months of date of first export of electric power from Ouse REP
IC22D (V004)	Provide for the Ouse REP a report to the Environment Agency in writing on the production of, quality of and the export or disposal of ash and ex -CFB boiler bed material for each calendar year of operation of the CFB. Justify the sustainability of these operations.	By 31 March each year for preceding calendar year
IC23D (V004)	After commissioning the SNCR unit confirm the operating instructions to be used to control and record ammonia use and slippage by the SNCR unit in writing to the Environment Agency. Also show these instructions comply with the general permit requirement to use Best Available Techniques.	Within three months of completion of SNCR commissioning.
IC24D (V004)	Propose to the Environment Agency in writing:	
	1) a programme of testing W3 W2 and W1 and the water abstracted from the river Ouse for process use at the Drax Power Limited installation for ammonia during the first twelve months of SNCR operation and	1) Within fifteen months of start of SNCR operation (on Ouse REP –LCP2)
	2) a separate programme of ammonia testing during the first twelve months of SCR operation.	2) Within fifteen months of start of SCR (on LCP91) operation
	Report in writing to the Environment Agency within three months of the end of the test periods. These reports shall include proposed testing based limits for ammonia for W1/W3 and for continuing monitoring of ammonia or justification that continued monitoring is not required to operate to Best Available Techniques standards. Continue monitoring ammonia if this requirement is confirmed in writing by the Environment Agency.	
SCR ICs (V004)		

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IC26D	Provide a commissioning report on SCR operation and performance for the first unit commissioned at this installation to the Environment Agency in writing. Include in the above report a process flow diagram and as built technical details for this plant (including arrangements for anhydrous ammonia receipt and storage). Also confirm the status of the installation under the COMAH regulations.	Within six months of date of first use of anhydrous ammonia in SCR plant
IC27D	Provide a commissioning report on SCR operation on each SCR unit commissioned after first unit to Environment Agency in writing. Specify any significant technical differences between this unit and previous unit(s) and confirm the performance of the latest SCR unit is equal to or better than other SCR units already in operation at the installation.	Within six months of date of first use of anhydrous ammonia in SCR plant fitted to second or subsequent units
IC28D	After commissioning the first SCR unit confirm the operating instructions to be used to control and record ammonia use and slippage in writing to the Environment Agency. Also show these instructions comply with the general permit requirement to use Best Available Techniques.	Within three months of completion of SCR commissioning.
SNCR trial on Units 3 and 4 (V009)		

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IC34D	The Operator has undertaken a review of the existing screening arrangements with reference to the Eels (England and Wales) Regulations 2009 (SI 2009/3344) and the Environment Agency ‘’Safe Passage for Eel’’ Regulatory Position Statement version 1 dated July 2012 (and as amended February 2013) in response to Improvement Programme reference IC29D. The Environment Agency has determined that the site does not comply with the requirements for safe passage of eel and the Operator is now required to complete a cost benefits appraisal of best available technique with reference to the Environment Agency ‘’Safe Passage for Eel: Guidance on Exemptions’’ as a screening tool. If the Cost Benefit Assessment shows that the Benefits are greater than the costs by a factor of 1.5 or more, then the Operator shall submit to the Environment Agency for review a report setting out the costs and the technical and economic feasibility to introduce the improvements to achieve best available technique. If the Cost Benefit Assessment shows that the Benefits are not greater than the costs by a factor of 1.5 or more, then the Operator shall, with reference to the Environment Agency ‘’Safe Passage for Eel: Guidance on exemptions, assess which alternative measure, or combination of alternative measures, could be implemented under a case of a conditioned Exemption. The Operator shall submit a report to the Environment Agency setting out the costs and the technical and economic feasibility of implementing their proposed alternative measure or measures. In all cases, the submission shall contain relevant timescales in accordance with the Safe Passage for Eel Regulatory Position Statement version 1 dated July 2012 (as amended 2013). The proposals shall be implemented following written approval of the Environment Agency. Whilst undertaking this Improvement Condition, the Operator shall be operating under exemption from the requirements to place eel screen diversion structures pursuant to Regulation 17(5)(a) of the Eels (England and Wales) Regulations 2009. The exemption will remain in place until the Environment Agency has provided written approval that the Improvement Condition has been deemed complete.	Updated response received 08/08/2018 and proposals accepted by Environment Agency. Implementation timescales to be agreed.
Installation of SNCR on LCP91		
EPR/VP3530LS/V014 • the re-burning of on unit furnace bottom ash (FBA) to extract the remaining useful heat and to aid with handleability of certain advantaged fuels. • the installation of Reverse Osmosis water treatment plant for making up high quality water for the production of SNCR reagent. • the conversion of the remaining coal units to biomass. • the introduction of slurried pulverised fuel ash from Barlow Mound into biomass fired boilers in order to mitigate impacts of corrosion, fouling and slagging.		

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IC43D	The Operator shall submit a report to the Environment Agency giving full details of the conversion process for the fourth combustion unit from coal to biomass. The report should include a review of the original application assumptions and BAT to ensure they are still relevant.	Within three months of commissioning of the fourth boiler on wood pellet firing.
IC44 D	Excavation of coal PFA from Barlow Ash Mound through to the introduction of slurried PFA into biomass mills - The Operator shall provide a written report to the Environment Agency, explaining the full PFA sourcing process, from the mining of coal PFA from Barlow Ash Mound to the slurrification of the PFA and introduction into the biomass fired boilers. The report must accurately describe each stage of the process, the chosen equipment/technology used during each stage of the process also any risks posed to human health and the environment and how those risks will be managed.	Following full commercial operation across all 6 converted biomass units
EPR/VP3530LS/V018 – BREF Review		
IC45D	A written report shall be submitted to the Environment Agency for approval. The report shall contain an impact assessment demonstrating that there is no significant environmental risk associated with black start operations and propose a methodology for minimisation of environmental impact during such a period of operation and for reporting instances of black start operation. The plant can be operated as set out in condition 2.3.9 of the permit once the report has been approved by the Environment Agency. The methodology for operation and reporting set out in the report shall be implemented by the Operator from the date of approval by the Environment Agency.	12 months from variation issue
IC46D	<u>BAT Conclusion 9</u> The operator shall submit a procedure for approval outlining how the Biomass and Coal will be characterised in line with Best Available Techniques Conclusion 9 in order to improve general performance of combustion and to reduce emissions to air. This shall include characterisation of all substances/parameters as specified for Biomass under this BAT conclusion. The procedure must include, but is not limited to, the following elements: i) Initial fuel characterisation; ii) Regular testing of the fuel quality to check that it is consistent with the initial characterisation and according to the plant design specifications; and Subsequent adjustments of the plant settings as and when needed and practicable.	01/06/21
IC47D	<u>BAT Conclusion 4</u> The operator shall submit a report demonstrating sufficient stability of emissions of mercury and halogen compounds (chlorine and fluorine compounds) in accordance with the latest agreed version of the Protocol for LCP BREF Compliance with trace species monitoring requirements at coal fired power plant.	01/06/2021

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IC48D	BAT Conclusions 5 and 15 The operator shall submit a written monitoring plan to the Environment Agency for approval that includes: (a) proposals to undertake representative monitoring of hazardous pollutants (as set out in the Environment Agency's Surface Water Pollution Risk Assessment guidance) in the discharge to surface water from points W1 including the parameters to be monitored, frequencies of monitoring and methods to be used. The operator shall carry out the monitoring in accordance with the Environment Agency's written approval.	01/07/2021
IC49D	BAT Conclusions 5 and 15 The operator shall submit a written report to the Environment Agency for approval that includes: the results of an assessment of the impact of the emissions to surface water from the site in accordance with the Environment Agency's Surface Water Pollution Risk Assessment Guidance available on our website. The report shall: (a) be based on the parameters monitored in IC48D above; and Include proposals for appropriate measures to mitigate the impact of any emissions where the assessment determines they are liable to cause pollution, including timescales for implementation of individual measures.	12 months from the approval of IC48D
EPR/VP3530LS/V019 – Increase in permit boundary area		
IC50D	The operator shall submit a written site condition report to the Environment Agency for approval that includes details of the baseline soil conditions for the additional area of land. The report shall include: • An update to the existing site condition report for the site to include the additional area of land; • Soil analysis data that demonstrates the baseline soil conditions for any contaminants, in particular for molybdenum, boron and arsenic; and • Details of the use of the land and any proposed pollution prevention measures, as appropriate.	01/08/2021

Table S1.4 Pre-operational measures		
Reference	**Operation**	**Pre-operational measures**
Preoperational Conditions 1- 6 confirmed completed and therefore, deleted from the permit through EPR/VP3530LS/V018.		

Table S1.4 Pre-operational measures		
Reference	**Operation**	**Pre-operational measures**
Pre-operational measures for permit VP3530LS /V004 (issued 2011) for LCP2 – Ouse Biomass REP		
7)	Final design choices and demonstration these choices are BAT for Ouse REP.	At least 3 months prior to commencement of hot commissioning at the Ouse REP site the Operator shall send to the Environment Agency a report detailing a BAT assessment for the Ouse REP. This assessment shall include details and assessment of the arrangements and proposed procedures for raw material delivery and storage, waste production, storage and disposal, in addition to the operation of the boilers and turbines. Also consider fugitive emission control and lime injection or any other measures to reduce sulphur dioxide emissions. Assess all these against the BAT standards within the IPPC Sector Guidance note – EPR1.01 - Combustion Activities dated March 2009. The report shall include a demonstration that these aspects of the operational procedures are in line with what has been accepted as BAT for the site during the determination of this variation (V004), and will enable the Operator to conform to the conditions within this variation.
8)	Operation and control of SNCR process	At least 3 months prior to start of SNCR operations at the Ouse REP site the Operator shall submit a written details of the SNCR equipment, including ammonia storage, fitted for the reduction of oxides of nitrogen emissions including location and description of main plant items and operation and control details for this unit to the Environment Agency. The plan shall include details, but not be limited to, how the Operator will assess the optimisation of SNCR, and the use of /optimisation of emission abatement strategies ; monitoring of process variables and assessment of fugitive emission controls; and analysis of emission monitoring results and how they relate to SNCR process conditions. Generation of electricity at the Ouse REP shall not commence until the above information is received and approved in writing by the Environment Agency.
9)	Specification and control of emission points to air from Ouse REP as built.	At least 2 months prior to start of commissioning at the Ouse REP the Operator shall submit in writing to the Environment Agency a location plan and details for all significant process vents to air on the Ouse REP including A3 and A4 stating for each any abatement or monitoring equipment fitted (including CEMs and manual sampling points).Provide also the measuring ranges and LODs of any CEMs fitted. Specify any process vents or types of vents regarded as not significant. (E.g. steam trap vents, degasser vents). Justify why any process vents not declared in the application or extra information responses do not require abatement or specific monitoring. (If any do a further variation to this permit may be required). A list of emergency or safety vents (relief valves, explosion doors etc.) is also required - operation of any of which would be notifiable to the Environment Agency under the existing notification procedure -. Commissioning at the site shall not commence until the above information is received and approved in writing by the Environment Agency

Table S1.4 Pre-operational measures		
Reference	**Operation**	**Pre-operational measures**
10)	Confirmation of water supply and discharge arrangements to/from/at the Ouse REP.	At least 2 months prior to start of commissioning at the Ouse REP the Operator shall submit in writing to the Environment Agency information and plans of detailing any connections to/from the existing station and isolation and measurement provisions. The locations of any underground sumps, pipe-work, culverts, process and surface water drains, sewer system or other sub-surface structures within the Ouse REP LCP boundary, along with any associated discharge points shall be confirmed. Commissioning at the Ouse REP shall not commence until the above information is received and approved in writing by the Environment Agency.
11)	Control of noise from the site	At least 2 months prior to start of hot commissioning on the Ouse REP operations at the site the Operator shall send a Noise Management plan for this LCP to the Environment Agency at the Reporting Address. The plan shall include information based on the manufacturer's sound power level data of the installed equipment including steam venting provisions. Also provide details of any noise controls agreed or imposed under Electricity Act S36 process. Hot commissioning operations at the site shall not commence until the noise management plan is approved in writing by the Environment Agency.
12)	Extension of existing installation Environment Management System (EMS) and Accident Management Plan to the Ouse REP.	At least 2 months prior to start of generation operations at the Ouse REP the Operator shall confirm proposals for the installation's Environment Management System (EMS) including the Accident Management Plan to be extended to the Ouse REP. Generation of electricity at the Ouse REP shall not commence until the above information is received and approved in writing by the Environment Agency.
13)	Raw material and waste storage handling and control	At least 2 months prior to start of generating operations at the Ouse REP the Operator shall submit a written plan to the Environment Agency for approval detailing the location and nature of hard-standing, kerbing and secondary containment for raw material, intermediate, product and waste storage areas including that of aqueous ammonia for use in the SNCR process at the Ouse REP. Receipt of fuel or bulk chemicals at the Ouse REP shall not commence until the above information is received and approved in writing by the Environment Agency
14)	Energy efficiency	At least 1 month prior to start of generation operations at the Ouse REP site the Operator shall submit a written Energy efficiency plan for approval to the Environment Agency at the Reporting Address. The Energy efficiency plan should be in line with the requirements set out within Section 1.1 of the IPPC Technical Guidance Note EPR1.01 - Combustion Activities dated March 2009.
15)	Waste minimisation	At least 1 month prior to start of generation operations at the Ouse REP site the Operator shall send details on how the waste produced at the site will be minimised and how any waste produced will be re-used, recycled and/or disposed. The report shall include an assessment of whether the proposed routes represent the Best Environmental Option for each waste. Where potential improvements are identified the Operator shall propose a time-tabled plan to implement such improvements.

Table S1.4 Pre-operational measures		
Reference	**Operation**	**Pre-operational measures**
16)	Sulphur dioxide control measures at Ouse REP	Before the start of commissioning of the Ouse REP confirm whether any further measures, other than use of low sulphur fuel, have been selected for the Ouse REP. Justify these measures or state why no measures are thought necessary.
17)	Final control and measurement specifications at Ouse REP (completion of extra information questions asked in Schedule 5 notices including S5/1 A16,A27 and S5/2 A11)	Before the start of commissioning of the Ouse REP confirm final design specifications for Ouse REP including control measures and types ranges and locations of CEMs fitted and include details required to complete extra information notice questions. Provide details of auxiliary boiler including thermal rating, stack dimension, location and flue gas sampling point location.
18)	Chemicals inventory (completion of extra information question asked in Schedule 5 notices S5/1:A30)	Before the start of commissioning of the Ouse REP confirm chemicals inventory and storage arrangements at the Ouse REP.
19)	Control of chlorine content of biomass	Before combustion trials start at the Ouse REP confirm the upper limit of chlorine content of biomass to be purchased for the Ouse REP. Confirm that the monthly average chlorine content of biomass purchased or the monthly average of biomass to be burnt **will not exceed 0.1%.**
19a)	Compliance with the Industrial Emissions Directive	For the following activities referenced in schedule 1, table S1.1: Ouse Renewable Energy Plant. Operations shall not commence on the installation, until the operator has submitted a report in writing to the Environment Agency for approval, demonstrating compliance with Chapter III of the Industrial Emissions Directive and the BAT Conclusions for Large Combustion Plant, and has obtained written approval from the Environment Agency.
19 b)	Control of fugitive emissions	By the start of commissioning of SNCR, the fugitive emission management plan to air shall be reviewed and extended to include ammonia delivery and handling and dust control for operations connected with the OUSE REP and submitted to the Environment Agency in writing, detailing the measures to be used to control fugitive emissions to air from additional operations.
Pre-operational measures for permit VP3530LS / V004 (issued 2011) for SCR plant on main units		
20)	Specification and details of control of emission points to air from SCR process as built.	At least 3 months prior to start of SCR operations at the installation the Operator shall submit in writing to the Environment Agency an SCR process flow diagram and location plan and details of any significant process vents to air on this equipment. Justify why any such vents do not require abatement or vent specific monitoring (if any do a further variation to this permit may be required). Specify any process vents or types of vents regarded as not significant. A list of any emergency or safety vents on the SCR plant also is required, operation of any of which would be notifiable to the Environment Agency under the existing notification procedure. Receipt of bulk anhydrous ammonia shall not commence until the above information is received and approved in writing by the Environment Agency.

Table S1.4 Pre-operational measures		
Reference	**Operation**	**Pre-operational measures**
21)	Operation and control of SCR process	Prior to commencement of SCR construction at the installation(other than preliminary civil engineering site works) the Operator shall submit written details of the SCR equipment, including ammonia storage, fitted for the reduction of oxides of nitrogen emissions including location and description of main plant items and operation and control details for this unit to the Environment Agency. The information submitted shall include details, but not be limited to, how the Operator will assess the optimisation of SCR, and the use of /optimisation of emission abatement strategies ; monitoring of process variables and assessment of fugitive emission controls; and analysis of emission monitoring results and how they relate to SCR process conditions. Receipt of bulk anhydrous ammonia shall not commence until the above information is received and approved in writing by the Environment Agency.
22)	Extension of existing installation Environment Management System (EMS) and Accident Management Plan to the SCR plant.	At least 2 months prior to start of SCR operations at the installation the Operator shall confirm proposals for the installation's Environment Management System (EMS) including the Accident Management Plan to be extended to the SCR plant. Receipt of bulk anhydrous ammonia shall not commence until the above information is received and approved in writing by the Environment Agency.
23)	Receipt and storage of anhydrous ammonia for use with SCR plant.	At least 2 months prior to start of SCR operations at the installation the Operator shall confirm that the SCR plant ammonia system will comply with the requirements of the COMAH Regulations. Receipt of bulk anhydrous ammonia shall not commence until the above information is received in writing by the Environment Agency.
23a)		By the start of commissioning of SCR, the fugitive emission management plan to air shall be reviewed and extended to include anhydrous ammonia delivery and handling and dust control for operation connected with the installation use and maintenance of SCR (or other abatement techniques agreed in writing by the Environment Agency) and submitted to the Environment Agency in writing, detailing the measures to be used to control fugitive emissions to air from existing and additional operations.
Pre-operational measures for permit VP3530LS / V008 (issued 2014) for Unit 3 co-combustion trial		
24)	Operating instructions for co-combustion trial	At least 1 month prior to start of the co-combustion trial on Unit 3 the Operator shall submit details of the 'Operating Instructions' for the two potential modes of operation identified in variation application EPR/VP3530LS/V008. The submission will include a description of how fuels will be managed throughout the trial, from sourcing through to storage and combustion.
Pre-operational measures for permit VP3530LS/V014 (issued 2017) for introduction of PFA sourced from Barlow Mound into biomass fired boilers in order to mitigate impacts of corrosion, for the future conversion of the remaining coal units to biomass		

Table S1.4 Pre-operational measures		
Reference	**Operation**	**Pre-operational measures**
26)	Excavation of coal PFA from Barlow Ash Mound through to the introduction of slurried PFA into biomass mills.	Prior to commencing full commercial operation across at least one existing fully converted biomass unit the Operator shall provide a written report to the Environment Agency, explaining the full PFA sourcing process, from the mining of coal PFA from Barlow Ash Mound to the slurrification of the PFA and introduction into the biomass fired boilers. The report must accurately describe each stage of the process, the chosen equipment/technology used during each stage of the process also any risks posed to human health and the environment and how those risks will be managed.
27)	Conversion of the remaining 3 coal fired units to Biomass fired units.	At least 1 month prior to the start of converting the remaining coal fired units to biomass fired units the Operator shall submit a report to the Environment Agency for each unit giving full details of the conversion process including timeframes and commissioning.
28)	Commissioning of the remaining 3 coal fired units to Biomass fired units	Prior to commencing commissioning, provide a report which reviews the original application assumptions and BAT to ensure they are still relevant.

Table S1.5 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 when the criteria listed below have been met**	**"Minimum Shut-Down Load"** **Load in MW and as percent of rated power output (%)** **Or when the criteria listed below have been met**
A1 LCP91 Unit1	200 MW; 30%	200 MW; 30%
A1 LCP91 Unit2	200 MW; 30%	200 MW; 30%
A1 LCP91 Unit3	200 MW; 30%	200 MW; 30%
A1 LCP91 Unit4	200 MW; 30%	200 MW; 30%
A1 LCP91 Unit5	200 MW; 30%	200 MW; 30%
A1 LCP91 Unit6	200 MW; 30%	200 MW; 30%
A2 LCP454 GT1	As soon as the gas turbine start-up is initiated	As soon as the gas turbine is off-load
A2 LCP454 GT2	As soon as the gas turbine start-up is initiated	As soon as the gas turbine is off-load
A2 LCP454 GT3	As soon as the gas turbine start-up is initiated	As soon as the gas turbine is off-load

Schedule 2 – Raw materials and fuels

Table S2.1 Raw materials and fuels	
Raw materials and fuel description	**Specification**
Heavy Fuel Oil	Not exceeding 1% sulphur w/w
Gas Oil	Not exceeding 0.1% sulphur w/w
Processed Fuel Oil (added by variation EA/EPR/VP3530LS/V003)	As detailed in the Environment Agency document "Regulation of Waste Oil: Interim Arrangements" dated 1 August 2008 or as otherwise agreed in writing by the Environment Agency.
Biomass fuels	As defined in Article 3(31(a)) of the EU Directive 2010/75/EU on industrial emissions (integrated pollution prevention and control) and included in the application or otherwise agreed in writing with the Environment Agency, and not exceeding 0.3% sulphur w/w, or 8mg/kg arsenic.
Petroleum coke co-combusted with coal at a maximum 15% blend by weight. (Percentage to be calculated as a percentage of coal burnt in the same period expressed as a monthly installation average).	Within envelope specified in Schedule 4 response (dated 22/08/06) Table 16.1 (with As amendment as confirmed in letter dated 26/09/06 – NB to JP) unless otherwise approved in writing by the Environment Agency

Table S2.2 Permitted waste types and quantities for use as fuels	
Waste code	**Description**
Relevant exempt biomass waste code	As defined in Article 3(31(b)) of the EU Directive 2010/75/EU on industrial emissions (integrated pollution prevention and control) and included in the application or otherwise agreed in writing with the Environment Agency, and not exceeding 0.3% sulphur w/w, or 8mg/kg arsenic.
Relevant exempt waste code	Other fuels exempt from the requirements of Chapter IV of the EU Directive 2010/75/EU 2000/76/EC and included in applications or otherwise approved in writing by the Environment Agency.

Table S2.3 Permitted waste types and quantities for ash processing	
Waste code	**Description**
10	**Wastes from thermal processes**
10 01	**wastes from power stations and other combustion plants (except 19)**
10 01 01	bottom ash, slag and boiler dust (excluding boiler dust mentioned in 10 01 04)
10 01 02	coal fly ash
10 01 03	fly ash from peat and untreated wood

Schedule 3 – Emissions and monitoring

Table S3.1 Point source emissions to air - emission limits and monitoring requirements shall apply until 16 August 2021						
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit)- these limits do not apply during start up or shut down**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A1 [Point A1 on site plan in Schedule 7]	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	LCP No. 91 Coal and biomass fired boiler plant	283 mg/Nm^3	Monthly mean of validated hourly averages	Continuous	BS EN 14181
		LCP No. 91 Biomass firing only boiler plant	200 mg/Nm^3			
		LCP No. 91 Coal firing only boiler plant	450 mg/Nm^3			
A1 [Point A1 on site plan in Schedule 7]	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	LCP No. 91 Coal and biomass fired boiler plant	312 mg/Nm^3	Daily mean of validated hourly averages	Continuous	BS EN 14181
		LCP No. 91 Biomass firing only boiler plant	220 mg/Nm^3			
		LCP No. 91 Coal firing only boiler plant	495 mg/Nm^3			
A1 [Point A1 on site plan in Schedule 7]	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	LCP No. 91 Coal and biomass fired boiler plant	567 mg/Nm^3	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
		LCP No. 91 Biomass firing only boiler plant	400 mg/Nm^3			
		LCP No. 91 Coal firing only boiler plant	900 mg/Nm^3			
A1 [Point A1 on site plan in Schedule 7]	Sulphur Dioxide	LCP No. 91 Coal and biomass fired boiler plant	250 mg/Nm^3		Continuous	BS EN 14181

Table S3.1 Point source emissions to air - emission limits and monitoring requirements shall apply until 16 August 2021						
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit)- these limits do not apply during start up or shut down**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
		LCP No. 91 Biomass firing only boiler plant	200 mg/Nm^3	Monthly mean of validated hourly averages		
		LCP No. 91 Coal firing only boiler plant	350 mg/Nm^3			
A1 [Point A1 on site plan in Schedule 7]	Sulphur Dioxide	LCP No. 91 Coal and biomass fired boiler plant	293 mg/Nm^3	Daily mean of validated hourly averages	Continuous	BS EN 14181
		LCP No. 91 Biomass firing only boiler plant	220 mg/Nm^3			
		LCP No. 91 Coal firing only boiler plant	440 mg/Nm^3			
A1 [Point A1 on site plan in schedule 7]	Sulphur Dioxide	LCP No. 91 Coal and biomass fired boiler plant	500 mg/Nm^3	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
		LCP No. 91 Biomass firing only boiler plant	400 mg/Nm^3			
		LCP No. 91 Coal firing only boiler plant	700 mg/Nm^3			
A1 [Point A1 on site plan in schedule 7]	Dust	LCP No. 91 Coal and biomass fired boiler plant	20 mg/Nm^3	Monthly mean of validated hourly averages	Continuous	BS EN 14181
		LCP No. 91 Biomass fired boiler plant	20 mg/Nm^3			
		LCP No. 91 Coal fired boiler plant	20 mg/Nm^3			

Table S3.1 Point source emissions to air - emission limits and monitoring requirements shall apply until 16 August 2021						
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit)- these limits do not apply during start up or shut down**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A1 [Point A1 on site plan in schedule 7]	Dust	LCP No. 91 Coal and biomass fired boiler plant	22 mg/Nm^3	Daily mean of validated hourly averages	Continuous	BS EN 14181
		LCP No. 91 Biomass fired boiler plant	22 mg/Nm^3			
		LCP No. 91 Coal fired boiler plant	22 mg/Nm^3			
A1 [Point A1 on site plan in schedule 7]	Dust	LCP No. 91 Coal and biomass fired boiler plant	40 mg/Nm^3	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
		LCP No. 91 Biomass fired boiler plant	40 mg/Nm^3			
		LCP No. 91 Coal fired boiler plant	40 mg/Nm^3			
A1 [Point A1 on site plan in schedule 7]	Ammonia	LCP No. 91 Coal and biomass fired boiler plant	10 mg/Nm^3 Note 1	Daily mean of validated hourly averages	Continuous	BS EN 14181
		LCP No. 91 Biomass fired boiler plant	10 mg/Nm^3 Note 1			
A1 [Point A1 on site plan in schedule 7]	Total mercury	LCP No. 91 Coal and biomass fired boiler plant	-	-	Annual	BS EN13211
A1 [Point A1 on site plan in schedule 7]	Oxygen	LCP No. 91 Coal and biomass fired boiler plant	-	-	Continuous As appropriate to reference	BS EN 14181
A1 [Point A1 on site plan in schedule 7]	Water vapour	LCP No. 91 Coal and biomass fired boiler plant	-	-	Continuous As appropriate to reference	BS EN 14181
A1 [Point A1 on site plan in schedule 7]	Stack gas temperature	LCP No. 91 Coal and biomass fired boiler plant	-	-	Continuous As appropriate to reference	Traceable to national standards

Table S3.1 Point source emissions to air - emission limits and monitoring requirements shall apply until 16 August 2021						
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit)- these limits do not apply during start up or shut down**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A1 [Point A1 on site plan in schedule 7]	Stack gas pressure	LCP No. 91 Coal and biomass fired boiler plant	-	-	Continuous As appropriate to reference	Traceable to national standards
A1 [Point A1 on site plan in schedule 7]	Stack gas volume flow	LCP No. 91 Coal and biomass fired boiler plant	-	-	Continuous	BS EN 16911
A1 [Point A1 on site plan in schedule 7]	As required by the Method Implementation Document for BS EN 15259	LCP No. 91 Coal and biomass fired boiler plant	-	-	Pre-operation and when there is a significant operational change	BS EN 15259
A2 [Point A2 on site plan in Schedule 7]	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	LCP No. 454 Gas turbines fired on gas oil	-	-	Concentration by calculation, every 4380 operational hours or 2 years, whichever is sooner	Agreed in writing with the Environment Agency
A2 [Point A2 on site plan in Schedule 7]	Sulphur dioxide	LCP No. 454 Gas turbines fired on gas oil	-	-	Concentration by calculation, every 4380 operational hours or 2 years, whichever is sooner	Agreed in writing with the Environment Agency
A2 [Point A2 on site plan in Schedule 7]	Dust	LCP No. 454 Gas turbines fired on gas oil	-	-	Concentration by calculation, every 4380 operational hours or 2 years, whichever is sooner	Agreed in writing with the Environment Agency

Table S3.1 Point source emissions to air - emission limits and monitoring requirements shall apply until 16 August 2021						
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit)- these limits do not apply during start up or shut down**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A2 [Point A2 on site plan in Schedule 7]	CO	LCP No. 454 Gas turbines fired on gas oil	-	-	Concentration by calculation, every 4380 operational hours or 2 years, whichever is sooner	Agreed in writing with the Environment Agency
Ax1, Ax2	CO/SO_2/NOx/dust	Package auxiliary boilers (20 MWth)	-	-	-	-
A3, Main stack Ouse REP NGR: SE 466015 428072	-	Circulating fluidised bed boiler Note 2	-	-	-	-
DG 1,2,3	CO/SO2/ NOx/dust	Small diesel generators (low use)	No limit set	-	-	-
OT 1-4	Fuel vapour	Oil tank farm north	No limit set	-	-	-
OT 5,6,7	Fuel vapour	Oil tank farm north	No limit set	-	-	-
LS 1-3 Lime storage silo vents	Dust	Filtered dust vents	No limit set	-	-	-
DB 1 Dust bunker vent	Dust	Filtered dust vents	No limit set	-	-	-
2KT 1-3 2000Te storage silo vents	Dust	Filtered dust vents	No limit set	-	-	-
GS 1- 8 FGD plant – gypsum slurry tank vents	Dust/condensation	Displacement air	No limit set	-	-	-

Table S3.1 Point source emissions to air - emission limits and monitoring requirements shall apply until 16 August 2021						
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit)- these limits do not apply during start up or shut down**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
LSS 1-4 FGD plant – limestone slurry tank vents	Dust/condensation	Displacement air	No limit set	-	-	-
AV 1-6 FGD Absorber vents	Flue gas (on FGD shutdown)	vents	No limit set	-	-	-
AP 1- 12 FGD Absorber purge vents	Flue gas	vents	No limit set	-	-	-
CO 1- 6	Carbon dioxide	Generator CO2 purge	No limit set	-	-	-
T1-6	Oil vapour	Turbine bearings	No limit set	-	-	-
CB 1-26 Coal bunker house extract vents	Coal dust	Extracted ventilation air	No limit set	-	-	-
TH 1-3 Track hopper house extract vents	Diesel engine emissions from rail locomotives/ coal dust	Extracted ventilation air	No limit set	-	-	-
K 1-2 K pump de-dust filter units	Dust -PFA	Filtered dust vents	No limit set	-	-	-
K 1-2 K pump de-dust filter units	Dust -PFA	Filtered dust vents	No limit set	-	-	-
BG 1	CO/SO2/ NO_2 Particulate	Diesel generator – biomass prep plant	No limit set	-	-	-
2 vents on sample building 3	-	Extracted air from sample building 3	-	-	-	-

Table S3.1 Point source emissions to air - emission limits and monitoring requirements shall apply until 16 August 2021						
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit)- these limits do not apply during start up or shut down**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
Vent on screenhouse 2	-	Extracted air from screenhouse 2	-	-	-	-
Vent on screenhouse 1	-	Extracted air from screenhouse 1 via vacuum system	-	-	-	-
Vent on ABC silos	-	Extracted air from ABC silos via vacuum system	-	-	-	-
Note 1: Or other limit agreed in writing with the Environment Agency following completion of IC41D. Note 2: No emissions shall be made from A3 until pre-operational condition 19a in Table S1.4 has been completed and written approval obtained from the Environment Agency						

Table S3.1a Point source emissions to air - emission limits and monitoring requirements shall apply from 17 August 2021						
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit)-these limits do not apply during start up or shut down**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A1 [Point A1 on site plan in Schedule 7]	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	LCP No. 91 Coal and biomass fired boiler plant	283 mg/Nm^3	Monthly mean of validated hourly averages	Continuous	BS EN 14181
		LCP No. 91 Biomass firing only boiler plant	200 mg/Nm^3			
		LCP No. 91 Coal firing only boiler plant	450 mg/Nm^3			
A1 [Point A1 on site plan in Schedule 7]	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	LCP No. 91 Coal and biomass fired boiler plant	247 mg/Nm^3	Daily mean of validated hourly averages	Continuous	BS EN 14181
		LCP No. 91 Biomass firing only boiler plant	200 mg/Nm^3			
		LCP No. 91 Coal firing only boiler plant	340 mg/Nm^3			
A1 [Point A1 on site plan in schedule 7]	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	LCP No. 91 Coal and biomass fired boiler plant	567 mg/Nm^3	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
		LCP No. 91 Biomass firing only boiler plant	400 mg/Nm^3			
		LCP No. 91 Coal firing only boiler plant	900 mg/Nm^3			
A1 [Point A1 on site plan in schedule 7]	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	LCP No. 91 Biomass fired boiler plant Note 1	160 mg/Nm^3	Yearly average	Continuous	BS EN 14181
A1 [Point A1 on site plan in Schedule 7]	Sulphur Dioxide	LCP No. 91 Coal and biomass fired boiler plant	250 mg/Nm^3		Continuous	BS EN 14181

Table S3.1a Point source emissions to air - emission limits and monitoring requirements shall apply from 17 August 2021						
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit)-these limits do not apply during start up or shut down**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
		LCP No. 91 Biomass firing only boiler plant	200 mg/Nm^3	Monthly mean of validated hourly averages		
		LCP No. 91 Coal firing only boiler plant	350 mg/Nm^3			
A1 [Point A1 on site plan in Schedule 7]	Sulphur Dioxide	LCP No. 91 Coal and biomass fired boiler plant	183 mg/Nm^3	Daily mean of validated hourly averages	Continuous	BS EN 14181
		LCP No. 91 Biomass firing only boiler plant	165 mg/Nm^3			
		LCP No. 91 Coal firing only boiler plant	220 mg/Nm^3			
A1 [Point A1 on site plan in schedule 7]	Sulphur Dioxide	LCP No. 91 Coal and biomass fired boiler plant	500 mg/Nm^3	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
		LCP No. 91 Biomass firing only boiler plant	400 mg/Nm^3			
		LCP No. 91 Coal firing only boiler plant	700 mg/Nm^3			
A1 [Point A1 on site plan in schedule 7]	Sulphur Dioxide	LCP No. 91 Biomass fired boiler plant Note 1	100 mg/Nm^3	Yearly average	Continuous	BS EN 14181
A1 [Point A1 on site plan in schedule 7]	Dust	LCP No. 91 Coal and biomass fired boiler plant	20 mg/Nm^3	Monthly mean of validated hourly averages	Continuous	BS EN 14181
		LCP No. 91 Biomass firing only boiler plant	20 mg/Nm^3			
		LCP No. 91 Coal firing only boiler plant	20 mg/Nm^3			

Table S3.1a Point source emissions to air - emission limits and monitoring requirements shall apply from 17 August 2021						
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit)-these limits do not apply during start up or shut down**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A1 [Point A1 on site plan in schedule 7]	Dust	LCP No. 91 Coal and biomass fired boiler plant	15 mg/Nm^3	Daily mean of validated hourly averages	Continuous	BS EN 14181
		LCP No. 91 Biomass firing only boiler plant	16 mg/Nm^3			
		LCP No. 91 Coal firing only boiler plant	14 mg/Nm^3			
A1 [Point A1 on site plan in schedule 7]	Dust	LCP No. 91 Coal and biomass fired boiler plant	40 mg/Nm^3	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
		LCP No. 91 Biomass firing only boiler plant	40 mg/Nm^3			
		LCP No. 91 Coal firing only boiler plant	40 mg/Nm^3			
A1 [Point A1 on site plan in schedule 7]	Dust	LCP No. 91 Biomass fired boiler plant Note 1	10 mg/Nm^3	Yearly average	Continuous	BS EN 14181
A1 [Point A1 on site plan in schedule 7]	Carbon monoxide	LCP No. 91 Biomass fired boiler plant	400 mg/Nm^3	Yearly average	Continuous	Note 3
A1 [Point A1 on site plan in schedule 7]	Ammonia	LCP No. 91 Coal and biomass fired boiler plant	10 mg/Nm^3 Note 2	Yearly average or average over the sampling period	Continuous	BS EN 14181
		LCP No. 91 Biomass only fired boiler plant	10 mg/Nm^3 Note 2			
A1 [Point A1 on site plan in schedule 7]	Hydrogen chloride	LCP No. 91 Biomass fired boiler plant Note 5	12 mg/Nm^3	Daily mean of validated hourly averages	Continuous	Note 3

Table S3.1a Point source emissions to air - emission limits and monitoring requirements shall apply from 17 August 2021						
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit)-these limits do not apply during start up or shut down**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A1 [Point A1 on site plan in schedule 7]	Hydrogen chloride	LCP No. 91 Coal and biomass fired boiler plant	10 mg/Nm^3	Yearly average	Continuous Note 4	Note 3
		LCP No. 91 Biomass firing only boiler plant	5 mg/Nm^3		Continuous	
		LCP No. 91 Coal firing only boiler plant	20 mg/Nm^3		Continuous Note 4	
A1 [Point A1 on site plan in schedule 7]	Hydrogen fluoride	LCP No. 91 Coal and biomass fired boiler plant	3 mg/Nm^3	Average over the sampling period	At least once per year Note 4	Note 3
		LCP No. 91 Biomass firing only boiler plant	<1 mg/Nm^3		At least once per year	
		LCP No. 91 Coal firing only boiler plant	7 mg/Nm^3		At least once per year Note 4	
A1 [Point A1 on site plan in schedule 7]	Mercury	LCP No. 91 Coal and biomass fired boiler plant	5 µg/Nm^3	Average over the sampling period	Continuous for coal Note 4 At least once per year for biomass	Generic EN standards and EN 14884 or EN 13211
		LCP No. 91 Biomass only fired boiler plant	5 µg/Nm^3		At least once per year	
		LCP No. 91 Coal only fired boiler plant	4 µg/Nm^3		Continuous Note 4	
A1 [Point A1 on site plan in schedule 7]	Flow	LCP No. 91 Coal and biomass fired boiler plant	-	-	Continuous As appropriate to reference	EN ISO 16911

Table S3.1a Point source emissions to air - emission limits and monitoring requirements shall apply from 17 August 2021						
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit)-these limits do not apply during start up or shut down**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A1 [Point A1 on site plan in schedule 7]	Oxygen	LCP No. 91 Coal and biomass fired boiler plant	-	-	Continuous As appropriate to reference	BS EN 14181
A1 [Point A1 on site plan in schedule 7]	Water vapour	LCP No. 91 Coal and biomass fired boiler plant	-	-	Continuous As appropriate to reference	BS EN 14181
A1 [Point A1 on site plan in schedule 7]	Stack gas temperature	LCP No. 91 Coal and biomass fired boiler plant	-	-	Continuous As appropriate to reference	Traceable to national standards
A1 [Point A1 on site plan in schedule 7]	Stack gas pressure	LCP No. 91 Coal and biomass fired boiler plant	-	-	Continuous As appropriate to reference	Traceable to national standards
A1 [Point A1 on site plan in schedule 7]	As required by the Method Implementation Document for BS EN 15259	LCP No. 91 Coal and biomass fired boiler plant	-	-	Pre-operation and when there is a significant operational change	BS EN 15259
A2 [Point A2 on site plan in Schedule 7]	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	LCP No. 454 Gas turbines fired on gas oil	250 mg/Nm^3 Note 7	Daily average	Concentration by calculation every 2 years	Agreed in writing with the Environment Agency
A2 [Point A2 on site plan in Schedule 7]	Sulphur dioxide	LCP No. 454 Gas turbines fired on gas oil	66 mg/Nm^3	-	Concentration by calculation every 2 years	Agreed in writing with the Environment Agency
A2 [Point A2 on site plan in Schedule 7]	Dust	LCP No. 454 Gas turbines fired on gas oil	10 mg/Nm^3	-	Concentration by calculation every 2 years	Agreed in writing with the Environment Agency
A2 [Point A2 on site plan in Schedule 7]	Carbon monoxide	LCP No. 454 Gas turbines fired on gas oil	-	-	Concentration by calculation every 2 years	Agreed in writing with the Environment Agency
Ax1, Ax2	CO/SO_2/NOx/dust	Package auxiliary boilers (20 MWth)	-	-	-	-

Table S3.1a Point source emissions to air - emission limits and monitoring requirements shall apply from 17 August 2021						
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit)-these limits do not apply during start up or shut down**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A3, Main stack Ouse REP NGR: SE 466015 428072	-	Circulating fluidised bed boiler Note 6	-	-	-	-
DG 1,2,3	CO/SO2/ NOx/dust	Small diesel generators (low use)	No limit set	-	-	-
OT 1-4	Fuel vapour	Oil tank farm north	No limit set	-	-	-
OT 5,6,7	Fuel vapour	Oil tank farm north	No limit set	-	-	-
LS 1-3 Lime storage silo vents	Dust	Filtered dust vents	No limit set	-	-	-
DB 1 Dust bunker vent	Dust	Filtered dust vents	No limit set	-	-	-
2KT 1-3 2000Te storage silo vents	Dust	Filtered dust vents	No limit set	-	-	-
GS 1- 8 FGD plant – gypsum slurry tank vents	Dust/condensation	Displacement air	No limit set	-	-	-
LSS 1-4 FGD plant – limestone slurry tank vents	Dust/condensation	Displacement air	No limit set	-	-	-
AV 1-6 FGD Absorber vents	Flue gas (on FGD shutdown)	Vents	No limit set	-	-	-
AP 1- 12 FGD Absorber purge vents	Flue gas	Vents	No limit set	-	-	-
CO 1- 6	Carbon dioxide	Generator CO2 purge	No limit set	-	-	-
T1-6	Oil vapour	Turbine bearings	No limit set	-	-	-

Table S3.1a Point source emissions to air - emission limits and monitoring requirements shall apply from 17 August 2021						
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit)-these limits do not apply during start up or shut down**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
CB 1-26 Coal bunker house extract vents	Coal dust	Extracted ventilation air	No limit set	-	-	-
TH 1-3 Track hopper house extract vents	Diesel engine emissions from rail locomotives/ coal dust	Extracted ventilation air	No limit set	-	-	-
K 1-2 K pump de-dust filter units	Dust -PFA	Filtered dust vents	No limit set	-	-	-
K 1-2 K pump de-dust filter units	Dust -PFA	Filtered dust vents	No limit set	-	-	-
BG 1	CO/SO2/ NO_2 Particulate	Diesel generator – biomass prep plant	No limit set	-	-	-
2 vents on sample building 3	-	Extracted air from sample building 3	-	-	-	-
Vent on screenhouse 2	-	Extracted air from screenhouse 2	-	-	-	-
Vent on screenhouse 1	-	Extracted air from screenhouse 1 via vacuum system	-	-	-	-
Vent on ABC silos	-	Extracted air from ABC silos via vacuum system	-	-	-	-

Table S3.1a Point source emissions to air - emission limits and monitoring requirements shall apply from 17 August 2021						
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit)-these limits do not apply during start up or shut down**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**

Note 1: No yearly limit for plant fired on coal operated for <1500 hours.

Note 2: Or other limit agreed in writing with the Environment Agency following completion of IC41D.

Note 3: Monitoring method to be agreed in writing with the Environment Agency.

Note 4: The monitoring frequency specified is for the biomass fired boilers (boilers 1-4). For coal the operator intends to demonstrate sufficiently stable conditions in accordance with the requirements of IC47D. The agreed monitoring frequency for HCl, HF and Hg when burning coal shall be agreed through the completion of IC47D.

Note 5: No limit for Daily HCl fired on coal.

Note 6: No emissions shall be made from A3 until pre-operational condition 19a in Table S1.4 has been completed and written approval obtained from the Environment Agency

Note 7: This is an industry benchmark emission level from reported industry performance documented in JEP report JEP17EMG02 / UTG/18/ERG/CT/773/R ‘Maintaining the Emissions Performance of Open Cycle Gas Turbines that operate for less than 500 hours per year’, October 2018.

Table S3.2 Point Source emissions to water (other than sewer) – emission limits and monitoring/'; requirements – Shall apply until 16 August 2021						
Emission point ref. & location	**Parameter**	**Source**	**Limit (incl. unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
W2 outlet from FGD waste water treatment	Flow	Outlet from FGD waste water treatment	10 000 m^3/day	Day	Continuous Reported monthly as min max and average daily flow	Traceable to national standards
W2 outlet from FGD waste water treatment	Total suspended solids	Outlet from FGD waste water treatment	40 mg/l	Monthly average of weekly spot sample	Weekly – analysed weekly and reported monthly as monthly average	BS EN 872
W1 before outfall to River Ouse after addition of W2 and W3	pH	Purge outfall	6-9	Instantaneous	Continuous Reported monthly as min max and average pH	BS EN ISO 10523
W1 before outfall to River Ouse after addition of W2 and W3	Temperature	Purge outfall	30°C	Instantaneous	Continuous Reported monthly as min max and average temperature	Traceable to national standards
W1 before outfall to River Ouse after addition of W2 and W3	Flow	Purge outfall	302 400 m^3/day	Day	Continuous Reported monthly as min max and average daily flow	Traceable to national standards
W1 before outfall to River Ouse after addition of W2 and W3	Total copper	Purge outfall	No limit set	Monthly average of weekly spot samples	Weekly analysed and reported monthly as monthly average	BS 6068
W1 before outfall to River Ouse after addition of W2 and W3	Copper (on filtered sample)	Purge outfall	No limit set	Monthly average of weekly spot sample OR other sampling / testing / reporting routine approved by the Environment Agency after completion of IC10D condition	Weekly analysed and reported monthly as monthly average	BS 6068

Table S3.2 Point Source emissions to water (other than sewer) – emission limits and monitoring/'; requirements – Shall apply until 16 August 2021						
Emission point ref. & location	**Parameter**	**Source**	**Limit (incl. unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
W1 before outfall to River Ouse and W3 (before flow joins W1)	Total ammonia (as nitrogen)	Purge outfall (W1); W3 close to junction with W1	0.5 mg/l (As nitrogen) Unless otherwise confirmed in writing by the EA IC24D	Monthly average of weekly spot sample OR other sampling / testing / reporting routine approved by the Environment Agency in writing	Weekly analysed and reported monthly as monthly average	BS6068 or as agreed in writing by Environment Agency
W1 on site plan in schedule 2 emission to River Ouse	Mercury and its compounds, expressed as mercury (Total Hg)	Purge outfall	0.005 mg/l	Monthly spot sample	Monthly	BS EN 13506
W1 on site plan in schedule 2 emission to River Ouse	Cadmium and its compounds, expressed as cadmium (Total Cd)	Purge outfall	0.01 mg/l	Monthly spot sample	Monthly	BS 6068-2.89
W3 Discharge from Ouse REP (before flow joins W1)	Flow	Outlet from Ouse REP (LCP2)	16 000 m^3/day (675*24 + margin)	Day	Continuous Reported monthly as min max and average daily flow	Traceable to national standards
W3 Discharge from Ouse REP (before flow joins W1)	Ammonia	Outlet from Ouse REP (LCP2	0.5 mg/l (as total nitrogen) Unless otherwise confirmed in writing by the Environment Agency (see IC24D)	Monthly average of weekly spot sample OR other sampling / testing / reporting routine approved by the Environment Agency in writing	Weekly analysed and reported monthly as monthly average	BS6068 or as agreed in writing by Environment Agency
[1] W1 is high volume flow generally well mixed - so flow proportional sampling not used. [2] Testing methods shall be as above unless different methods are approved in writing by the Environment Agency. [3] Testing on filtered samples except where specified in the table above.						

Table S3.2a Point Source emissions to water (other than sewer) – emission limits and monitoring requirements – Shall apply from 17 August 2021						
Emission point ref. & location	**Parameter**	**Source**	**Limit (incl. unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
W2 outlet from FGD waste water treatment	Flow	Outlet from FGD waste water treatment	10 000 m^3/day	Day	Continuous Reported monthly as min max and average daily flow	Traceable to national standards
W2 outlet from FGD waste water treatment	pH	Outlet from FGD waste water treatment	-	Instantaneous	Continuous	BS EN ISO 10523
W2 outlet from FGD waste water treatment	Temperature	Outlet from FGD waste water treatment	-	Instantaneous	Continuous	Traceable to national standards
W2 outlet from FGD waste water treatment	Total organic carbon (TOC)	Outlet from FGD waste water treatment	50 mg/l	Monthly spot sample	Monthly	Note 4
W2 outlet from FGD waste water treatment	Total Suspended Solids (TSS)	Outlet from FGD waste water treatment	30 mg/l	Monthly spot sample	Monthly	ISO 17025:2017
W2 outlet from FGD waste water treatment	Fluoride	Outlet from FGD waste water treatment	25 mg/l	Monthly spot sample	Monthly	Note 4
W2 outlet from FGD waste water treatment	Sulphate	Outlet from FGD waste water treatment	2.0 g/l	Monthly spot sample	Monthly	Note 4
W2 outlet from FGD waste water treatment	Sulphide	Outlet from FGD waste water treatment	0.2 mg/l	Monthly spot sample	Monthly	Note 4
W2 outlet from FGD waste water treatment	Sulphite	Outlet from FGD waste water treatment	20 mg/l	Monthly spot sample	Monthly	Note 4
W2 outlet from FGD waste water treatment	Chloride	Outlet from FGD waste water treatment	-	Monthly spot sample	Monthly	ISO17025:2017

Table S3.2a Point Source emissions to water (other than sewer) – emission limits and monitoring requirements – Shall apply from 17 August 2021						
Emission point ref. & location	**Parameter**	**Source**	**Limit (incl. unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
W2 outlet from FGD waste water treatment	Arsenic	Outlet from FGD waste water treatment	50 µg/l	Monthly spot sample	Monthly	Note 4
W2 outlet from FGD waste water treatment	Cadmium	Outlet from FGD waste water treatment	5 µg/l	Monthly spot sample	Monthly	ISO17025:2017
W2 outlet from FGD waste water treatment	Chromium	Outlet from FGD waste water treatment	50 µg/l	Monthly spot sample	Monthly	Note 4
W2 outlet from FGD waste water treatment	Copper	Outlet from FGD waste water treatment	50 µg/l	Monthly spot sample	Monthly	ISO 17025:2017
W2 outlet from FGD waste water treatment	Mercury	Outlet from FGD waste water treatment	3 µg/l	Monthly spot sample	Monthly	BS EN 13506
W2 outlet from FGD waste water treatment	Nickel	Outlet from FGD waste water treatment	50 µg/l	Monthly spot sample	Monthly	ISO17025:2017
W2 outlet from FGD waste water treatment	Lead	Outlet from FGD waste water treatment	20 µg/l	Monthly spot sample	Monthly	Note 4
W2 outlet from FGD waste water treatment	Zinc	Outlet from FGD waste water treatment	200 µg/l	Monthly spot sample	Monthly	Note 4
W1 before outfall to River Ouse after addition of W2 and W3	pH	Purge outfall	6-9	Instantaneous	Continuous Reported monthly as min max and average pH	BS EN ISO 10523
W1 before outfall to River Ouse after addition of W2 and W3	Temperature	Purge outfall	30°C	Instantaneous	Continuous Reported monthly as min max and average temperature	Traceable to national standards

Table S3.2a Point Source emissions to water (other than sewer) – emission limits and monitoring requirements – Shall apply from 17 August 2021						
Emission point ref. & location	**Parameter**	**Source**	**Limit (incl. unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
W1 before outfall to River Ouse after addition of W2 and W3	Flow	Purge outfall	302 400 m^3/day	Day	Continuous Reported monthly as min max and average daily flow	Traceable to national standards
W1 before outfall to River Ouse after addition of W2 and W3	Total copper	Purge outfall	No limit set	Monthly average of weekly spot samples	Weekly analysed and reported monthly as monthly average	BS 6068
W1 before outfall to River Ouse after addition of W2 and W3	Copper (on filtered sample)	Purge outfall	No limit set	Monthly average of weekly spot sample OR other sampling / testing / reporting routine approved by the Environment Agency after completion of IC10D condition	Weekly analysed and reported monthly as monthly average	BS 6068
W1 before outfall to River Ouse and W3 (before flow joins W1)	Total ammonia (as nitrogen)	Purge outfall (W1); W3 close to junction with W1	0.5 mg/l (As nitrogen) Unless otherwise confirmed in writing by the EA IC24D	Monthly average of weekly spot sample OR other sampling / testing / reporting routine approved by the Environment Agency in writing	Weekly analysed and reported monthly as monthly average	BS6068 or as agreed in writing by Environment Agency
W1 on site plan in schedule 2 emission to River Ouse	Mercury and its compounds, expressed as mercury (Total Hg)	Purge outfall	0.005 mg/l	Monthly spot sample	Monthly	BS EN 13506

Table S3.2a Point Source emissions to water (other than sewer) – emission limits and monitoring requirements – Shall apply from 17 August 2021						
Emission point ref. & location	**Parameter**	**Source**	**Limit (incl. unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
W1 on site plan in schedule 2 emission to River Ouse	Cadmium and its compounds, expressed as cadmium (Total Cd)	Purge outfall	0.01 mg/l	Monthly spot sample	Monthly	BS 6068-2.89
W3 Discharge from Ouse REP (before flow joins W1)	Flow	Outlet from Ouse REP (LCP2)	16 000 m^3/day (675*24 + margin)	Day	Continuous Reported monthly as min max and average daily flow	Traceable to national standards
W3 Discharge from Ouse REP (before flow joins W1)	Ammonia	Outlet from Ouse REP (LCP2	0.5 mg/l (as total nitrogen) Unless otherwise confirmed in writing by the Environment Agency (see IC24D)	Monthly average of weekly spot sample OR other sampling / testing / reporting routine approved by the Environment Agency in writing	Weekly analysed and reported monthly as monthly average	BS6068 or as agreed in writing by Environment Agency
[1] W1 is high volume flow generally well mixed - so flow proportional sampling not used. [2] Testing methods shall be as above unless different methods are approved in writing by the Environment Agency. [3] Testing on filtered samples except where specified in the table above. [4] Monitoring method to be agreed in writing with the Environment Agency.						

Table S3.3 Annual limits (excluding start up and shut down except where otherwise stated).				
Substance	**Medium**	**Limit (including unit)**		**Emission Points**
Dust, Sulphur dioxide and Oxides of nitrogen	Air	Assessment year	LCP TNP Limit	LCP91
		01/01/20-30/06/20	Emission allowance figure shown in the TNP Register as at 30 April the following year	

Table S3.4 Surface water monitoring requirements				
Location or description of point of measurement	**Parameter**	**Monitoring frequency**	**Monitoring standard or method**	**Other specifications**
Carr Dyke (Up Stream) as shown on Fig 8-1.	Aluminium, Antimony, Arsenic, Boron, Cadmium, Calcium, Chloride, Chromium, Electrical Conductivity, Fluoride, Magnesium, Manganese, Mercury, Molybdenum, pH, Potassium, Selenium, Sodium, Sulphate, TOC. TON, Vanadium.	Quarterly	In accordance with Environment Agency Guidance M18 unless other approved in writing by the Environment Agency	Any parameters reported at levels below limit of detection to be reviewed and deleted if approved in writing by the Environment Agency.
Carr Dyke (Down Stream) as shown on Fig 8-1.	Aluminium, Antimony, Arsenic, Boron, Cadmium, Calcium, Chloride, Chromium, Electrical Conductivity, Fluoride, Magnesium, Manganese, Mercury, Molybdenum, pH, Potassium, Selenium, Sodium, Sulphate, TOC. TON, Vanadium.	Quarterly	In accordance with Environment Agency Guidance M18 unless other approved in writing by the Environment Agency	Any parameters reported consistently at levels below limit of detection to be reviewed and deleted if approved in writing by the Environment Agency.
Barlow Phase 1 discharge Grid ref **SE6593728146**	Copper Boron Molybdenum	Quarterly	BS 6068 (as for W1 copper - filtered samples)	Estimate annual total volume and provide details on methodology used for estimate.
Barlow Phase 2 discharge Grid ref **SE6585527434**	Copper Boron Molybdenum	During each period of discharge	BS 6068 (as for W1 copper - filtered samples)	Measured or estimated volume of discharge during each discharge period plus annual total volume and length of discharge periods (hours/dates) to be recorded provide details on methodology used for estimate.

Table S3.5 Process monitoring requirements				
Emission point reference or source or description of point of measurement	**Parameter**	**Monitoring frequency**	**Monitoring standard or method** Note 1	**Other specifications**
W1 purge outfall	Total suspended solids	Weekly	BS EN 872	Analysed **weekly** and reported monthly as monthly average
Process water intake from River Ouse	Total suspended solids	Weekly	BS EN 872	Analysed **weekly** and reported monthly as monthly average
Process water intake from River Ouse	Copper content (filtered)	Weekly	BS 6068	Analysed **weekly** and reported monthly as monthly average
Process water intake from River Ouse	Total copper	Weekly	BS 6068	Analysed **weekly** and reported monthly as monthly average
W2 Discharge from FGD Waste water treatment plant	pH	Continuous	BS EN ISO 10523	Reported monthly as min max and average pH
W2 Discharge from FGD Waste water treatment plant	Mercury and its compounds, expressed as mercury (Total Hg)	Monthly	BS EN 13506	
W2 Discharge from FGD Waste water treatment plant	Cadmium and its compounds, expressed as cadmium (Total Cd)	Monthly	BS 6068-2.89	
W2 Discharge from FGD Waste water treatment plant	Total copper	Monthly	BS 6068	
W2 Discharge from FGD Waste water treatment plant	Copper (on filtered sample)	Monthly	BS 6068	
W2 Discharge from FGD Waste water treatment plant	Chloride	Monthly	As in current edition of monitoring guidance (M18)	
W2 Discharge from FGD Waste water treatment plant	Nickel	Monthly	BS 6068	
W2 Discharge from FGD Waste water treatment plant	Vanadium	Monthly	BS 6068	
W3 discharge from Ouse REP to W1	Ammonia as total nitrogen	Monthly	As in current edition of monitoring guidance M18	Analysed **weekly** and reported monthly as monthly average
W3 discharge from Ouse REP to W1	Copper (filtered)	Monthly	BS 6068	Analysed **weekly** and reported monthly as monthly average

Table S3.5 Process monitoring requirements				
Emission point reference or source or description of point of measurement	**Parameter**	**Monitoring frequency**	**Monitoring standard or method** Note 1	**Other specifications**
W3 discharge from Ouse REP to W1	Copper (total)	Monthly	BS 6068	Analysed **weekly** and reported monthly as monthly average
W3 discharge from Ouse REP to W1	pH	Continuous	BS EN ISO 10523	Reported monthly as min max and average pH
LCP 91 and LCP454	Net electrical efficiency	After each modification which that could significantly affect these parameters	EN Standards or equivalent	-
Note 1: As specified below or as method in current edition of M18 guidance unless otherwise approved in writing by the Environment Agency.				

Schedule 4 – Reporting

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

Table S4.1 Reporting of monitoring data			
Parameter	**Emission or monitoring point/reference**	**Reporting period**	**Period begins**
Oxides of nitrogen	A1	Every 3 months Every year	1 January, 1 April, 1 July, 1 October 1 January
Oxides of nitrogen	A2	Every 2 years	1 January
Sulphur dioxide	A1	Every 3 months Every year	1 January, 1 April, 1 July, 1 October 1 January
Sulphur dioxide	A2	Every 2 years	1 January
Dust	A1	Every 3 months Every year	1 January, 1 April, 1 July, 1 October 1 January
Dust	A2	Every 2 years	1 January
Carbon Monoxide	A1	Every year	1 January
Carbon Monoxide	A2	Every 2 years	1 January
Hydrogen Chloride	A1	Every 3 months Every year	1 January, 1 April, 1 July, 1 October 1 January
Hydrogen fluoride	A1	Annually	1 January
Mercury	A1	Annually	1 January
Ammonia	A1	Annually	1 January
Emissions to water Parameters as required by condition 3.5.1	W1, W2, W3	Every 6 months	1 January, 1 July
Surface water monitoring Parameters as required by condition 3.5.1	Car Dyke, Barlow Phase 1 discharge, Barlow Phase 2 discharge	Every 6 months	1 January, 1 April, 1 July, 1 October
Process monitoring Parameters as required by condition 3.5.1	W1, Process water intake from River Ouse, W2, W3	Every 6 months	1 January, 1 July

Table S4.2 Resource Efficiency Metrics	
Parameter	**Units**
Electricity Exported	GWhr
Heat Exported	GWhr
Mechanical Power Provided	GWhr
Fossil Fuel Energy Consumption	GWhr
Non-Fossil Fuel Energy Consumption	GWhr
Annual Operating Hours	hr
Water Abstracted from Fresh Water Source	m^3
Water Abstracted from Borehole Source	m^3
Water Abstracted from Estuarine Water Source	m^3
Water Abstracted from Sea Water Source	m^3
Water Abstracted from Mains Water Source	m^3
Gross Total Water Used	m^3
Net Water Used	m^3
Hazardous Waste Transferred for Disposal at another installation	t
Hazardous Waste Transferred for Recovery at another installation	t
Non-Hazardous Waste Transferred for Disposal at another installation	t
Non-Hazardous Waste Transferred for Recovery at another installation	t
Waste recovered to Quality Protocol Specification and transferred off-site	t
Waste transferred directly off-site for use under an exemption / position statement	t

Table S4.3 Large Combustion Plant Performance parameters for reporting to DEFRA		
Parameter	**Frequency of assessment**	**Units**
Thermal Input Capacity for each LCP	Annually	MW
Annual Fuel Usage for each LCP	Annually	TJ
Total Emissions to Air of NOx for each LCP	Annually	t
Total Emissions to Air of SO2 for each LCP	Annually	t
Total Emissions to Air of Dust for each LCP	Annually	t
Operating Hours for each LCP	Annually	hr
Operating Hours as a five yearly rolling average for LCP91 (coal fired units 5 and 6)	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
Air	Form IED RTA1 –TNP quarterly emissions summary log	National and Area Office
LCP	Form IED HR1 – operating hours Form as agreed in writing by the Environment Agency.	National and Area Office
Air	Form IED CON 1 – 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
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
Resource Efficiency	Form REM1 – resource efficiency annual report Form as agreed in writing by the Environment Agency.	National and Area Office
Water	Form water 1 or other form as agreed in writing by the Environment Agency 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.

“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.

“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.

“biomass” means any of the following:

(a) products consisting of any vegetable matter from agriculture or forestry which can be used as a fuel for the purpose of recovering its energy content;

(b) The following waste:

(i) vegetable waste from agriculture and forestry;

(ii) vegetable waste from the food processing industry, if the heat generated is recovered;

(iii) fibrous vegetable waste from virgin pulp production and from production of paper from pulp, if it is co-incinerated at the place of production and the heat generated is recovered;

(iv) cork waste; and

(v) wood waste with the exception of wood waste which may contain halogenated organic compounds or heavy metals as a result of treatment with wood preservatives or coating, and which includes in particular such wood waste originating from construction and demolition waste.

“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 Commité Européen de Normalisation.

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

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

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

“DLN” means dry, low NO_x burners.

“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.

“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.

“hazardous property” has the meaning in Annex lll of the Waste Framework Directive.

“hazardous waste” has the meaning given in the Hazardous Waste (England and Wales) Regulations 2005 (as amended).

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

“List of Wastes” means the list of wastes established by Commission Decision 2000/532/EC replacing Decision 94/3/EC establishing a list of wastes pursuant to Article 1(a) of Council Directive 75/442/EEC on waste and Council Decision 94/904/EC establishing a list of hazardous waste pursuant to Article 1(4) of Council Directive 91/689/EEC on hazardous waste, as amended from time to time.

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

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

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

“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.

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

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

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

“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.

“Waste code” means the six digit code referable to a type of waste in accordance with the List of Wastes and in relation to hazardous waste, includes the asterisk.

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.

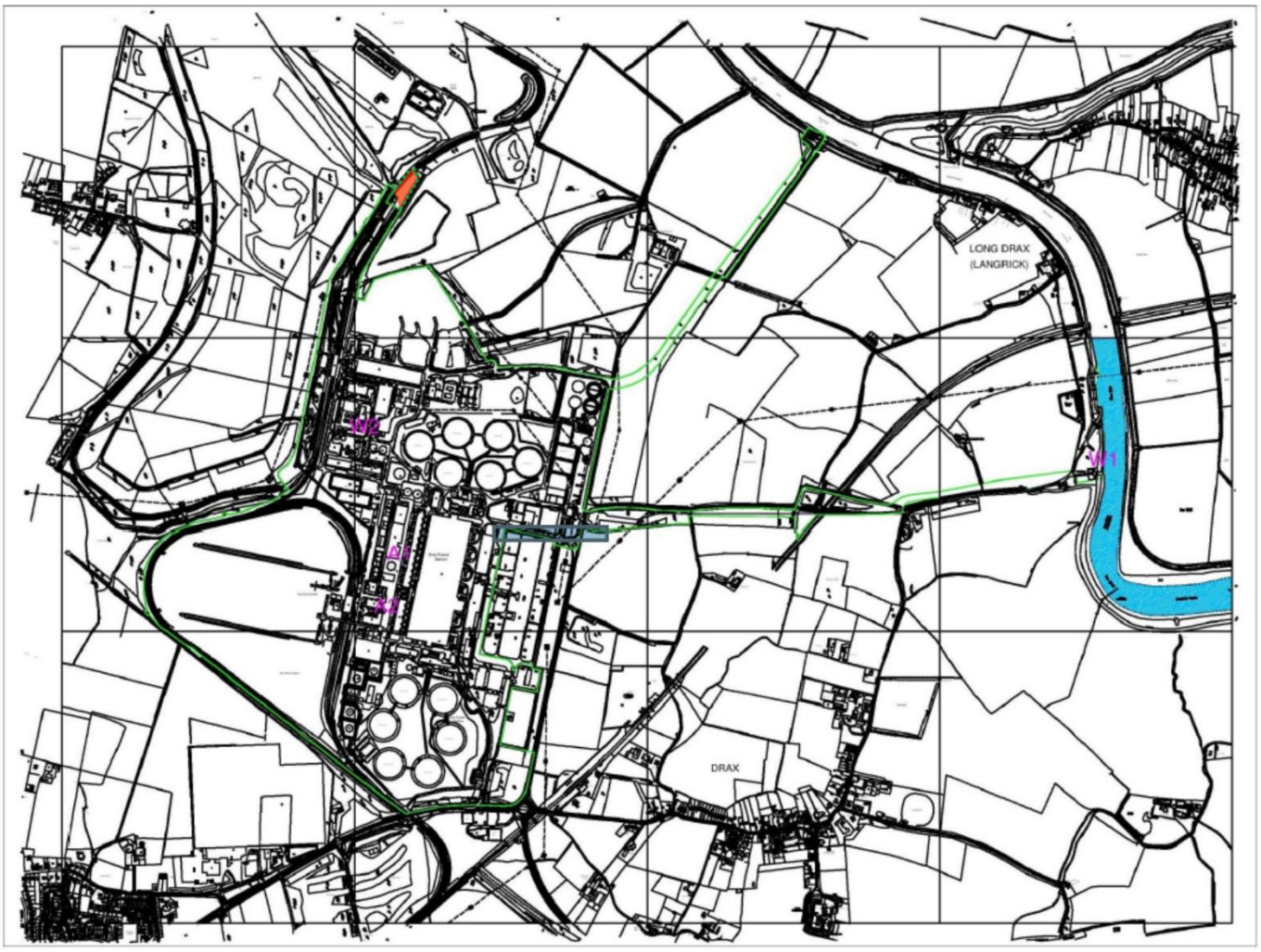
Unless otherwise stated, any references in this permit to concentrations of substances in emissions into air means:

- 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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