



Notice of variation and consolidation with introductory note

The Environmental Permitting (England & Wales) Regulations 2010

Keadby Generation Limited
Fiddler's Ferry Power Station
Widnes Road
Cuerdley
Warrington
Cheshire
WA5 2UT

Variation application number

EPR/BS8192IV/V006

Permit number

EPR/BS8192IV

Fiddlers Ferry Power Station

Permit number EPR/BS8192IV

Introductory note

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

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

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

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

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

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

The Operator has chosen to operate this LCP under the Transitional National Plan (TNP) compliance route. This is a change from the previous operating regime which was the ELV approach.

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

LCP258 is changed to LCP309.

LCP259 is changed to LCP310.

This variation also removes the requirement to maintain an air quality management plan to demonstrate compliance with air quality standards, as well as the requirement to assess changes in acidification and eutrophication deposition and ecological effects at appropriate Natura 2000 sites.

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

The electric power generation installation operated by Keadby Generation Limited, a part of SSE PLC, at Fiddler's Ferry is a major power station using coal, biomass and oil as fuel. It is situated in Cheshire, about two miles east of Widnes and on the northern bank of the River Mersey.

The installation comprises four pulverised coal fired boiler/turbo-generator units (LCP309) with a total net thermal input of 5122 MW, capable of generating in total 2027 MW electricity at full output. The installation also includes two 73 MW (net rated thermal input) standby gas fired turbines driving electrical generators (LCP310). These units operate only occasionally and normally only when required by adverse distribution grid conditions (black start) or for testing. The installation also includes various ancillary plant, including; coal and biomass storage and handling, steam turbine generators, fuel oil storage, cooling water systems, ash storage and handling, river water pump house, water treatment plant and flue gas desulphurisation plant.

The main emissions of concern to air are:

- 1) Sulphur dioxide (SO₂) released directly as a result of the sulphur content and amount of the fuels burned.
- 2) Oxides of nitrogen (NO_x) comprising nitric oxide and nitrogen dioxide created by the chemical combination of atmospheric oxygen and nitrogen in the high temperature furnace combustion zone.

3) Dust being residual pulverised fuel ash (PFA).

Flue gas desulphurisation equipment (FGD) was installed in 2007 to remove over 90% of sulphur dioxide from the combustion gases to Units 2, 3 and 4 which, along with Unit 1 which does not have FGD, are designated Large Combustion Plant LCP309. Mechanical and electrostatic precipitators are used to reduce the amount of particulate matter produced. Low 'NOx' burners have been installed in conjunction with the use of Over-fired Air (OFA), to reduce emissions of oxides of nitrogen.

Each substance is continuously monitored to the standards required under Annex V Parts 3 and 4 of the Industrial Emissions Directive. Carbon dioxide emissions are controlled under the EUETS (European Union Emissions Trading Scheme). Emissions are discharged to atmosphere from four separate flues inside a common windshield at a height of approximately 200m.

The installation also discharges large volumes of cooling water, previously abstracted from the River Mersey to the same river, or the St Helens canal, after use in the cooling circuit and subsequent temperature reduction in natural draught cooling towers, via settlement lagoon C. The cooling towers also discharge water vapour to the atmosphere. This is frequently more visible than the discharge of combustion gases.

A considerable stock of the main fuel, bituminous coal, is held in profiled stockpiles on the installation site. These stockpiles are on hardstanding of reinforced concrete or asphalt. These stocks drain to a moat on the periphery of these areas. Ash produced is sold where possible or otherwise transported to an adjacent ash disposal facility (regulated under a separate EPR permit BR6791IJ). The station also uses oil and propane for start-up and flame stabilisation purposes. For historical reasons the water outlets designated S1 and S2 in the application are now interpreted as being direct to controlled waters and are referred to in this permit as WS1 and WS2. There are no process releases to sewer.

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 received EPR/BS8192IV/A001	Duly made 30/03/2006	Application for power station.
Additional Information received S4 issued 07/06/06	Response 03/08/06	
Additional Information received Biomass system vents	14/08/06	
S4 follow up information	15/09/06	
FGD BAT case	22/09/06	
FGD BAT case further info	06/11/06	
FGD installation outline information	06/10/06	
FGD installation outline information; further queries requested 25/10/06	09/11/06	
Permit determined EPR/BS8192IV	30/10/2007	Original permit issued to Keadby Generation Limited
Variation application EPR/BS8192IV/V002	Duly made 19/04/10	Processed Fuel Oil
Variation determined EPR/BS8192IV	29/04/10	Varied permit issued.
Variation determined EPR/BS8192IV/V003	11/03/13	Environment Agency Initiated Variation, to incorporate Eel Regulations improvement condition.

Status log of the permit		
Description	Date	Comments
Variation EPR/BS8192IV/V004	Duly made 06/02/13	Application to add NOx abatement trial
Additional information	Received 16/04/13; 25/04/13;	Information on trial timescales and containment measures for additional raw material
Variation determined EPR/BS8192IV/V004	02/05/13	Varied permit issued.
Variation determined EPR/ BS8192IV/V005	Issued 29/09/14	Environment Agency Initiated Variation, to add an improvement condition requiring a cost benefit appraisal to ensure compliance with the Eels Regulations. Effective 1/10/14.
Regulation 60 Notice sent to the Operator	31/10/14	Issue of a Notice under Regulation 60(1) of the EPR. Environment Agency Initiated review and variation to vary the permit under IED to implement the special provisions for LCP under Chapter III, introducing new Emission Limit Values (ELVs) applicable to LCP, referred to in Article 30(2) and set out in Annex V. The permit is also updated to modern conditions.
Regulation 60 Notice response	30/03/15	Response received from the Operator.
Additional information received	12/06/15	Response to request for further information (RFI) dated 14/05/15
Additional information received	30/10/15	Response to request for further information dated 21/10/15
Variation determined EPR/BS8291IV/V006 (PAS Billing ref: RP3034AT)	30/12/15	Varied and consolidated permit issued in modern condition format. Variation effective from 01/01/2016.

Other Part A installation permits relating to this installation		
Operator	Permit number	Date of issue
Keadby Generation (ash lagoons A, B & D)	BR6791IJ	27/04/2007

End of introductory note

Notice of variation and consolidation

The Environmental Permitting (England and Wales) Regulations 2010

The Environment Agency in exercise of its powers under regulation 20 of the Environmental Permitting (England and Wales) Regulations 2010 varies and consolidates

Permit number

EPR/BS8192IV

Issued to

Keadby Generation Limited (“the operator”)

whose registered office is

Keadby Power Station

PO Box 89

Keadby

Scunthorpe

DN17 3AZ

company registration number **02729513**

to operate an installation at

Fiddler's Ferry Power Station

Widnes Road

Cuerdley

Warrington

Cheshire

WA5 2UT

to the extent set out in the schedules.

The notice shall take effect from 01/01/2016

Name	Date
Anne Nightingale	30/12/2015

Authorised on behalf of the Environment Agency

Schedule 1

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

Schedule 2 – consolidated permit

Consolidated permit issued as a separate document.

Permit

The Environmental Permitting (England and Wales) Regulations 2010

Permit number

EPR/BS8192IV

This is the consolidated permit referred to in the variation and consolidation notice for application **EPR/BS8192IV/V006** authorising,

Keadby Generation Limited (“the operator”)

whose registered office is

Keadby Power Station

PO Box 89

Keadby

Scunthorpe

DN17 3AZ

company registration number **02729513**

to operate an installation at

Fiddler's Ferry Power Station

Widnes Road

Cuerdley

Warrington

Cheshire

WA5 2UT

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

Name	Date
Anne Nightingale	30/12/2015

Authorised on behalf of the Environment Agency

Conditions

1 Management

1.1 General management

1.1.1 The operator shall manage and operate the activities:

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

1.1.2 Records demonstrating compliance with condition 1.1.1 shall be maintained.

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

1.2 Energy efficiency

1.2.1 The operator shall:

- (a) take appropriate measures to ensure that energy is used efficiently in the activities;
- (b) take appropriate measures to ensure the efficiency of energy generation at the permitted installation is maximised;
- (c) review and record at least every four years whether there are suitable opportunities to improve the energy efficiency of the activities; and
- (d) take any further appropriate measures identified by a review.

1.3 Efficient use of raw materials

1.3.1 The operator shall:

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

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

1.4.1 The operator shall take appropriate measures to ensure that:

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

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

2 Operations

2.1 Permitted activities

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

2.2 The site

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

2.3 Operating techniques

- 2.3.1 The activities shall, subject to the conditions of this permit, be operated using the techniques and in the manner described in the documentation specified in schedule 1, table S1.2, unless otherwise agreed in writing by the Environment Agency.
- 2.3.2 For the following activities referenced in schedule 1, table S1.1: LCP309 and LCP310. Without prejudice to condition 2.3.1, the activities shall be operated in accordance with the “Electricity Supply Industry IED Compliance Protocol for Utility Boilers and Gas Turbines” revision 1 dated February 2015 or any later version unless otherwise agreed in writing by the Environment Agency.
- 2.3.3 If notified by the Environment Agency that the activities are giving rise to pollution, the operator shall submit to the Environment Agency for approval within the period specified, a revision of any plan or other documentation (“plan”) specified in schedule 1, table S1.2 or otherwise required under this permit which identifies and minimises the risks of pollution relevant to that plan, and shall implement the approved revised plan in place of the original from the date of approval, unless otherwise agreed in writing by the Environment Agency.
- 2.3.4 Any raw materials or fuels listed in schedule 2 table S2.1 shall conform to the specifications set out in that table.
- 2.3.5 For the following activities referenced in schedule 1, table S1.1: LCP310. 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: LCP309 and LCP310. 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.
- 2.3.7 For the following activities referenced in schedule 1, table S1.1: LCP309. 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.
- 2.3.8 Waste shall only be accepted if:
- (a) it is of a type and quantity listed in schedule 2 table S2.2; and
 - (b) it conforms to the description in the documentation supplied by the producer and holder.

- 2.3.9 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.
- 2.3.10 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 operations specified in schedule 1 table S1.4 shall not commence until the measures specified in that table 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 and S3.2.
- 3.1.2 The limits given in schedule 3 shall not be exceeded.
- 3.1.3 The emission values from emission point A1 listed in schedule 3 Table S3.1, measured during periods of abatement equipment malfunction and breakdown shall be disregarded for the purposes of compliance with Table S3.1 emission limit values.
- 3.1.4 Total annual emissions from the LCP emission point(s) set out in schedule 3 table S3.1 of a substance listed in schedule 3 table S3.3 shall not exceed the relevant limit in table S3.3
- 3.1.5 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 and S3.2; and
- (b) process monitoring specified in table S3.4.

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

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

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

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

- 3.6.1 All monitoring required by this permit shall be carried out in accordance with the provisions of Annex V of the Industrial Emissions Directive.
- 3.6.2 If the monitoring results for more than 10 days a year are invalidated within the meaning set out in condition 3.6.7, the operator shall:
- (a) within 28 days of becoming aware of this fact, review the causes of the invalidations and submit to the Environment Agency for approval, proposals for measures to improve the reliability of the continuous measurement systems, including a timetable for the implementation of those measures; and
 - (b) implement the approved proposals.
- 3.6.3 Continuous measurement systems on emission points from the LCP shall be subject to quality control by means of parallel measurements with reference methods at least once every calendar year.
- 3.6.4 Unless otherwise agreed in writing by the Environment Agency in accordance with condition 3.6.5 below, the operator shall carry out the methods, including the reference measurement methods, to use and calibrate continuous measurement systems in accordance with the appropriate CEN standards.
- 3.6.5 If CEN standards are not available, ISO standards, national or international standards which will ensure the provision of data of an equivalent scientific quality shall be used, as agreed in writing with the Environment Agency.
- 3.6.6 Where required by a condition of this permit to check the measurement equipment, the operator shall submit a report to the Environment Agency in writing, within 28 days of the completion of the check.
- 3.6.7 Where Continuous Emission Monitors are installed to comply with the monitoring requirements in schedule 3, table S3.1; the Continuous Emission Monitors shall be used such that:
- (a) for the continuous measurement systems fitted to the LCP release points defined in Table S3.1 the validated hourly, monthly and daily averages shall be determined from the measured valid hourly average values after having subtracted the value of the 95% confidence interval;
 - (b) the 95% confidence interval for nitrogen oxides and sulphur dioxide of a single measured result shall be taken to be 20%;
 - (c) the 95% confidence interval for dust releases of a single measured result shall be taken to be 30%;
 - (d) the 95% confidence interval for carbon monoxide releases of a single measured result shall be taken to be 10%;
 - (e) an invalid hourly average means an hourly average period invalidated due to malfunction of, or maintenance work being carried out on, the continuous measurement system. However, to allow some discretion for zero and span gas checking, or cleaning (by flushing), an hourly average period will count as valid as long as data has been accumulated for at least two thirds of the period (40 minutes). Such discretionary periods are not to exceed more than 5 in any one 24-hour period unless agreed in writing. Where plant may be operating for less than the 24-hour period, such discretionary periods are not to exceed more than one quarter of the overall valid hourly average periods unless agreed in writing; and
 - (f) any day, in which more than three hourly average values are invalid shall be invalidated.

4 Information

4.1 Records

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

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

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

4.2 Reporting

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

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

- (a) a review of the results of the monitoring and assessment carried out in accordance with the permit including an interpretive review of that data;
- (b) the resource efficiency metrics set out in schedule 4 table S4.2;
- (c) the performance parameters set out in schedule 4 table S4.3 using the forms specified in table S4.4 of that schedule.
- (d) where condition 2.3.5 applies, the hours of operation in any year; and
- (e) where condition 2.3.7 applies, the cumulative duration of breakdown and cumulative duration of malfunction in any 12 month period.

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

- (a) in respect of the parameters and emission points specified in schedule 4 table S4.1;
- (b) for the reporting periods specified in schedule 4 table S4.1 and using the forms specified in schedule 4 table S4.4; and
- (c) giving the information from such results and assessments as may be required by the forms specified in those tables.

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

4.2.5 Within 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 2.3.7) 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: LCP309. Unless otherwise agreed in writing with the Environment Agency, within 1 month of the end of each quarter, the operator shall submit to the Environment Agency using the form IED RTA1, listed in table S4.4, the information specified on the form relating to the site's mass emissions.

4.3 Notifications

4.3.1 In the event:

- (a) that the operation of the activities gives rise to an incident or accident which significantly affects or may significantly affect the environment, the operator must immediately—
 - (i) inform the Environment Agency,
 - (ii) take the measures necessary to limit the environmental consequences of such an incident or accident, and
 - (iii) take the measures necessary to prevent further possible incidents or accidents;
- (b) of a breach of any permit condition the operator must immediately—
 - (i) inform the Environment Agency, and
 - (ii) take the measures necessary to ensure that compliance is restored within the shortest possible time;
- (c) of a breach of permit condition which poses an immediate danger to human health or threatens to cause an immediate significant adverse effect on the environment, the operator must immediately suspend the operation of the activities or the relevant part of it until compliance with the permit conditions has been restored.
- (d) of any malfunction or breakdown of abatement equipment relating to condition 2.3.7, the operator shall notify the Environment Agency within 48 hours unless notification has already been made under (a) to (c) above.

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

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

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

Where the operator is a registered company:

- (a) any change in the operator's trading name, registered name or registered office address; and
- (b) any steps taken with a view to the operator going into administration, entering into a company voluntary arrangement or being wound up.

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

- (c) any change in the operator's name or address; and
- (d) any steps taken with a view to the dissolution of the operator.

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

- (a) the Environment Agency shall be notified at least 14 days before making the change; and
- (b) the notification shall contain a description of the proposed change in operation.

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

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

4.4 Interpretation

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

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

Schedule 1 – Operations

Table S1.1 activities			
Activity reference	Activity listed in Schedule 1 of the EP Regulations	Description of specified activity	Limits of specified activity
A1	Section 1.1 A(1)(a): Burning any fuel in an appliance with a rated thermal input of 50 megawatts or more.	LCP309: Operation of four boilers burning coal and biomass for production of steam and electricity (5122 MW aggregated net thermal input) LCP310: Operation of two open cycle gas turbines (OCGTs) burning gas oil to produce electricity (146 MW aggregated net thermal input)	From receipt of coal or gas oil to discharge of exhaust gases and wastes, and the generation and export of electricity. Wastes as specified in Table S2.2 LCP310 shall only be used during emergency conditions or for testing less than 500 hours per year
A2	Section 4.2 Part A(1)(a)(iv): Producing inorganic chemicals such as salts	Operation of 3 Flue Gas Desulphurisation (FGD) units.	From receipt of raw materials to despatch of products and waste
A3	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 the waste water from flue gas desulphurisation plant.	From receipt of raw materials to despatch of products and waste
A4	Section 3.5 Part B(f): Loading, unloading or storing pulverised fuel ash in bulk prior to further transportation in bulk.	Removal of ash from the combustion process to dispatch from site	From receipt of raw materials to despatch of products and waste
Directly Associated Activity			
A5	Directly associated activity	Fuel storage	From receipt of raw materials to dispatch for use
A6	Directly associated activity	Boiler water treatment.	The pumping, filtering and treatment of the water and its discharge as boiler water blow down into the cooling water circuit.
A7	Directly associated activity	The use of river water from the River Mersey 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 Mersey or St Helens canal.

Table S1.1 activities			
Activity reference	Activity listed in Schedule 1 of the EP Regulations	Description of specified activity	Limits of specified activity
A8	Directly associated activity	Surface water drainage	Handling and storage of site drainage until discharge to site surface water system

Table S1.2 Operating techniques		
Description	Parts	Date Received
Application	The response to sections B1 and B2 (and documentation referred to in these sections) in the Application	31/03/06
Schedule 4 Notice Request dated 07/07/06	Response to question MFF1 detailing revised emission point details.	03/08/06
Schedule 4 Notice Request dated 07/07/06	Responses to question MFF15 detailing carbon monoxide monitoring and control.	03/08/06
Schedule 4 Notice Request dated 07/07/06	Responses to question MFF17 detailing sediment trap inspection and control	03/08/06
Schedule 4 Notice Request dated 07/07/06	Responses to question MFF22 detailing with legionella testing in the cooling circuit	03/08/06
FGD Primary performance guarantees	All – received as “Appendix A”	09/11/06
Variation EA/EPR/BS8192IV/V002	Application details to burn Processed Fuel Oil (PFO)	14/04/10
Variation application EPR/BS8192IV/V004	All parts; Advanced NO _x Abatement (application for trial on Unit 2).	04/01/13
Variation application EPR/BS8192IV/V004	Email describing commissioning timescales	16/04/13
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) Excluding the LHD compliance for LCP258 (now LCP309) and related operating techniques	30/03/15
Receipt of additional information to the regulation 60(1) Notice. requested by letter dated 14/05/15	Compliance route(s) and operating techniques identified in response to questions 5 (net thermal input of each LCP), 6 (MSUL and MSDL) and 8 (proposed ELVs)	12/06/15
Receipt of additional information to the regulation 60(1) Notice.	Confirmation of the compliance routes chosen for LCP258 (now LCP309)	Received 22/12/15

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
IC1FF	<p>A written report shall be submitted to the Agency for approval. The report shall include the results of an assessment of whether there are other appropriate measures that could be taken to prevent, or where that is not practicable, to minimise pollution for the activities covered by this permit. The report shall be in sufficient detail to allow a permit review. The report shall also contain a timescale for the implementation of any individual measures identified to improve the performance of the installation, including emissions control performance, as appropriate following the review.</p> <p>The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the report.</p> <p>The individual measures detailed in the report shall be implemented by the operator from the date of approval in writing by the Agency.</p>	Complete
IC2FF	<p>A written report shall be submitted to the Agency for approval. The report shall contain a protocol detailing the methodology for measuring the fraction of PM10 and PM2.5 within the release of total particulate matter from the combustion process. The protocol shall include but not be restricted to a variety of operating scenario including start up and shut down, changes in operating loads and patterns and types of abatement. The report shall also contain a proposed time-scale within which the proposed sampling program contained within the protocol will be completed.</p> <p>The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the report.</p> <p>The program shall be implemented by the operator from the date of approval in writing by the Agency.</p>	Complete
IC3FF	<p>A written report shall be submitted to the Agency for approval. The report shall include a detailed assessment, including economic factors, of the options to increase firing of biomass fuels.</p> <p>Where appropriate, the report shall contain dates for the implementation of individual measures.</p> <p>The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the report.</p> <p>The individual measures detailed in the report shall be implemented by the operator from the date of approval in writing by the Agency</p>	Complete
IC4FF	<p>A written report shall be submitted to the Agency for approval. The report shall include the results of a water efficiency audit in accordance with section 2.4.3 of IPPC Sector Guidance Note for the Combustion Sector. The report shall also contain a timescale for the implementation of any individual measures identified to address any deficiencies.</p> <p>The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the report.</p> <p>The individual measures detailed in the report shall be implemented by the operator from the date of approval in writing by the Agency.</p>	Complete
IC5FF	<p>A written report shall be submitted to the Agency for approval. The report shall include the results of a waste minimisation audit in accordance with section 2.4.2 of IPPC Sector Guidance Note for the Combustion Sector. The report shall also contain a timescale for the implementation of any individual measures identified to address any deficiencies.</p> <p>The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the report.</p> <p>The individual measures detailed in the report shall be implemented by the operator from the date of approval in writing by the Agency.</p>	Complete

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
IC6FF	Provide a written plan of how this installation will contribute to total emissions of SO ₂ from existing major coal-fired power stations in England and Wales being minimised and in any case not exceeding 70 kt/year by 2020. The report should consider scenarios for electricity demand in 2020 and give the planned arrangements for SO ₂ emissions control at this installation. (Existing coal-fired stations comprise LCP that might still be operating in 2020. These are at Aberthaw, Cottam, Drax, Eggborough, Ferrybridge, Fiddlers Ferry, Ratcliffe, Rugeley, Uskmouth and West Burton). The plan should be implemented after approval by the Environment Agency.	01/04/16
IC7FF	A written report shall be submitted to the Agency for approval. The report shall contain a protocol for a monitoring programme to assess changes in acidification and eutrophication deposition and ecological effects at appropriate Natura 2000 sites. The protocol will include the selection of the Natura 2000 sites and a time scale for implementation of the programme. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the report. The protocol detailed in the report shall be implemented by the Operator from the date of approval by the Environment Agency.	31/12/16
IC8FF	A written procedure shall be submitted to the Agency detailing the measures to be used so that monitoring equipment, personnel and organisations employed for the emissions monitoring programme shall have either MCERTS certification or accreditation in accordance with condition 3.6.3. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the procedure. The procedure shall be implemented by the operator from the date of approval in writing by the Agency.	Complete
IC9FF	The operator shall review and report to the Agency in writing on the methods used for the sampling and analysis of water from the station inlet and discharges and process monitoring to ensure that the most suitable method is used, and that the limit of detection is appropriate. The report shall include proposed actions and timescales for the implementation of any improvements or modifications to sampling testing and analysis requirements identified during the review. Implement recommendations for change from date of approval in writing by the Agency.	Complete
IC10FF	Review determinands sampled and analysed for water discharges for the purposes of this permit. Report in writing to the Agency stating any recommendations for change. Implement recommendations for change from date of approval in writing by the Agency.	Complete
IC11FF	The operator shall monitor all fluid input and output streams to/from Lagoon C for flow rate and suspended solids content at least weekly over a representative period (the monitoring period and a revised reporting date to be agreed in writing by the Agency if the proposed monitoring period is less than one calendar year). Use this data to demonstrate, or otherwise, that methods of suspended solid control and flow rate measurement in the water systems connected to Lagoon C are BAT. Propose improvements and an implementation timetable for these if shown to be required by the above study and report in writing to the Agency. Implement any required improvements from date of approval in writing by the Agency.	Complete
IC12FF	The operator shall produce information in writing to the Agency on the actions being taken to minimise disruption to operation and minimise emissions from the installation during FGD plant construction and commissioning if units are not commissioned by 1/01/08	Complete

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
IC13FF	The operator shall produce separate written commissioning reports for each unit fitted with FGD demonstrating that that each unit meets or exceeds the performance parameters notified to the agency and the requirements imposed by the Large Combustion Plant Directive (2001/80/EC). Submit reports to the Agency.	Complete
IC14FF	The operator shall report in writing to the Agency on the FGD Waste Water Treatment Plant discharge and composition and the changes resulting in the overall stations water discharge system including this new flow.	Complete
IC15FF	A written plan shall be submitted to the Agency for approval detailing the results of a survey of hard-standing, kerbing, drainage and secondary containment for raw material, intermediate, product and waste storage areas and the measures to comply with the requirements of section 2.2.6 of the Combustion Sector TGN. Where appropriate, the plan shall contain dates for the implementation of individual measures. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the plan. The plan shall be implemented by the operator from the date of approval in writing by the Agency.	Complete
IC16FF	<p>The Operator shall undertake a review of the existing screening measures at the intakes and outfalls which provide and discharge water to and from the Installation. The review shall be undertaken with reference to the Eels (England and Wales) Regulations 2009 (SI 2009/3344) and the Environment Agency "Safe Passage of Eel" Regulatory Position Statement version 1 dated July 2012.</p> <p>The Operator shall submit details of the arrangement suitable to meet the requirements for the safe passage of eels [of the Eels (England and Wales) Regulations 2009 (SI 2009/3344)] by either:-</p> <ul style="list-style-type: none"> • Providing a written proposal for the installation of an eel screen. • Providing a written proposal to the modification of existing screening arrangements. • Providing a written response with an explanation and description of how the existing screening arrangements can be regarded to meet the requirements for the safe passage of eels [of SI 2009/3344] either without change or with mitigation measures. • Providing a written response setting out a case for an exemption <p>In all cases, the proposal shall be submitted in writing for the approval of the Environment Agency. Where appropriate, each proposal shall contain an assessment of alternative options considered including impacts on other fish species and an explanation of why the proposed option has been chosen.</p> <p>Where installation of eel screen; modification of existing arrangements; or mitigation measures are proposed, the submission shall contain relevant timescales for installation in accordance with the Safe Passage of Eel Regulatory Position Statement version 1 dated July 2012.</p> <p>The proposals shall be implemented in accordance with the Environment Agency's written approval.</p>	Complete

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
IC17FF	<p>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 IC16FF.</p> <p>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.</p> <p>a) If the Cost Benefit Assessment shows that the Benefits are greater than the costs by a factor of 1.5 or more, then the Operator shall submit to the Environment Agency for review a report setting out the costs and the technical and economic feasibility to introduce the improvements to achieve best available technique.</p> <p>b) If the Cost Benefit Assessment shows that the Benefits are not greater than the costs by a factor of 1.5 or more, then the Operator shall, with reference to the Environment Agency "Safe Passage for Eel: Guidance on exemptions, assess which alternative measure, or combination of alternative measures, could be implemented under a case of a conditioned Exemption. The Operator shall submit a report to the Environment Agency setting out the costs and the technical and economic feasibility of implementing their proposed alternative measure or measures.</p> <p>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).</p> <p>The proposals shall be implemented following written approval of the Environment Agency.</p> <p>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.</p>	Received 30/06/15, under assessment by the Environment Agency
IC18FF	For LCPD LCP309 and LCP310. Annual emissions of dust, sulphur dioxide and oxides of nitrogen including energy usage for the year 01/01/2015 to 31/12/2015 shall be submitted to the Environment Agency using form AAE1 via the NERP Registry. If the LCPD LCP was a NERP plant the final quarter submissions shall be provided on the RTA 1 form to the NERP Registry.	28/01/16
IC19FF	The operator shall submit a copy of the air quality monitoring and modelling results to demonstrate compliance with air quality standards for sulphur dioxide, oxides of nitrogen and particulate (PM10) during 2015, following the format and requirements of previous years submissions to the Environment Agency.	31/06/16

Table S1.4 Pre-operational measures for future development		
Reference	Operation	Pre-operational measures
PO1 FGD further info response 9/11/06 by RP to 25/10/06 question 17	Future modifications to water discharge system.	The operator shall confirm procedure for maintaining up to date information on the water discharge system and any modifications to it. Confirm any changes to quality and flow details of flows which exit via WS1, WS2, and W2. Report changes to the Agency in writing. Complete
PO2 FGD additional information Dated August 2006	Process control and monitoring of FGD process	The operator shall provide full details to the Agency in writing including type arrangement and specification of continuous instrumentation and show compliance with M2 guidance and other appropriate standards. Specify what interlocks controlling use of FGD are fitted. Complete
PO3 FGD info responses from operator 9/11/06 to 25/10/06 queries	Commissioning plan and schedules. Details of commissioning tests (Q1)	The operator shall provide details to the Agency in writing and dates of commissioning and acceptance testing proposals for newly constructed FGD. Include a list of contractual plant performance guarantees that require to be proved. Complete
PO4 FGD info responses from operator 9/11/06 to 25/10/06 queries	Chimney modifications (Q2)	The operator shall provide details and drawings of the main chimney as modified for FGD operation details to the Agency in writing –including specifications of newly installed materials and drainage provision and details of the design operational post FGD flue gas temperatures. Complete
PO5 FGD info responses from operator 9/11/06 to 25/10/06 queries	FGD absorber and post absorber duct specifications (Q3/12)	The operator shall provide details and drawings of FGD absorber and post absorber ducting including drainage provision in ducting and demister construction and performance specification details to the Agency in writing Complete

Table S1.4 Pre-operational measures for future development		
Reference	Operation	Pre-operational measures
PO6 FGD info responses from operator 9/11/06 to 25/10/06 queries	WWTP performance (Q5)	The operator shall provide answers to Q5 of 25/10/06 query doc details to the Agency in writing. Complete
PO7 FGD info responses from operator 9/11/06 to 25/10/06 queries	Manning training control and maintenance of FGD plant (Q8)	The operator shall provide details (include info on management chain and links with unit operator 9/11/06s) details to the Agency in writing. Complete
PO8 FGD info responses from operator 9/11/06 to 25/10/06 queries	Start up and shut down of FGD (Q13)	The operator shall provide answers to Q13 of 25/10/06 query document (follow up to extra information request) details to the Agency in writing. Complete
PO9 FGD info responses from operator 9/11/06 to 25/10/06 queries	Absorber oxidation air (Q15)	The operator shall provide answers to Q15 of 25/10/06 query document (follow up to extra information request) details to the Agency in writing. Complete
PO10	Advanced NOx Abatement trial using SNCR with urea	Prior to the commencement of operation of the trial the Operator shall provide a written commissioning plan for review by the Environment Agency. This commissioning plan shall include, but is not limited to; a programme for trialling the proposed fuel combinations; a procedure for reporting to the Environment Agency any occasion when ammonia slip daily average is greater than 5ppm; the site procedures for control of urea at the delivery and transfer point. Complete

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 LCP309 Unit1	240 MW, 18.9%	240 MW, 18.9%
A1 LCP309 Unit 2	240 MW, 19.3%	240 MW, 19.3%
A1 LCP309 Unit 3	240 MW, 18.3%	240 MW, 18.3%
A1 LCP309 Unit 4	240 MW, 18.5%	240 MW, 18.5%
A2 LCP310 GT1	As soon as the gas turbine start-up is initiated	As soon as the gas turbine is off-load
A2 LCP310 GT2	As soon as the gas turbine start-up is initiated	As soon as the gas turbine is off-load

Schedule 2 – Waste types, 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	As detailed in the Environment Agency documents "Position statement dated February 2010 and the Quality Protocol for Processed Fuel Oil dated August 2009" or as otherwise agreed in writing by the Agency.
Biomass fuels	As defined in Article 2(11) of the EU Directive 2001/80/EC) and included in the application or otherwise agreed in writing with the Agency.

Table S2.2 Permitted waste types and quantities for use as fuel	
Waste code	Description
Relevant exempt biomass waste code	Biomass fuels exempt from the requirements of the Waste Incineration Directive and Large Combustion Plant Directive (as defined in Article 2(11) of EU Directive 2001/80/EC and Article 2 of EU Directive 2000/76/EC) and included in the application or otherwise agreed in writing by the Agency
Other exempt waste code	Other fuels exempt from the requirements of the Waste Incineration Directive 2000/76/EC and included in the application or otherwise agreed in writing by the Agency for use in the installation

Schedule 3 – Emissions and monitoring

Table S3.1 Point source emissions to air						
Emission point ref. & location	Parameter	Source	Limit (including unit)- these limits do not apply during start up or shut down.	Reference period	Monitoring frequency	Monitoring standard or method
A1 [Point A1 on site plan in Schedule 7]	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	LCP No. 309 Coal fired boiler plant	450 mg/m ³	Calendar monthly mean	Continuous	BS EN 14181
A1 [Point A1 on site plan in schedule 7]	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	LCP No. 309 Coal fired boiler plant	550 mg/m ³	95% of validated daily means within a calendar year	Continuous	BS EN 14181
A1 [Point A1 on site plan in Schedule 7]	Sulphur dioxide	LCP No. 309 Coal fired boiler plant	350 mg/m ³ Note 1 400 mg/m ³ Note 2	Calendar monthly mean	Continuous	BS EN 14181
A1 [Point A1 on site plan in schedule 7]	Sulphur dioxide	LCP No. 309 Coal fired boiler plant	440 mg/m ³ Note 1 490 mg/m ³ Note 2	95% of validated daily means within a calendar year	Continuous	BS EN 14181
A1 [Point A1 on site plan in schedule 7]	Dust	LCP No. 309 Coal fired boiler plant	20 mg/m ³	Calendar monthly mean	Continuous	BS EN 14181
A1 [Point A1 on site plan in schedule 7]	Dust	LCP No. 309 Coal fired boiler plant	35 mg/m ³	95% of validated daily means within a calendar year	Continuous	BS EN 14181
A1 [Point A1 on site plan in schedule 7]	Oxygen	LCP No. 309 coal fired boiler plant	-	-	Continuous As appropriate to reference	BS EN 14181
A1 [Point A1 on site plan in schedule 7]	Water vapour	LCP No. 309 coal fired boiler plant	-	-	Continuous As appropriate to reference	BS EN 14181

Table S3.1 Point source emissions to air						
Emission point ref. & location	Parameter	Source	Limit (including unit)- these limits do not apply during start up or shut down.	Reference period	Monitoring frequency	Monitoring standard or method
A1 [Point A1 on site plan in schedule 7]	Stack gas temperature	LCP No. 309 coal 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. 309 coal 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. 309 coal fired boiler plant	-	-	Continuous	BS EN 16911 & TGN M2
A1 [Point A1 on site plan in schedule 7]	Total mercury	LCP No. 309 coal fired boiler plant	-	-	Annual	BS EN13211
A1 [Point A1 on site plan in schedule 7]	As required by the Method Implementation Document for BS EN 15259	LCP No. 309 Coal fired boiler plant	-	-	Pre-operation and when there is a significant operational change	BS EN 15259
A2/A3 [Point A2/A3 on site plan in schedule 7]	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	LCP No. 310 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/A3 [Point A2/A3 on site plan in schedule 7]	Sulphur dioxide	LCP No. 310 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/A3 [Point A2/A3 on site plan in schedule 7]	Dust	LCP No. 310 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 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/A3 [Point A2/A3 on site plan in schedule 7]	Carbon monoxide	LCP No. 310 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
A4	Particulate matter	Coal plant track hopper exhaust	No limit set	-	-	-
A5	Particulate matter	Coal plant conveyor Dust extraction	No limit set	-	-	-
FV Flash vessel vents	Non combustible gas and water vapour/steam	Boiler/turbine house	No limit set	-	-	-
SRV Safety Relief Valves	Steam	Main boilers	No limit set	-	-	-
EV 1-4 Explosion Vents	Combustion gases plus steam	Top Dead Space of main boilers	No limit set	-	-	-
TriV Safety Relief Valves Number	Steam – low pressure	Sulphur trioxide injection plant	No limit set	-	-	-
PFAV 1-6 PFA Vents	Particulate Matter	PFA silos	No limit set	-	-	-
LUB 1-4 Lubrication system/pressure vapour vents	Mixed vapour	On associated lubricating system	No limit set	-	-	-
T Tank vents	Mixed vapour	On tanks	No limit set	-	-	-
DTV Degasser Tower vent	Air	Degasser Tower	No limit set	-	-	-
GV 1-4 Generator vents	Mixed vapour	Turbine hall	No limit set	-	-	-
DG 1 Diesel generator	Combustion gases	Gas turbine house	No limit set	-	-	-
FWP 1-2 Diesel driven fire water pumps	Combustion gases	Cooling water pump house	No limit set	-	-	-

Table S3.1 Point source emissions to air						
Emission point ref. & location	Parameter	Source	Limit (including unit)- these limits do not apply during start up or shut down.	Reference period	Monitoring frequency	Monitoring standard or method
B Biomass plant vents	Particulate matter	Biomass handling plant	No limit set	-	-	-
BS Biomass silo vents	Particulate matter	Biomass handling plant	No limit set	-	-	-

Note 1: Limit applies when Unit 1 is non-operational or is operating with two or more other units.

Note 2: Limit applies when Unit 1 (no FGD fitted) is operating with one other unit.

Table S3.2 Point Source emissions to water (other than sewer) – emission limits and monitoring requirements						
Emission point ref. & location	Parameter	Source	Limit (incl. unit)	Reference period	Monitoring frequency	Monitoring standard or method
WWTP- FGD waste water treatment plant outlet	Flow	outlet from FGD waste water treatment	3000 m ³ /day	Day	Continuous Reported monthly as min max and average daily flow	Traceable to national standards
WWTP- FGD waste water treatment plant outlet	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
W2 (grid ref SJ 547 858) Discharge to St Helens Canal	Flow	W2 outlet From Lagoon C	9000 m ³ /day	Day	Day	Discharge periods to be recorded until completion of IC11FF then monitoring as agreed by the Agency.

Table S3.2 Point Source emissions to water (other than sewer) – emission limits and monitoring requirements						
Emission point ref. & location	Parameter	Source	Limit (incl. unit)	Reference period	Monitoring frequency	Monitoring standard or method
W2 (grid ref SJ 547 858) Discharge to St Helens Canal	Total suspended solids	W2 outlet From Lagoon C	100 mg/l	Rolling average of last 4 weekly spot samples (sample not required if no discharge in any week)	Weekly (if flow occurs)– analysed weekly and reported monthly as rolling average of last 4 weekly spot samples	BS EN 872
W2 (grid ref SJ 547 858) Discharge to St Helens Canal	Mercury and its compounds, expressed as mercury (Total Hg)	W2 outlet From Lagoon C	0.005 mg/l	Monthly spot sample	Monthly	BS EN 13506
W2 (grid ref SJ 547 858) Discharge to St Helens Canal	Cadmium and its compounds, expressed as cadmium (Total Cd)	W2 outlet From Lagoon C	0.01 mg/l	Monthly spot sample	Monthly	BS 6068-2.89
WS1 Cooling water purge sump overflow (grid ref SJ539855) Discharge to River Mersey	Total suspended solids	WS1 outlet From surface /stockyard drainage and cooling circuit purge	100 mg/l	Monthly average of weekly spot sample	Weekly – analysed weekly and reported monthly as monthly average	BS EN 872
WS1 Cooling water purge sump overflow (grid ref SJ539855) Discharge to River Mersey	Mercury and its compounds, expressed as mercury (Total Hg)	WS1 outlet From surface/ stockyard drainage and cooling circuit purge	0.005 mg/l	Monthly spot sample	Monthly	BS EN 13506
WS1 Cooling water purge sump overflow (grid ref SJ539855) Discharge to River Mersey	Cadmium and its compounds, expressed as cadmium (Total Cd)	WS1 outlet From surface/ stockyard drainage and cooling circuit purge	0.01 mg/l	Monthly spot sample	Monthly	BS 6068-2.89

Table S3.2 Point Source emissions to water (other than sewer) – emission limits and monitoring requirements						
Emission point ref. & location	Parameter	Source	Limit (incl. unit)	Reference period	Monitoring frequency	Monitoring standard or method
WS2 (grid ref SJ539854) Discharge to River Mersey	Total suspended solids	WS2 outlet From Lagoon C purge and FGD WWTP	100 mg/l	Monthly average of weekly spot sample	Weekly – analysed weekly and reported monthly as monthly average	BS EN 872
WS2 (grid ref SJ539854) Discharge to River Mersey	Mercury and its compounds, expressed as mercury (Total Hg)	WS2 outlet From Lagoon C purge and FGD WWTP	0.005 mg/l	Monthly spot sample	Monthly	BS EN 13506
WS2 (grid ref SJ539854) Discharge to River Mersey	Cadmium and its compounds, expressed as cadmium (Total Cd)	WS2 outlet From Lagoon C purge and FGD WWTP	0.01 mg/l	Monthly spot sample	Monthly	BS 6068-2.89
WS1 (grid ref SJ539855) Discharge to River Mersey	pH	WS1 outlet From surface /stockyard drainage and cooling circuit purge	5-9	Weekly spot check	Reported monthly as min max and average pH	BS EN ISO 10523
WS2 (grid ref SJ539854) Discharge to River Mersey	pH	WS2 outlet From Lagoon C purge and FGD WWTP	5-9	Weekly spot check	Reported monthly as min max and average pH	BS EN ISO 10523
W2 'C' Lagoon (grid ref SJ 547 858) Discharge to St Helens Canal	pH	W2 outlet From Lagoon C	5-9	none	None	Lagoon C pH measured at WS1/ WS2
WS1 (grid ref SJ539855) Discharge to River Mersey	Temperature	WS1 outlet (surface /stockyard drainage and cooling circuit purge)	30°C	Instantaneous	Continuous Reported monthly as min max and average temperature	Traceable to national standards
WS2 (grid ref SJ539854) Discharge to River Mersey	Temperature	WS2 outlet (Lagoon C purge and FGD WWTP)	30°C	Instantaneous	Continuous Reported monthly as min max and average temperature	Traceable to national standards

Emission point ref. & location	Parameter	Source	Limit (incl. unit)	Reference period	Monitoring frequency	Monitoring standard or method
W2 (grid ref SJ 547 858) Discharge to St Helens Canal	Temperature	W2 outlet From Lagoon C	30°C	none	None	Lagoon C temperature measured continuously at WS1/ WS2
WS1 (grid ref SJ539855) and WS2 (grid ref SJ539854) Discharge to Mersey	Flow	WS1 outlet Purge Sump overflow & WS2 outlet C lagoon, purge & FGD WWTP	195,000 m ³ /day	Day	Continuously monitored (Monitored & reported separately for WS1 and WS2 monthly as min, max, and average daily flow)	BS: ISO 1438:2008 Traceable to National Standards Note 1 Note 2

Note 1 - For WS1 MCerts does not apply to flows less than 60 litres/second due to increase of uncertainty values at low flows. Agreed and approved 04/12/14.

Note 2 - For WS2 MCerts does not apply to flows less than 30 litres/second due to increase of uncertainty values at low flows. Agreed and approved 04/12/14

Substance	Medium	Limit (including unit)		Emission Points
Particulate Matter, Sulphur dioxide and Oxides of nitrogen	Air	Assessment year	LCP TNP Limit	LCP309
		01/01/16 and subsequent years until 31/12/19	Emission allowance figure shown in the TNP Register as at 30 April the following year	
		01/01/20-30/06/20		

Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method Note 1	Other specifications
Inlet to the FGD WWTP	Cadmium and its compounds, expressed as cadmium (Total Cd)	Monthly	BS 6068-2.89	
	Nickel	Monthly	BS 6068	
	Zinc	Monthly	BS 6068	
WWTP - Discharge from FGD Waste water treatment plant	pH	Continuous	BS EN ISO 10523	Reported as min, max and average pH for the month

Table S3.4 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
WWTP - Discharge from FGD Waste water treatment plant	Mercury and its compounds, expressed as mercury (Total Hg)	Monthly	BS EN 13506	
	Cadmium and its compounds, expressed as cadmium (Total Cd)	Monthly	BS 6068-2.89	
	Total copper	Monthly	BS 6068	
	Copper (on filtered sample)	Monthly	BS 6068	
	Arsenic	Monthly	BS 6068	
	Boron	Monthly	BS 6068	
	Chloride	Monthly	As in current edition of Agency guidance M18	
	Silver	Monthly	BS 6068	
	Nickel	Monthly	BS 6068	
	Lead	Monthly	BS 6068	
	Antimony	Monthly	BS 6068	
	Tin	Monthly	BS 6068	
	Vanadium	Monthly	BS 6068	
	Chromium	Monthly	BS 6068	
	Zinc	Monthly	BS 6068	
	Selenium	Monthly	BS 6068	
	Iron	Monthly	BS 6068	
	Aluminium	Monthly	BS 6068	
	Manganese	Monthly	BS 6068	
	Molybdenum	Monthly	BS 6068	
Fluoride	Monthly	As in current edition of Agency guidance M18		
Note 1: Or as method in current edition of M18 guidance - unless otherwise approved in writing by the 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	1 January, 1 April, 1 July, 1 October
	A2/A3	Every 2 years	1 January
Dust	A1	Every 3 months	1 January, 1 April, 1 July, 1 October
	A2/A3	Every 2 years	1 January
Sulphur dioxide	A1	Every 3 months	1 January, 1 April, 1 July, 1 October
	A2/A3	Every 2 years	1 January
Carbon monoxide	A2/A3	Every 2 years	1 January
Mercury	A1	Annually	1 January
Emissions to water Parameters as required by condition 3.5.1	WWTP- FGD, W2, WS1, WS2	Every 6 months	1 January, 1 July
Process monitoring requirements	Inlet and outlet of FGD WWTP for cadmium, nickel and zinc Outlet of FGD WWTP for pH	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

Parameter	Units
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

Parameter	Frequency of assessment	Units
Thermal Input Capacity for each LCP	Annually	MW
Annual Fuel Usage for each LCP	Annually	TJ
Total Emissions to Air of NO _x for each LCP	Annually	t
Total Emissions to Air of SO ₂ for each LCP	Annually	t
Total Emissions to Air of dust for each LCP	Annually	t
Operating Hours for each LCP	Annually	hr

Media/ parameter	Reporting format	Starting Point	Agency recipient	Date of form
Air & Energy	Form IED AR1 – SO ₂ , NO _x and dust mass emission and energy	01/01/16	National and Area	31/12/15
Air	Form IED RTA1 –TNP quarterly emissions summary log	01/01/16	National and Area	31/12/15
LCP	Form IED HR1 – operating hours	01/01/16	National and Area	31/12/15
Air	Form IED CON 1 – continuous monitoring	01/01/16	Area Office	31/12/15
CEMs	Form IED CEM – Invalidation Log	01/01/16	Area Office	31/12/15
LCP	Form IED BD1 - Cumulative annual rolling malfunction and breakdown hours	01/01/16	Area Office	31/12/15
Air	Form IED MF1 – Pollutant concentrations during any day with malfunction or breakdown of abatement plant	01/01/16	Area Office	31/12/15

Table S4.4 Reporting forms				
Media/ parameter	Reporting format	Starting Point	Agency recipient	Date of form
Air	Form IED PM1 - discontinuous monitoring and load.	01/01/16	Area Office	31/12/15
Resource Efficiency	Form REM1 – resource efficiency annual report	01/01/16	National	31/12/15
Water	Form water 1 or other form as agreed in writing by the Environment Agency	01/01/16	Area Office	31/12/15

Schedule 5 – Notification

These pages outline the information that the operator must provide.

Units of measurement used in information supplied under Part A and B requirements shall be appropriate to the circumstances of the emission. Where appropriate, a comparison should be made of actual emissions and authorised emission limits.

If any information is considered commercially confidential, it should be separated from non-confidential information, supplied on a separate sheet and accompanied by an application for commercial confidentiality under the provisions of the EP Regulations.

Part A

Permit Number	
Name of operator	
Location of Facility	
Time and date of the detection	

(a) Notification requirements for any malfunction, breakdown or failure of equipment or techniques, accident, or emission of a substance not controlled by an emission limit which has caused, is causing or may cause significant pollution	
To be notified within 24 hours of detection	
Date and time of the event	
Reference or description of the location of the event	
Description of where any release into the environment took place	
Substances(s) potentially released	
Best estimate of the quantity or rate of release of substances	
Measures taken, or intended to be taken, to stop any emission	
Description of the failure or accident.	

(b) Notification requirements for the breach of a limit	
To be notified within 24 hours of detection unless otherwise specified below	
Emission point reference/ source	
Parameter(s)	
Limit	
Measured value and uncertainty	
Date and time of monitoring	
Measures taken, or intended to be taken, to stop the emission	

Time periods for notification following detection of a breach of a limit	
Parameter	Notification period

(c) Notification requirements for the detection of any significant adverse environmental effect	
To be notified within 24 hours of detection	
Description of where the effect on the environment was detected	
Substances(s) detected	
Concentrations of substances detected	
Date of monitoring/sampling	

Part B – to be submitted as soon as practicable

Any more accurate information on the matters for notification under Part A.	
Measures taken, or intended to be taken, to prevent a recurrence of the incident	
Measures taken, or intended to be taken, to rectify, limit or prevent any pollution of the environment which has been or may be caused by the emission	
The dates of any unauthorised emissions from the facility in the preceding 24 months.	

Name*	
Post	
Signature	
Date	

* authorised to sign on behalf of the operator

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.

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

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

“CEN” means Comité Européen de Normalisation.

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

“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.

“Emergency conditions” means black start or when this is a potential national loss of supply.

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

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

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

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

“Hazardous property” has the meaning in Annex III 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.

“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.

“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.

“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.

“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.

“off load” means that no electricity is being generated

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

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

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

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

“Waste code” means the six digit code referable to a type of waste in accordance with the List of Wastes (England) Regulations 2005, or List of Wastes (Wales) Regulations 2005, as appropriate, and in relation to hazardous waste, includes the asterisk.

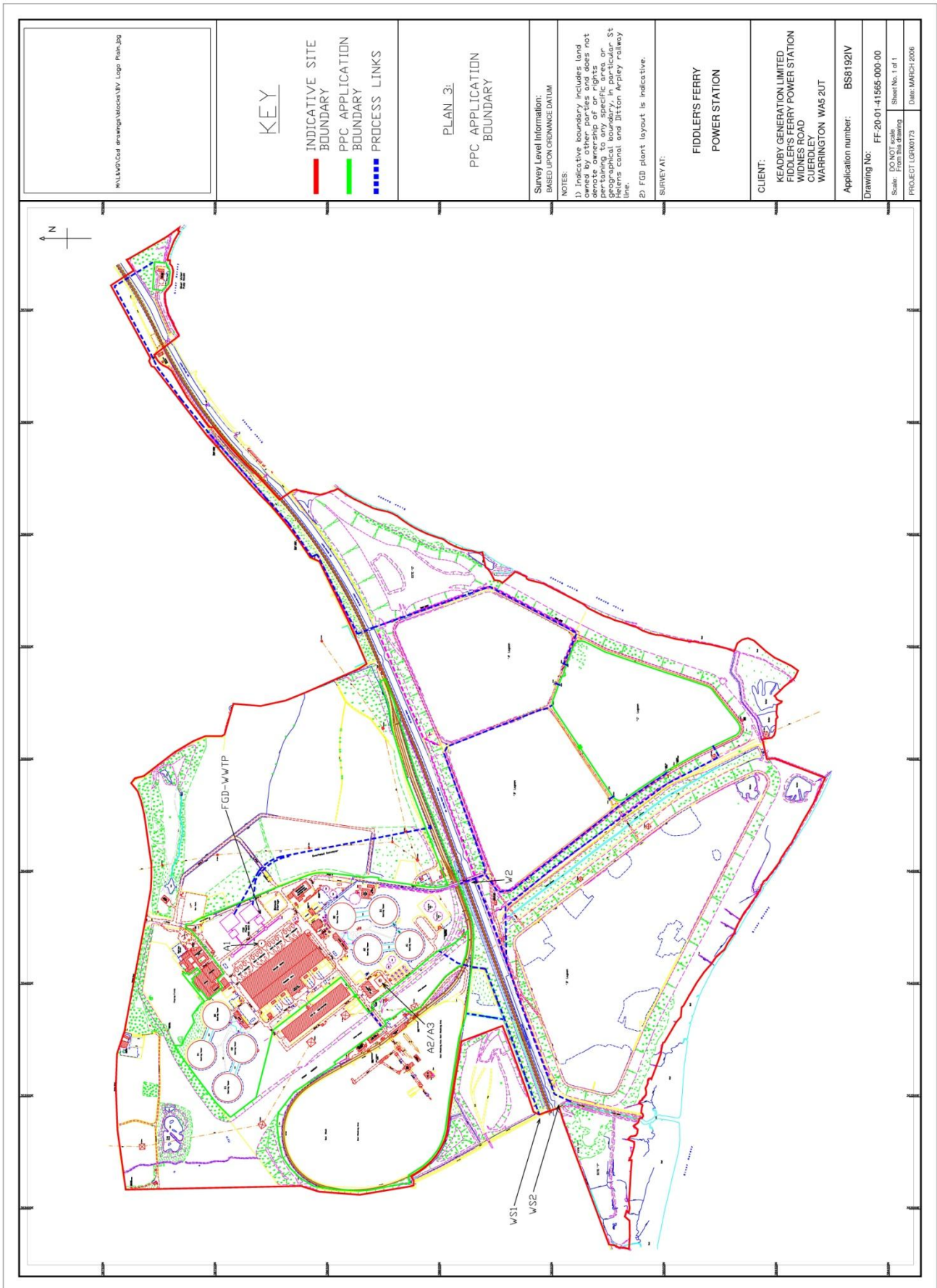
Where a minimum limit is set for any emission parameter, for example pH, reference to exceeding the limit shall mean that the parameter shall not be less than that limit.

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.

Schedule 7 – Site plan



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