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Permit with introductory note

The Environmental Permitting (England & Wales) Regulations 2016

Uniper UK Limited

Connah's Quay Power Station
Kelsterton Road
Connah's Quay
Deeside
Flintshire
CH5 4BP

Permit number
EPR/NP3037AF

Connah's Quay Power Station

Permit number EPR/NP3037AF

Introductory note

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

This permit controls the operation of a large combustion plant. The relevant listed activity is Section 1.1 A(1)(a): Burning any fuel in an appliance with a rated thermal input of 50 megawatts or more. The permit implements the Chapter III requirements for large combustion plant (LCP) of the EU Directive on Industrial Emissions.

The power station is located on the banks of the Dee Estuary in Connah's Quay, North Wales and is currently owned and operated by Uniper UK Limited. The installation consists of a gas treatment plant and four combined cycle gas turbines (CCGTs) providing 1426MW of electricity exported to the National Grid. Gas is delivered to the installation from the ENI Petroleum Gas Terminal at the Point of Ayr. The gas is primarily intended for combustion within gas turbines wherever possible, however the excess gas supplied may also be processed in the gas treatment plant to produce a gas of suitable quality for its export to the National Grid.

The power station comprises four single shaft (rigidly coupled gas turbine, steam turbine and generator) combined cycle power units. Each gas turbine exhausts directly to a heat recovery steam generator (HRSG) - or boiler, which supplies a steam turbine comprising separate high, intermediate and low pressure cylinders. The combined cycle total guaranteed gross output is 363MWe. The four turbines are fitted with dry low NO_x control. Exhaust steam is condensed back to water and fed back to the HRSG for re-use. Water abstracted from the River Dee is used to cool the condenser. The cooling water is circulated through low level hybrid cooling towers, where the heat is rejected to atmosphere via conduction, convection and evaporation.

The gas treatment plant is located in the north west part of the installation and treats the gas entering from the Point of Ayr terminal the purpose of which is to remove moisture, contaminants and drive off nitrogen through chilling to leave methane. The activity is technically connected to the combustion activity. The activity consists of a pre-treatment section with gas metering, molecular sieve absorbers to remove moisture, and a mercury removal vessel to protect the equipment from traces of mercury. The nitrogen rejection unit reduces the nitrogen concentration of the gas to about 5%. The rejected nitrogen is made harmless by passing through a thermal oxidiser. When the molecular sieves are saturated with moisture they are regenerated by heating the rejected nitrogen stream in a natural draught gas fired heater and passing the hot gas back through the molecular sieves. This off-gas is passed through the thermal oxidiser. The gas pressure is then raised by compressors before it enters the gas turbines or the national transmission system.

The Operator's Environmental Management System is externally certified to ISO 14001 and the installation (as a CCGT) are not eligible to take part in Climate Change Agreement (CCA) or direct Participant Agreement (DPA), however they do take part in the EU ETS (Emissions Trading Scheme). The choice of natural gas as a fuel represents Best Available Techniques (BAT) for generation of electricity in industrial gas turbines.

The main emissions are oxides of nitrogen to air from the four emissions points from the gas turbines, and the purge pond outlet to the River Dee.

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/MP3337SH	Duly made 17/03/2006	
Schedule 4 response (additional response)	Received 26/10/2006	
Supplementary Information requested	20/11/2006	
Supplementary Information received	20/11/2006	
Supplementary Information requested (email)	12/01/2007	
Supplementary Information received (email)	12/01/2007	
Permit determined EPR/MP3337SH	09/02/2007	Original permit issued to E.ON UK plc.
Variation Application EPR/MP3337SH/V002	Duly Made 05/06/2008	
Schedule 5 Request for further information	Sent 14/09/2008	
Further information received	01/09/2008	
Variation EPR/MP3337SH/V002 issued	29/09/2008	
Variation application EPR/MP3337SH/V003	Duly Made 05/12/2008	
Supplementary information requested	10/10/2008	
Supplementary information received	23/10/2008	
Supplementary information requested	23/02/2009	
Supplementary information received	27/02/2009	
Variation EPR/MP3337SH/V003 issued	18/03/2009	
Variation application EPR/MP3337SH/V004	Duly Made 09/11/2010	
Variation EPR/MP3337SH/V004	07/12/2010	
Variation application EPR/MP3337SH/V005	Duly Made 27/01/2012	
Schedule 5 Request for further information	Sent 29/02/2012	
Further information received	23/03/2012	
Additional information received	22/05/2012	Assessment of further Chlorite Decay Tests
Schedule 5 Request for further information	Sent 04/07/2012	
Further information received	24/07/2012	
Additional information received	09/08/2012	Dosing systems
Additional information received	17/10/2012	Commissioning Information and Emission Limit Values/Monitoring
Additional Information received	26/10/2012	Various responses

Status log of the permit		
Description	Date	Comments
Additional information received	19/11/2012	Timescales for staged commissioning programme
Variation EPR/MP3337SH/V005 issued	06/12/2012	
Variation determined EPR/MP3337SH/V006	11/03/2013	Environment Agency Initiated Variation, to incorporate Eel Regulations improvement condition
Variation application EPR/MP3337SH/V007	Duly Made 14/01/2013	Application for upgraded combustion system and additional emission point for auxiliary boiler
Variation application EPR/MP3337SH/V007 determined	04/04/2013	Varied permit issued
Variation application EPR/MP3337SH/V008	Duly Made 19/08/2014	Application for replacement of single auxiliary boiler with five new auxiliary boilers, permission to operate in double two shifting mode and additional emission point for Old Rockcliffe surface water drain
Schedule 5 Request for further information	Sent 09/10/2014	Request for revision of elements of the air quality modelling assessment for new auxiliary boilers and double two shifting mode of operation.
Further information received	17/10/2014	Response to queries relating to air quality modelling methodology and provision of risk assessment.
Variation determined EPR/MP3337SH/V008	17/03/2015	Varied permit issued
Application EPR/NP3037AF/T001 (full transfer of permit EPR/MP3337AF)	Duly made 09/07/2015	Application to transfer the permit in full to Uniper UK Limited.
Transfer determined EPR/NP3037AF	12/08/2015	Full transfer of permit issued.
Regulation 60 Notice sent to the Operator	14/11/2014	Issue of a Notice under Regulation 60(1) of the EPR. Natural Resources Wales 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	26/03/2015	Response received from the Operator.
Additional information received	30/06/2015	Response to request for further information (RFI) dated 09/06/15.
Additional information received	30/10/2015	Further information received from the Operator.
Variation determined EPR/NP3037AF/V002	30/12/2015	Varied and consolidated permit issued in modern condition format. Variation effective from 01/01/2016.

Status log of the permit		
Description	Date	Comments
Variation application PAN-000485 (EPR/NP3037AF/V003)	Duly made 12/07/2016	Application to remove noise attenuators from cooling tower fans, change emissions to air reference period and correct errors in emissions to water monitoring requirements.
Additional information requested	24/08/2016	Modelling data files associated with noise impact assessment requested.
Additional information received	27/09/2016	Noise modelling data files received.
Additional information requested	02/11/2016	Clarification of derived sound power and pressure levels requested.
Additional information received	10/11/2016	Clarification of derived sound power and pressure levels received.
Variation PAN-000485 (EPR/NP3037AF/V003) determined	25/11/2016	Variation issued.
Variation application received EPR/NP3037AF/V004	Duly Made 09/01/2017	Application to change the company's registered office address
Variation determined EPR/NP3037AF/V004	07/02/2017	Variation issued to Uniper UK Limited
LCP Regulation 61 Notice sent to the Operator	09/05/2018	Issue of a Notice under Regulation 61(1) of the EPR. Natural Resources Wales initiated review and variation to vary the permit to introduce new Emission Limit Values (ELVs) following the publication of the revised Best Available Techniques (BAT) Reference Document (BRef) for Large Combustion Plants (LCP).
LCP Regulation 61 Notice response received	22/11/2018	Response received from the Operator
Refining of Mineral Oil and Gas Regulation 61 Notice sent to the Operator	29/03/2019	Issue of a Notice under Regulation 61(1) of the EPR. Natural Resources Wales initiated review and variation to vary the permit following the publication of the revised Best Available Techniques (BAT) Reference Document (BRef) for the Refining of Mineral Oil and Gas.
Refining of Mineral Oil and Gas Regulation 61 Notice response received	22/05/2019	Response received from the Operator
Additional information received	30/08/2019	Response to request for further information on the Operator's LCP Reg 61 response (RFI dated 10/06/2019)
Variation determined EPR/NP3037AF/V005	30/06/2020	Varied and consolidated permit issued in modern condition format to Uniper UK Limited.

Other Part A installation permits relating to this installation		
Operator	Permit number	Date of issue
Uniper UK Limited	24/67/10/124/V004 (License to abstract water)	09/09/2015
Uniper UK Limited	EU-ETS: UK-W-IN-13308 (Emissions trading scheme)	

End of introductory note

Permit

The Environmental Permitting (England and Wales) Regulations 2016

Permit number

EPR/NP3037AF

This is the consolidated permit referred to in the variation and consolidation notice for application EPR/NP3037AF/V005 authorising,

Uniper UK Limited (“the operator”),

whose registered office is

Compton House

2300 The Crescent

Birmingham Business Park

Birmingham

B37 7YE

company registration number **02796628**

to operate an installation at

Connah's Quay Power Station

Kelsterton Road

Connah's Quay

Deeside

Flintshire

CH5 4BP

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

Name	Date
Holly Noble	30/06/2020

Permitting Team Leader – Installations and RSR

Authorised on behalf of Natural Resources Wales

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 red 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 Natural Resources Wales.
- 2.3.2 For the following activities referenced in schedule 1, table S1.1: LCP96, LCP97, LCP98 and LCP99. 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 December 2015 (as correct March 2017) or any later version unless otherwise agreed in writing by Natural Resources Wales.
- 2.3.3 If notified by Natural Resources Wales that the activities are giving rise to pollution, the operator shall submit to Natural Resources Wales 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 Natural Resources Wales.
- 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: LCP96, LCP97, LCP98 and LCP99. 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
- 2.3.6 For the following activities referenced in schedule 1, table S1.1: LCP96, LCP97, LCP98 and LCP99. The effective Dry Low NO_x threshold shall conform to the specifications set out in Schedule 1, tables S1.2 and S1.6.
- 2.3.7 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.
- 2.3.8 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.

- 2.3.9 The discharge from the purge storage pond shall take place between one hour after the predicted time of high water and 4 hours after the predicted time of high water.

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 Natural Resources Wales.
- 2.4.2 Except in the case of an improvement which consists only of a submission to Natural Resources Wales, the operator shall notify Natural Resources Wales 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(a), S3.1(b) and S3.2.
- 3.1.2 The limits given in schedule 3 shall not be exceeded.
- 3.1.3 Total annual emissions from the LCP emission points set out in schedule 3 tables S3.1(a) and S3.2 of a substance listed in schedule 3 table S3.3 shall not exceed the relevant limit in table S3.3.
- 3.1.4 Periodic monitoring shall be carried out at least once every 5 years for groundwater and 10 years for soil, unless such monitoring is based on a systematic appraisal of the risk of contamination.

3.2 Emissions of substances not controlled by emission limits

- 3.2.1 Emissions of substances not controlled by emission limits (excluding odour) shall not cause pollution. The operator shall not be taken to have breached this condition if appropriate measures, including, but not limited to, those specified in any approved emissions management plan, have been taken to prevent or where that is not practicable, to minimise, those emissions.
- 3.2.2 The operator shall:
- (a) if notified by Natural Resources Wales that the activities are giving rise to pollution, submit to Natural Resources Wales 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 Natural Resources Wales.
- 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 Natural Resources Wales, 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 Natural Resources Wales that the activities are giving rise to pollution outside the site due to odour, submit to Natural Resources Wales 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 Natural Resources Wales.

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 Natural Resources Wales, 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 carry out and record a review of the site noise management plan at least every 4 years.
- 3.4.3 The operator shall carry out a noise monitoring and assessment exercise from the site (over a calendar year period) at the nearest sensitive receptors during day time and night time hours as per BS4142:2014 at least every 4 years. A full report together with any recommendations shall be submitted to Natural Resources Wales as soon as reasonably practicable following the report being made available.

3.5 Monitoring

- 3.5.1 The operator shall, unless otherwise agreed in writing by Natural Resources Wales, undertake the monitoring specified in the following tables in schedule 3 to this permit:
 - (a) point source emissions specified in tables S3.1(a), S3.1(b), S3.2; and S3.3.
- 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 Natural Resources Wales.
- 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(a), S3.1(b), S3.2 and S3.3 unless otherwise agreed in writing by Natural Resources Wales.

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 LCP BRef BAT 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 Natural Resources Wales 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 Natural Resources Wales 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 Natural Resources Wales.
- 3.6.6 Where required by a condition of this permit to check the measurement equipment, the operator shall submit a report to Natural Resources Wales 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, annual and daily averages shall be determined from the measured valid hourly average values after having subtracted the value of the 95% confidence interval;
 - b) the 95% confidence interval for nitrogen oxides and sulphur dioxide of a single measured result shall be taken to be 20%;
 - c) the 95% confidence interval for dust releases of a single measured result shall be taken to be 30%;
 - d) the 95% confidence interval for carbon monoxide releases of a single measured result shall be taken to be 10%;
 - e) an invalid hourly average means an hourly average period invalidated due to malfunction of, or maintenance work being carried out on, the continuous measurement system. However, to allow some discretion for zero and span gas checking, or cleaning (by flushing), an hourly average period will count as valid as long as data has been accumulated for at least two thirds of the period. Such discretionary periods are not to exceed more than 5 in any one 24-hour period unless agreed in writing. Where plant may be operating for less than the 24-hour period, such discretionary periods are not to exceed more than one quarter of the overall valid hourly average periods unless agreed in writing; and
 - f) any day, in which more than three hourly average values are invalid shall be invalidated.

4 Information

4.1 Records

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

- (a) be legible;
- (b) be made as soon as reasonably practicable;
- (c) if amended, be amended in such a way that the original and any subsequent amendments remain legible, or are capable of retrieval; and
- (d) be retained, unless otherwise agreed in writing by Natural Resources Wales, 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 Natural Resources Wales.

4.2 Reporting

- 4.2.1 The operator shall send all reports and notifications required by the permit to Natural Resources Wales using the contact details supplied in writing by Natural Resources Wales.
- 4.2.2 A report or reports on the performance of the activities over the previous year shall be submitted to Natural Resources Wales by 31 January (or other date agreed in writing by Natural Resources Wales) 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 annual production /treatment data set out in schedule 4 table S4.2; and
 - (c) the performance parameters set out in schedule 4 table S4.3 using the forms specified in table S4.4 of that schedule.
- 4.2.3 Within 28 days of the end of the reporting period the operator shall, unless otherwise agreed in writing by Natural Resources Wales, 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 Natural Resources Wales, 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 For the following activities referenced in schedule 1, table S1.1: LCP96, LCP97, LCP98 and LCP99. Unless otherwise agreed in writing with Natural Resources Wales, within 1 month of the end of each quarter, the operator shall submit to the TNP Register and Natural Resources Wales 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 Natural Resources Wales,
 - (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 Natural Resources Wales, and
 - (ii) take the measures necessary to ensure that compliance is restored within the shortest possible time;

- (c) of a breach of permit condition which poses an immediate danger to human health or threatens to cause an immediate significant adverse effect on the environment, the operator must immediately suspend the operation of the activities or the relevant part of it until compliance with the permit conditions has been restored.
- 4.3.2 Any information provided under condition 4.3.1 (a)(i), 4.3.1 (b)(i) where the information relates to the breach of a condition specified in the permit shall be confirmed by sending the information listed in schedule 5 to this permit within the time period specified in that schedule.
- 4.3.3 Where Natural Resources Wales has requested in writing that it shall be notified when the operator is to undertake monitoring and/or spot sampling, the operator shall inform Natural Resources Wales when the relevant monitoring and/or spot sampling is to take place. The operator shall provide this information to Natural Resources Wales at least 14 days before the date the monitoring is to be undertaken.
- 4.3.4 Natural Resources Wales 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) Natural Resources Wales 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 Natural Resources Wales shall be given at least 14 days notice before implementation of any part of the site closure plan.
- 4.3.7 Where the operator has entered into a climate change agreement with the Government, Natural Resources Wales shall be notified within one month of:
- (a) a decision by the Secretary of State not to re-certify the agreement;
 - (b) a decision by either the operator or the Secretary of State to terminate the agreement; and
 - (c) any subsequent decision by the Secretary of State to re-certify such an agreement.
- 4.3.8 The operator shall inform Natural Resources Wales 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	LCP96, LCP97, LCP98 and LCP99: Combined Cycle gas turbine power plant production of steam and electricity.	Combustion of natural gas in a combined cycle gas turbine (CCGT). From receipt of raw materials to supply of electricity and from water intake to water discharge. Permitted to operate in single or double two-shifting mode.
		Five auxiliary boilers fired on natural gas with a thermal rating of 7.545 MW each.	Combustion of natural gas in a boiler
		Standby emergency diesel generators	From generator to gas turbines
AR2	Section 1.2 A(1) (a) – Refining gas where this is likely to involve the use of 1,000 tonnes or more of gas in any period of 12 months	Gas Treatment Plant	From receipt of natural gas to the point after the heaters which reheat and change the gas pressure where the gas enters the gas turbines
Directly Associated Activity			
AR3	Directly associated activity	Surface water drainage	Handling and storage of site drainage until discharge to the site surface water system.
AR4	Directly associated activity	Water treatment de-ionising plant	From receipt of raw materials, handling, to dispatch to cooling water purge system.
AR5	Directly associated activity	Waste management	Waste generation and handling – from generation of waste to despatch from the installation
AR6	Directly associated activity	Electricity transformers and the banking compound	From generator to the connection to the National Grid
AR7	Directly associated activity	Standby emergency diesel generators	From generator to gas turbines
AR8	Directly associated activity	Generation of chlorine dioxide	Cooling water treatment

Table S1.2 Operating techniques		
Description	Parts	Date Received
Application	Sections 2.1 & 2.2 of the application as well as other sections of the application	06/03/2006 (Received) 17/03/2006 (Duly Made)
Response to Schedule 4 Notice Request issued on 29/09/2006	Response to question 5, 6, 7, 8, 9, 10, 14, 15, 16, 29, detailing process control, 30 detailing emissions limits	26/10/2006
Supplementary Information	Email from Bill Smith at E.ON – Connah's Quay Power Station dated 12/01/2007	12/01/2007
Supplementary Information	Letter dated 20/11/2006 regarding two-shifting	22/11/2006
Standard Variation Application (EA/EPR/MP3337SH/V003)	Variation application Duly Made 05/06/2008	20/05/2008
Standard Variation further information request	EPR Schedule 5 Variation Further Information request dated 14/09/2008	01/09/2008
Variation Application EPR/MP3337SH/V004	Response to questions in Application Form EPC – Part C	09/11/2010
Standard Variation Application EPR/MP3337SH/V005	Sections 2.1 to 2.6 of the application "Connah's Quay Power Station Application to Vary Permit MP3337SH – Chlorine Dioxide Dosing System Modification – October 2011.	09/12/2011
Response to Schedule 5 Notice requiring further information	The answer to question 10 of the Schedule 5 Notice (issued 29/02/2012) regarding monitoring methods and standards	23/03/2012
Additional information received	Assessment of further Chlorite Decay Tests	22/05/2012
Response to Schedule 5 Notice requiring further information	Response to Schedule 5 Notice	24/07/2012
Additional information	Response to Schedule 5 Notice	24/07/2012
Additional information	Appendix 1 – Additional Commissioning Information:- 1. Cooling tower dosing system description 2. Water commissioning 3. Chemical commissioning 4. Stage 1 of Proposed Chlorine Dioxide Introductory Dosing Plan 5. Stage 2 of Proposed Chlorine Dioxide Introductory Dosing Plan 6. Stage 3 of Proposed Chlorine Dioxide Introductory Dosing Plan Additional information supplied for clarification B5, Monitoring Methods Confirmation	17/10/2012
Additional information	Responses (Points 1 and 2)	26/10/2012
Additional information	Appendix 1 – Timescales (including durations)	19/11/2012
Variation application EPR/MP3337SH/V007	Section 3.1 of the DLN 2.6+ Upgrade Supporting Document entitles "Connah's Quay Safety and Environmental Management System"	20/12/2012

Table S1.2 Operating techniques		
Variation application EPR/MP3337SH/V008	Section 3.2 of the variation application document entitled 27/06/2014 EPR/MP3337SH/V008 'Connah's Quay Power Station EPR/MP3337SH Environmental permit variation application for the operation of five new auxiliary boilers at Connah's Quay Power Station' which describes the operation of the four main CCGT units and five new auxiliary boilers in double two shifting mode.	27/06/2014
Response to regulation 60(1) Notice – request for information dated 14/11/14	Compliance route and operating techniques identified in response to questions 2 (LCP compliance route), 3 (TNP evidence of notification), 4 (LCP configuration), 5 (LCP net rated thermal input), 6 (MSUL/MSDL), 9 (Proposed ELVs) and 11 (Monitoring requirements).	26/03/2015
Receipt of additional information to the regulation 60(1) Notice. requested by letter dated 09/06/15	Further information received in response to questions 5 (LCP net rated thermal input), 6 (MSUL/MSDL) and 9 (Proposed ELVs).	30/06/2015
Receipt of additional information to the regulation 60(1) Notice.	Further information received in response to questions 5 (LCP net rated thermal input), 6 (MSUL/MSDL) and 9 (Proposed ELVs). Including mandatory operation of gas turbines in lean premix mode 6.3 after start up completed and until shut down begins.	30/10/2015
Variation application EPR/NP3037AF/V003	The removal of noise attenuators from the fans in cooling towers 3 and 4 shall be carried out in accordance with Section 2.4 of the variation application report 'Application to vary the Environmental Permit at Connah's Quay Power Station to allow the removal of cooling tower attenuators and amendment to monitoring protocols.'	29/07/2016
Regulation 61 Notice response	All parts of operator response to LCP Regulation 61 notice sent 09/05/2018	22/11/2018
Regulation 61 Notice response	All parts of operator response to Gas and Oil Regulation 61 notice sent 29/03/2019	22/05/2019
Receipt of additional information to the Regulation 61 Notice response.	All parts of response to request for further information (RFI) on the Operator's LCP Reg 61 response (RFI dated 10/06/2019).	30/08/2019

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
IC1	<p>A written plan shall be submitted to the Agency for approval detailing the results of an investigation to determine a method of gathering and storing data from the continuous pH monitoring of discharges of water from W2. The plan shall include but not be limited to a timetable for implementing the plan. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the procedure.</p> <p>The procedure shall be implemented by the operator from the date of approval in writing by the Agency</p>	Completed
IC2	<p>The Operator shall undertake a review report of the drainage on site and shall include but not be limited to the identification of all emission points to water. The review shall include all potential discharge points on site. Where appropriate, the plan shall contain a timetable for improvements to be made. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the plan.</p> <p>The plan shall be implemented by the operator from the date of approval by the Agency.</p>	Completed
IC3	<p>The Operator shall undertake a written review of the best available techniques (BAT) listed within the Combustion Sector TGN IPPC S1.01 Section 2 for the emissions of oxides of nitrogen. The review shall include, but not be limited to, all of the relevant techniques listed within the TGN, the reduction in the level of pollutants (for each option) and the costs of achieving the reduction (for each option). The review shall build upon the information provided in the Schedule 4 response. The report shall include a timetable to implement any proposed changes as appropriate. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the plan.</p> <p>The Operator shall implement the proposals as agreed in writing with the Environment Agency.</p>	Completed
IC4	<p>A written site noise management plan detailing the measures to be used to control emissions of noise shall be submitted to the Agency for approval. This shall comply with Horizontal Guidance note H3. Where appropriate the reviewed, updated version of the plan shall include but not be limited to, a timetable for achieving the improvements to comply with the requirements of the guidance. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the plan.</p> <p>The updated procedure shall be implemented by the operator from the date of approval in writing by the Agency.</p>	Completed
IC5	<p>A written updated and reviewed preventative maintenance and inspection plan shall be submitted to the Agency for approval to encompass all plant whose failure could lead to an impact on the environment. The procedure shall include but not be limited to, a timetable for achieving any improvements identified. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the procedure.</p> <p>The procedure shall be implemented by the operator from the date of approval in writing by the Agency</p>	Completed

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
IC6	<p>A written plan shall be submitted to the Agency for approval detailing the measures to be taken so that monitoring equipment, techniques, personnel and organisations employed for the emissions monitoring programme shall have either MCERTS certification or accreditation in accordance with condition 3.6.3. The plan shall include but not be limited to, a timetable for achieving this standard for any elements that are not MCERTS certified. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the procedure.</p> <p>The procedure shall be implemented by the operator from the date of approval in writing by the Agency</p>	Completed
IC7	<p>A written accident management plan shall be submitted to the Agency for approval to encompass all relevant aspects and measures as appropriate. This shall also include a flood protection risk assessment for the site and a review and assessment of firewater hazards. The procedure shall include but not be limited to, a timetable for achieving the improvements to comply with the requirements of the Combustion Sector Technical Guidance Note (TGN) where appropriate. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the procedure.</p> <p>The procedure shall be implemented by the operator from the date of approval in writing by the Agency</p>	Completed
IC8	<p>A written energy efficiency plan shall be submitted to the Agency for approval detailing the results of an assessment to identify the energy efficiency priorities across the site and for building services measures. The plan shall include but not be limited to a timetable to implement any proposed changes as appropriate. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the plan.</p> <p>The plan shall be implemented by the Operator from the date of approval by the Agency.</p>	Completed
IC9	<p>A written site closure plan shall be submitted to the Agency for approval. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the procedure.</p> <p>The procedure shall be implemented by the operator from the date of approval in writing by the Agency.</p>	Completed
IC10	<p>A written plan shall be submitted to the Agency for approval detailing the results of a survey to determine the integrity, adequacy and suitability of existing hard-standing, kerbing and secondary containment for above and below ground structures for raw material, chemical and oil as well as waste storage areas and the measures to comply with the requirements of the Combustion Sector TGN. This shall include but not be limited to an inspection and maintenance program for all relevant equipment identified and inspected every 3 years. 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.</p> <p>The plan shall be implemented by the operator from the date of approval by the Agency.</p>	Completed

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
IC11	<p>The Operator shall undertake a review report of the copper identified and monitored in the purge discharge to the Dee Estuary over the past 4 years. The review shall include all potential sources of copper on site. Where appropriate, the plan shall contain a timetable 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.</p> <p>The plan shall be implemented by the operator from the date of approval by the Agency</p>	Completed
IC12	<p>The Operator shall undertake a review report of the trihalomethanes identified and monitored in the purge discharge to the Dee Estuary over the past 4 years. The review shall include all potential sources on site. Where appropriate, the plan shall contain a timetable 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.</p> <p>The plan shall be implemented by the operator from the date of approval by the Agency</p>	Completed
IC13	<p>A written waste management plan shall be submitted to the Agency for approval detailing the results of an assessment to identify the best environmental options for waste recovery or disposal, waste minimisation, waste management including handling, storage and waste retention times as well as a waste management audit to comply with the requirements of the Combustion Sector TGN. The plan shall include but not be limited to a timetable to implement any proposed changes as appropriate and shall include a clause to be reviewed every 4 years. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the plan.</p> <p>The plan shall be implemented by the Operator from the date of approval by the Agency.</p>	Completed
IC14	<p>A written water efficiency plan shall be submitted to the Agency for approval detailing the results of an assessment to identify the water efficiency priorities across the site. The plan shall include but not be limited to a timetable to implement any proposed changes as appropriate. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the plan.</p> <p>The plan shall be implemented by the Operator from the date of approval by the Agency.</p>	Completed
IC15	<p>The operator shall update the site monitoring and protection plan (SPMP) to reflect the changes listed in the application for variation received 20th May 2008.</p>	Completed
IC16	<p>The site noise management plan detailing the measures to be used to control emissions of noise shall be updated to reflect the variation received on 20th May 2008 in terms of routine (quarterly) noise and continuous vibration monitoring and be submitted to Natural Resources Wales for approval. This shall include but not be limited to linking in with the maintenance systems. The plan shall also be updated to include notifying Natural Resources Wales of the results of each routine quarterly monitoring exercise. This shall comply with Horizontal Guidance note H3.</p>	Completed

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
IC17	<p>The operator shall undertake a review in the form of a report detailing the results of the four month dosing with chlorine dioxide trial as per duly made simple standard variation 11/12/08. The review shall include, but not be limited to, all of the methods and techniques employed in the trial, monitoring, results, plus an evaluation of the effectiveness of the trial and the quality of the final effluent, including residual by-products and benefits. The report shall include a timetable of any future proposed changes.</p> <p>The notification requirements of condition 2.4.2 shall be deemed to have been complied with on submission of the report.</p>	Completed
IC18	<p>Submit a written procedure to the Environment Agency for approval. The procedure must contain appropriate measures to minimise or prevent excessive plume generation from the cooling towers. The notification requirements of condition 2.5.2 will be deemed to have been complied with on submission of the procedure.</p> <p>You must implement the procedure as approved, and from the date stipulated by the Environment Agency.</p>	Completed
IC19	<p>Submit a written report to the Environment Agency for approval. The report must contain a detailed review and comparison of tower performance and plume generation before and after wet louver removal.</p> <p>If unacceptable levels of plume generation are identified post removal, appropriate remedial actions will be agreed with the Environment Agency which may include re-installation of the removed louvers.</p> <p>The notification requirements of condition 2.5.2 will be deemed to have been complied with on submission of the plan.</p>	Completed
IC20	<p>Following the completion of Stage 1 of the Chlorine Dioxide Introductory Dosing Plan, the Operator shall provide a written commissioning report to Natural Resources Wales on its implementation. The report shall include, but not be limited to:-</p> <ul style="list-style-type: none"> • monitoring results for residual chlorine dioxide and chlorite ions at the point of entry to the purge pond (from the cooling tower tanks) and exit of the purge pond (at the point of discharge to the River Dee), • an analysis of the monitoring data with consideration for the decay rates taking place within the purge pond under a range of operating conditions which are likely to occur, and • an assessment of whether additional controls are required to further minimise emissions to the River Dee. <p>The report shall identify any required improvements together with a proposed timetable for their implementation.</p>	Completed

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
IC21	<p>Following completion of Stage 2 of the Chlorine Dioxide Introductory Dosing Plan, the Operator shall provide a written commissioning report to Natural Resources Wales on its implementation. The report shall include, but not be limited to:-</p> <ul style="list-style-type: none"> • monitoring results for residual chlorine dioxide and chlorite ions at the point of entry to the purge pond (from the cooling tower tanks) and exit of the purge pond (at the point of discharge to the River Dee), • an analysis of the monitoring data with consideration for the decay rates taking place within the purge pond under a range of operating conditions which are likely to occur, • an assessment of whether additional controls are required to further minimise emissions to the River Dee, and • a revised environmental impact assessment for the discharge of residual chlorite ions upon the River Dee; <p>Following receipt of the commissioning report, Natural Resources Wales reserves the right to require the operator to conduct a physical survey within the River Dee (as notified in writing by Natural Resources Wales). Under such notification, the Operator shall submit proposals for carrying out such a survey, including but not limited to:-</p> <ul style="list-style-type: none"> • investigations of residual concentrations, • the effects from mixing, • re-assessment of the Predicted No-Effect Concentration „PNEC“ value, and • the zone within which the „PNEC“ is breached. <p>Where such a survey is required, this shall be done in accordance with a methodology and timetable agreed in writing by Natural Resources Wales.</p> <p>Data provided by this condition may be used as a means of imposing or amending permit conditions, including emission limit values for residual chlorite ions, and Residual chlorine dioxide (table S3.2).</p>	Completed

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
IC22	<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 Natural Resources Wales. 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 Natural Resources Wales' written approval.</p>	Completed

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
IC23	<p>The operator shall provide a report in writing to Natural Resources Wales on the performance of the DLN2.6+ and the Variable Load Path modifications. The report shall include the following:</p> <ul style="list-style-type: none"> • Performance of DLN2.6+ in terms of NOx and CO emissions. • Proposed emission limits which apply when the load varies between MSUL/MSDL and base load during the daily reference period, for emission points A1, A2, A3 & A4 for oxides of nitrogen. • An assessment of the impacts of emissions at low load using H1 guidance or equivalent methodology. • A review of current “minimum start-up” and “minimum shut-down” parameters, and any proposed changes (with an appropriate justification), for each LCP in line with the Implementing Decision 2012/249/EU. 	Completed
IC24	<p>Following removal of the fan attenuators on the fans Cooling Towers 3 and 4, the operator shall carry out repairs to all malfunctioning fans in those cells to ensure that emissions of tonal noise from the fans is minimised.</p>	Completed
IC25	<p>The operator shall include a procedure for the timely maintenance and monitoring of the fans referred to in IC24 in its Environmental Management System.</p>	Completed
IC26	<p>Black Start Operation</p> <p>The operator shall produce and submit a written Black Start Response Plan to Natural Resources Wales, for approval. The plan shall contain an impact assessment demonstrating that there is no significant environmental risk associated with black start operations and:</p> <ul style="list-style-type: none"> • propose a methodology for minimisation of environmental impact during such a period of operation; and • include the procedure for the notification of black start operation and its duration. <p>The methodology for operation and reporting set out in the report shall be implemented by the Operator from the date of approval by Natural Resources Wales.</p>	01/01/2021
IC27	<p>Following the trial of the AAI system on Unit 4, the Operator shall submit a written report to Natural Resources Wales for approval.</p> <p>The report shall;</p> <ul style="list-style-type: none"> • Verify that the exhaust gas characteristics observed during the operation of the AAI system are in accordance with those modelled in ‘Scenario 4’ (as detailed in Uniper Technologies’ Air Quality Assessment (reference UTG/17/PMP/672/R) and verify that the control measures in place to prevent and minimise noise emissions from AAI associated plant and equipment constitutes Best Available Technique. 	Within 6 months of trial period ending

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
IC28	<p>The operator shall carry out a review of the emissions of sulphur dioxide (SO₂), emitted from the thermal oxidiser (emission point A11) and submit a technical report for approval by Natural Resources Wales documenting the results of this review.</p> <p>The review shall be informed by the results of representative monitoring campaigns of SO₂ during normal operation, consisting of a sufficient number of samples of emissions of SO₂ for a representative period of time.</p> <p>As part of this improvement condition, the operator shall identify opportunities to reduce emissions of sulphur dioxide below the hourly average emission limit for SO₂ from A11 set in table S3.1(b) and propose a reduced emission limit value in writing for Natural Resources Wales.</p> <p>Data provided by this condition may be used as a means of imposing or amending permit conditions, including emission limit values for sulphur dioxide (table S3.1(b)).</p>	01/07/2021

Table S1.4 Pre-operational measures for future development		
Reference	Operation	Pre-operational measures
PO1	Chlorine Dioxide cooling water dosing system	The operator shall submit a report to Natural Resources Wales detailing changes made to the accident management plan (as required by condition 1.1.1 of the permit) at least 4 weeks prior to commencing this operation.
PO2		<p>Prior to commencing commissioning, the operator shall provide a report to Natural Resources Wales describing the monitoring standards and methods used (including the relevant CEN, ISO or BS references) for all parameters listed in table S3.2.</p> <p>The report shall detail the scope of continuous monitoring (and / or any backup non-continuous monitoring) and the limit of detection for equipment proposed.</p> <p>Where the monitoring equipment, techniques, personnel and organisations employed do not have either MCERTS certification or accreditation (as appropriate), the Operator shall set out its justification and seek the written approval of Natural Resources Wales for this specification.</p> <p>Monitoring methods stated within table S3.2 may be subject to change upon completion of this condition.</p>
PO3		The operator shall submit a report detailing changes made to the site closure plan (as referred to by conditions 4.3.6 and 4.3.8 of the permit) at least 2 weeks prior to commencing this operation.
PO4		The operator shall submit a report detailing changes made to the site protection and monitoring programme (as referred to by conditions 2.8.1 and 2.8.2 of the permit) at least 2 weeks prior to commencing this operation.

Table S1.4 Pre-operational measures for future development		
Reference	Operation	Pre-operational measures
PO5	Prior to specific dosing of the Cooling Tower Pack with Chlorine Dioxide.	The Operator shall review proposed plans for stage 3 of the Chlorine Dioxide Introductory Dosing Plan (supplied as additional information on 17th October 2012 referenced Appendix 1 – “Additional Commissioning Information”) and submit a report to Natural Resources Wales detailing any required changes. Operational considerations shall be based on the outcomes to improvement conditions IC20 and IC21 (table S1.3).
PO6	Ambient Air Injection (AAI) system	The operation of the Ambient Air Injection (AAI) system on Unit 4 as described in ‘Technical Statement Detailing the Intended Operation of Ambient Air Injection at Connah’s Quay’ dated September 2019, shall not commence until dates for the start and end of the trial have been agreed in writing with Natural Resources Wales.

Table S1.5 Start-up and Shut-down thresholds		
Emission Point and Unit Reference	“Minimum start-up load” discrete processes	“Minimum shut-down load” discrete processes
LCP96 (A1) LCP97 (A2) LCP98 (A3) LCP99 (A4)	Lean premix mode 6.3 activated and CCGT load ≥ 160 MWe; 44.7% and/or Combustion reference temperature ≥ 82.5	Combustion Reference Temperature < 82.5 and Lean premix mode 6.3 deactivated and/or CCGT load < 160 MWe; 44.7%

Table S1.6 Effective Dry Low NO _x thresholds	
Emission Point and Unit Reference	Effective Dry Low NO _x threshold Load in MW and as percent of rated power output (%) and discrete processes
LCP96 (A1) LCP97 (A2) LCP98 (A3) LCP99 (A4)	250 MW _e gross generated (equivalent to 70% of the guarantee ISO Base Load gross generation)

Schedule 2 – Waste types, raw materials and fuels

Table S2.1 Raw materials and fuels	
Raw materials and fuel description	Specification
Natural Gas	Supplied from Point of Ayr Terminal or National Transmission System. The maximum total sulphur content of fuel gas burned in the process shall not exceed 35ppm as H ₂ S.
Water	River water abstracted from River Dee
Water	Town mains
Gas oil	Not exceeding 0.1% w/w sulphur content

Schedule 3(a) – Emissions and monitoring from 01/07/2020 to 16/08/2021

Table S3.1(a) Point source emissions to air from Gas Turbines >100MWth operating under IED Annex V Limits						
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 located at Longitude -3.08046 and Latitude 53.23236. A2 located at Longitude -3.08075 and Latitude 53.23209. A3 located at Longitude -3.08104 and Latitude 53.23183. A4 located at Longitude -3.08132 and Latitude 53.23156. Also marked on the site plan in Schedule 7.	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	LCP96, LCP97, LCP98 and LCP99 Gas turbines fired on natural gas	50 mg/m ³ 70% to Base load ¹	Monthly mean of validated hourly averages	Continuous	BS EN 14181
	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	LCP96, LCP97, LCP98 and LCP99 Gas turbines fired on natural gas	55 mg/m ³ 70% to Base load ¹ 75 mg/m ³ MSUL/MSDL to base load ²	Daily mean of validated hourly averages	Continuous	BS EN 14181
	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	LCP96, LCP97, LCP98 and LCP99 Gas turbines fired on natural gas	100 mg/m ³ 70% to Base load ¹	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181

Table S3.1(a) Point source emissions to air from Gas Turbines >100MWth operating under IED Annex V Limits

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 located at Longitude -3.08046 and Latitude 53.23236. A2 located at Longitude -3.08075 and Latitude 53.23209. A3 located at Longitude -3.08104 and Latitude 53.23183. A4 located at Longitude -3.08132 and Latitude 53.23156. Also marked on the site plan in Schedule 7.	Carbon monoxide	LCP96, LCP97, LCP98 and LCP99 Gas turbines fired on natural gas	30 mg/m ³ 70% to Base load ¹	Monthly mean of validated hourly averages	Continuous	BS EN 14181
	Carbon monoxide	LCP96, LCP97, LCP98 and LCP99 Gas turbines fired on natural gas	30 mg/m ³ 70% to Base load ¹ 200 mg/m ³ MSUL/MSDL to base load ²	Daily mean of validated hourly averages	Continuous	BS EN 14181
	Carbon monoxide	LCP96, LCP97, LCP98 and LCP99 Gas turbines fired on natural gas	60 mg/m ³ 70% to Base load ¹	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
	Oxygen	LCP96, LCP97, LCP98 and LCP99 Gas turbine fired on natural gas	No limit set	None set	Continuous or as appropriate to measurement technique	BS EN 14181

Table S3.1(a) Point source emissions to air from Gas Turbines >100MWth operating under IED Annex V Limits

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 located at Longitude -3.08046 and Latitude 53.23236. A2 located at Longitude -3.08075 and Latitude 53.23209. A3 located at Longitude -3.08104 and Latitude 53.23183. A4 located at Longitude -3.08132 and Latitude 53.23156. Also marked on the site plan in Schedule 7.	Water Vapour	LCP96, LCP97, LCP98 and LCP99 Gas turbine fired on natural gas	No limit set	None set	Continuous or as appropriate to measurement technique	BS EN 14181
	Stack gas temperature	LCP96, LCP97, LCP98 and LCP99 Gas turbine fired on natural gas	No limit set	None set	Continuous or as appropriate to measurement technique	Traceable to national standards
	Stack gas pressure	LCP96, LCP97, LCP98 and LCP99 Gas turbine fired on natural gas	No limit set	None set	Continuous or as appropriate to measurement technique	Traceable to national standards
	Stack gas volume flow	LCP96, LCP97, LCP98 and LCP99 Gas turbine fired on natural gas	No limit set	None set	Continuous	BS EN 16911 & TGN M2
	Sulphur dioxide	LCP96, LCP97, LCP98 and LCP99 Gas turbine fired on natural gas	No limit set	None set	6 monthly by calculation	Agreed in writing with NRW

Table S3.1(a) Point source emissions to air from Gas Turbines >100MWth operating under IED Annex V Limits

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 located at Longitude -3.08046 and Latitude 53.23236. A2 located at Longitude -3.08075 and Latitude 53.23209.	Dust	LCP96, LCP97, LCP98 and LCP99 Gas turbine fired on natural gas	No limit set	None set	6 monthly by calculation	Agreed in writing with NRW
A3 located at Longitude -3.08104 and Latitude 53.23183. A4 located at Longitude -3.08132 and Latitude 53.23156. Also marked on the site plan in Schedule 7.	As required by the Method Implementation Document for BS EN 15259	LCP96, LCP97, LCP98 and LCP99 Gas turbine fired on natural gas	No limit set	None set	Pre-operation and when there is a significant operational change	BS EN 15259
Points A5, A6, A7, A8 on site plan in schedule 7	None set	Cooling Tower Exhausts	No limit set	None set	None set	None set
Points A9A, A9B, A9C, A9D on site plan in schedule 7	None set	Four Emergency Diesel Generators	No limit set	None set	None set	None set
Points A10A, A10B, A10C, A10D, A10E on site plan in schedule 7	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	Five auxiliary boilers fired on natural gas	No limit set	Hourly average	Annual	BS EN 14792

Table S3.1(a) Point source emissions to air from Gas Turbines >100MWth operating under IED Annex V Limits

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
Points A10A, A10B, A10C, A10D, A10E on site plan in schedule 7	Carbon monoxide	Five auxiliary boilers fired on natural gas	No limit set	Hourly average	Annual	BS EN 15058

Note 1: This ELV applies when the load is >70% throughout the reference period.

Note 2: This ELV applies at all loads between MSUL/MSDL and base load. MSUL and MSDL are defined in table S1.5.

Table S3.1(b) Point source emissions to air from the Gas Treatment Plant (GTP)

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
Point A11 on site plan in Schedule 7	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	Thermal oxidiser	95mg/m ³	Hourly averaging period	Continuous	To be agreed in writing with Natural Resources Wales, and as set out in M2
Point A12 on site plan in Schedule 7	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	Gas Regen. Heater	95mg/m ³	10 minute averaging period	Every 12 months	To be agreed in writing with Natural Resources Wales, and as set out in M2
Point A11 on site plan in Schedule 7	Carbon monoxide	Thermal oxidiser	10mg/m ³	Hourly averaging period	Continuous	To be agreed in writing with Natural Resources Wales, and as set out in M2

Table S3.1(b) Point source emissions to air from the Gas Treatment Plant (GTP)						
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
Point A12 on site plan in Schedule 7	Carbon monoxide	Gas Regen. Heater	100mg/m ³	10 minute averaging period	Every 12 months	To be agreed in writing with Natural Resources Wales, and as set out in M2
Point A11 on site plan in Schedule 7	Sulphur dioxide	Thermal oxidiser	600 mg/m ³	Monthly mean of validated hourly averages	Continuous	To be agreed in writing with Natural Resources Wales, and as set out in M2
Point A11 on site plan in Schedule 7	Sulphur dioxide	Thermal oxidiser	9950 mg/m ³ ¹	Hourly averaging period	Continuous	To be agreed in writing with Natural Resources Wales, and as set out in M2
Point A13 on site plan in Schedule 7	None set	Ground flare	No limit set	None set	None set	None set
Point A19 on site plan in Schedule 7	None set	Emergency fire fighting diesel exhaust (Gas treatment plant/fire fighting pump house building)	No limit set	None set	None set	None set
Point A21 on site plan in Schedule 7	None set	Emergency fire fighting diesel exhaust (Gas treatment plant/fire fighting pump)	No limit set	None set	None set	None set
Point A22 on site plan in Schedule 7	None set	Emergency diesel generator exhaust (Gas treatment plant)	No limit set	None set	None set	None set

Table S3.1(b) Point source emissions to air from the Gas Treatment Plant (GTP)						
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
Point A23 on site plan in Schedule 7	None set	Potterton Boilers Exhaust (AGI)	No limit set	None set	None set	None set

Note 1: Limit subject to change by Natural Resources Wales following completion of improvement condition IC28.

Table S3.2 Point Source emissions to water (other than sewer) – emission limits and monitoring requirements						
Emission point ref. & location	Parameter	Source	Limit (incl. unit)	Reference period	Monitoring frequency	Monitoring standard or method
W1 on site plan in schedule 7	Flow	Main cooling water to purge to the River Dee	2.5 m ³ /s	Instantaneous	Continuous	Note 3
	Maximum temperature		25			
	Maximum temperature difference April - October		13			
	Maximum temperature difference November - March		13			
	Maximum temperature difference November – March		20 Note 7			
	Salinity		60 g/l			
	pH Maximum		9			
	pH Minimum		6			
	Residual Chlorine Dioxide Note 6		1 mg/l Note 6			Note 4
	Residual chlorite ion Note 6		1 mg/l (absolute limit) Note 6			

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
	Residual chlorite ion Note 6		0.5 mg/l Note 1 Note 6	Average value Note 2 Note 6		
	Total Residual Oxidant (TRO) Note 5		0.2 mg/l	Instantaneous		Note 3
	Oil and grease		20 mg/l			
W2 on site plan in schedule 7	pH Maximum	Surface water drain	9			Note 3
	pH Minimum		6			
	Oil and grease		20 mg/l			
	Residual chlorine dioxide		1 mg/l			Note 4
W3 on site plan in schedule 7	pH Maximum	Surface water drain	9			Note 3
	pH Minimum		6			

Note 1 This limit shall be based upon a rate of 95% compliance of all average values in a 3 monthly period.

Note 2 Average value of all instantaneous readings over a maximum 3 hour discharge period.

Note 3 As described in the answer to Q10 of the Schedule 5 Notice dated 23/03/2012.

Note 4 As detailed within Additional information supplied on 17th October 2012 "B5, Monitoring Methods Confirmation". Methods and standards are subject to change upon completion of pre-operational measure for future development PO2, Table S1.4.

Note 5 Compliance with Emission Limit Value and Monitoring requirements for Total Residual Oxygen (TRO) effective only during dosing of cooling waters with Sodium Hypochlorite.

Note 6 Compliance with Emission Limit Values and Monitoring requirements for Residual Chlorine Dioxide and Residual chlorite ion effective only during dosing of cooling waters with Chlorine Dioxide.

Note 7 This limit shall be based upon a rate of 95% compliance of all average values in the period November to March.

Table S3.3 Annual limits (excluding start up and shut down except where otherwise stated).

Substance	Medium	Limit (including unit)		Emission Points
Oxides of nitrogen	Air	Assessment year	LCP TNP Limit	

Table S3.3 Annual limits (excluding start up and shut down except where otherwise stated).				
Substance	Medium	Limit (including unit)		Emission Points
		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	A1, A2, A3, A4 – LCP96, LCP97, LCP98, LCP99
		01/01/20-30/06/20	Emission allowance figure shown in the TNP Register as at 31 October 2020	

Schedule 3(b) – Emissions and monitoring from 17/08/2021

Table S3.1(a) Point source emissions to air from Gas Turbines >100MWth operating under the LCP BREF Limits						
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 located at Longitude -3.08046 and Latitude 53.23236. A2 located at Longitude -3.08075 and Latitude 53.23209. A3 located at Longitude -3.08104 and Latitude 53.23183. A4 located at Longitude -3.08132 and Latitude 53.23156. Also marked on the site plan in Schedule 7.	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	LCP96, LCP97, LCP98 and LCP99 Gas turbines fired on natural gas	40 mg/m ³ Effective Dry Low NOx to Base load ¹	Annual mean of validated hourly averages	Continuous	BS EN 14181
	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	LCP96, LCP97, LCP98 and LCP99 Gas turbines fired on natural gas	50 mg/m ³ Effective Dry Low NOx to Base load ¹	Monthly mean of validated hourly averages	Continuous	BS EN 14181
	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	LCP96, LCP97, LCP98 and LCP99 Gas turbines fired on natural gas	50 mg/m ³ Effective Dry Low NOx to Base load ¹ 75 mg/m ³ MSUL/MSDL to base load ²	Daily mean of validated hourly averages	Continuous	BS EN 14181
	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	LCP96, LCP97, LCP98 and LCP99 Gas turbines fired on natural gas	100 mg/m ³ Effective Dry Low NOx to Base load ¹	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181

Table S3.1(a) Point source emissions to air from Gas Turbines >100MWth operating under the LCP BREF Limits

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 located at Longitude -3.08046 and Latitude 53.23236. A2 located at Longitude -3.08075 and Latitude 53.23209. A3 located at Longitude -3.08104 and Latitude 53.23183. A4 located at Longitude -3.08132 and Latitude 53.23156. Also marked on the site plan in Schedule 7.	Carbon monoxide	LCP96, LCP97, LCP98 and LCP99 Gas turbines fired on natural gas	30 mg/m ³ Effective Dry Low NOx to Base load ¹	Annual mean of validated hourly averages	Continuous	BS EN 14181
	Carbon monoxide	LCP96, LCP97, LCP98 and LCP99 Gas turbines fired on natural gas	30 mg/m ³ Effective Dry Low NOx to Base load ¹	Monthly mean of validated hourly averages	Continuous	BS EN 14181
	Carbon monoxide	LCP96, LCP97, LCP98 and LCP99 Gas turbines fired on natural gas	30 mg/m ³ Effective Dry Low NOx to Base load ¹ 200 mg/m ³ MSUL/MSDL to base load ²	Daily mean of validated hourly averages	Continuous	BS EN 14181
	Carbon monoxide	LCP96, LCP97, LCP98 and LCP99 Gas turbines fired on natural gas	60 mg/m ³ Effective Dry Low NOx to Base load ¹	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181

Table S3.1(a) Point source emissions to air from Gas Turbines >100MWth operating under the LCP BREF Limits

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 located at Longitude -3.08046 and Latitude 53.23236. A2 located at Longitude -3.08075 and Latitude 53.23209. A3 located at Longitude -3.08104 and Latitude 53.23183. A4 located at Longitude -3.08132 and Latitude 53.23156. Also marked on the site plan in Schedule 7.	Oxygen	LCP96, LCP97, LCP98 and LCP99 Gas turbine fired on natural gas	No limit set	None set	Continuous or as appropriate to measurement technique	BS EN 14181
	Water Vapour	LCP96, LCP97, LCP98 and LCP99 Gas turbine fired on natural gas	No limit set	None set	Continuous or as appropriate to measurement technique	BS EN 14181
	Stack gas temperature	LCP96, LCP97, LCP98 and LCP99 Gas turbine fired on natural gas	No limit set	None set	Continuous or as appropriate to measurement technique	Traceable to national standards
	Stack gas pressure	LCP96, LCP97, LCP98 and LCP99 Gas turbine fired on natural gas	No limit set	None set	Continuous or as appropriate to measurement technique	Traceable to national standards
A1 located at Longitude -3.08046 and Latitude 53.23236.	Stack gas volume flow	LCP96, LCP97, LCP98 and LCP99 Gas turbine fired on natural gas	No limit set	None set	Continuous	BS EN 16911 & TGN M2

Table S3.1(a) Point source emissions to air from Gas Turbines >100MWth operating under the LCP BREF Limits

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 located at Longitude -3.08075 and Latitude 53.23209. A3 located at Longitude -3.08104 and Latitude 53.23183. A4 located at Longitude -3.08132 and Latitude 53.23156. Also marked on the site plan in Schedule 7.	Sulphur dioxide	LCP96, LCP97, LCP98 and LCP99 Gas turbine fired on natural gas	No limit set	None set	6 monthly by calculation	Agreed in writing with NRW
	Dust	LCP96, LCP97, LCP98 and LCP99 Gas turbine fired on natural gas	No limit set	None set	6 monthly by calculation	Agreed in writing with NRW
	As required by the Method Implementation Document for BS EN 15259	LCP96, LCP97, LCP98 and LCP99 Gas turbine fired on natural gas	No limit set	None set	Pre-operation and when there is a significant operational change	BS EN 15259
Points A5, A6, A7, A8 on site plan in schedule 7	None set	Cooling Tower Exhausts	No limit set	None set	None set	None set
Points A9A, A9B, A9C, A9D on site plan in schedule 7	None set	Four Emergency Diesel Generators	No limit set	None set	None set	None set

Table S3.1(a) Point source emissions to air from Gas Turbines >100MWth operating under the LCP BREF Limits

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
Points A10A, A10B, A10C, A10D, A10E on site plan in schedule 7	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	Five auxiliary boilers fired on natural gas	No limit set	Hourly average	Annual	BS EN 14792
Points A10A, A10B, A10C, A10D, A10E on site plan in schedule 7	Carbon monoxide	Five auxiliary boilers fired on natural gas	No limit set	Hourly average	Annual	BS EN 15058

Note 1: This ELV applies between the effective dry low NO_x threshold and baseload. Effective dry low NO_x thresholds are defined in Table S1.6.

Note 2: This ELV applies at all loads between MSUL/MSDL and base load. MSUL and MSDL are defined in table S1.5.

Table S3.1(b) Point source emissions to air from the Gas Treatment Plant (GTP)

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
Point A11 on site plan in Schedule 7	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	Thermal oxidiser	95mg/m ³	Hourly averaging period	Continuous	To be agreed in writing with Natural Resources Wales, and as set out in M2

Table S3.1(b) Point source emissions to air from the Gas Treatment Plant (GTP)						
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
Point A12 on site plan in Schedule 7	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	Gas Regen. Heater	95mg/m ³	10 minute averaging period	Every 12 months	To be agreed in writing with Natural Resources Wales, and as set out in M2
Point A11 on site plan in Schedule 7	Carbon monoxide	Thermal oxidiser	10mg/m ³	Hourly averaging period	Continuous	To be agreed in writing with Natural Resources Wales, and as set out in M2
Point A12 on site plan in Schedule 7	Carbon monoxide	Gas Regen. Heater	100mg/m ³	10 minute averaging period	Every 12 months	To be agreed in writing with Natural Resources Wales, and as set out in M2
Point A11 on site plan in Schedule 7	Sulphur dioxide	Thermal oxidiser	600 mg/m ³	Monthly mean of validated hourly averages	Continuous	To be agreed in writing with Natural Resources Wales, and as set out in M2
Point A11 on site plan in Schedule 7	Sulphur dioxide	Thermal oxidiser	9950 mg/m ³ ¹	Hourly averaging period	Continuous	To be agreed in writing with Natural Resources Wales, and as set out in M2
Point A13 on site plan in Schedule 7	None set	Ground flare	No limit set	None set	None set	None set
Point A19 on site plan in Schedule 7	None set	Emergency fire fighting diesel exhaust (Gas treatment plant/fire fighting pump house building)	No limit set	None set	None set	None set
Point A21 on site plan in Schedule 7	None set	Emergency fire fighting diesel exhaust (Gas treatment plant/fire fighting pump)	No limit set	None set	None set	None set

Table S3.1(b) Point source emissions to air from the Gas Treatment Plant (GTP)						
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
Point A22 on site plan in Schedule 7	None set	Emergency diesel generator exhaust (Gas treatment plant)	No limit set	None set	None set	None set
Point A23 on site plan in Schedule 7	None set	Potterton Boilers Exhaust (AGI)	No limit set	None set	None set	None set

Note 1: Limit subject to change by Natural Resources Wales following completion of improvement condition IC28.

Table S3.2 Point Source emissions to water (other than sewer) – emission limits and monitoring requirements						
Emission point ref. & location	Parameter	Source	Limit (incl. unit)	Reference period	Monitoring frequency	Monitoring standard or method
W1 on site plan in schedule 7	Flow	Main cooling water to purge to the River Dee	2.5 m ³ /s	Instantaneous	Continuous	Note 3
	Maximum temperature		25			
	Maximum temperature difference April - October		13			
	Maximum temperature difference November - March		13			
	Maximum temperature difference November – March		20 Note 7			
	Salinity		60 g/l			
	pH Maximum		9			
	pH Minimum		6			
	Residual Chlorine Dioxide Note 6		1 mg/l Note 6			Note 4

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
	Residual chlorite ion Note 6		1 mg/l (absolute limit) Note 6			
	Residual chlorite ion Note 6		0.5 mg/l Note 1 Note 6			
	Total Residual Oxidant (TRO) Note 5		0.2 mg/l			Note 3
	Oil and grease		20 mg/l			
W2 on site plan in schedule 7	pH Maximum	Surface water drain	9			Note 3
	pH Minimum		6			
	Oil and grease		20 mg/l			Note 4
	Residual chlorine dioxide		1 mg/l			
W3 on site plan in schedule 7	pH Maximum	Surface water drain	9			Note 3
	pH Minimum		6			

Note 1 This limit shall be based upon a rate of 95% compliance of all average values in a 3 monthly period.

Note 2 Average value of all instantaneous readings over a maximum 3 hour discharge period.

Note 3 As described in the answer to Q10 of the Schedule 5 Notice dated 23/03/2012.

Note 4 As detailed within Additional information supplied on 17th October 2012 "B5, Monitoring Methods Confirmation". Methods and standards are subject to change upon completion of pre-operational measure for future development PO2, Table S1.4.

Note 5 Compliance with Emission Limit Value and Monitoring requirements for Total Residual Oxygen (TRO) effective only during dosing of cooling waters with Sodium Hypochlorite.

Note 6 Compliance with Emission Limit Values and Monitoring requirements for Residual Chlorine Dioxide and Residual chlorite ion effective only during dosing of cooling waters with Chlorine Dioxide.

Note 7 This limit shall be based upon a rate of 95% compliance of all average values in the period November to March.

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, A2, A3, A4, A11	Every 3 months for continuous monitoring	1 January, 1 April, 1 July, 1 October
Oxides of nitrogen Parameters as required by condition 3.5.1	A12, A10 A, A10 B, A10 C, A10 D, A10 E	Every 12 months for periodic monitoring	1 January
Carbon monoxide	A1, A2, A3, A4, A11	Every 3 months for continuous monitoring	1 January, 1 April, 1 July, 1 October
Carbon Monoxide Parameters as required by condition 3.5.1	A12, A10 A, A10 B, A10 C, A10 D, A10 E	Every 12 months for periodic monitoring	1 January
Sulphur dioxide	A11	Every 6 months for periodic monitoring	1 January, 1 July
Dust	A1, A2, A3, A4, A11	Every 6 months for periodic monitoring	1 January, 1 July
Emissions to Water Parameters as required by condition 3.5.1	W1	Every 6 months for periodic monitoring	1 January, 1 July
Oil and grease	W1, W2	Every 3 months for periodic monitoring	1 January, 1 April, 1 July, 1 October
pH	W1, W2, W3	Every 3 months for periodic monitoring	1 January, 1 April, 1 July, 1 October
Flow Parameters as required by condition 3.5.1	W1	Every 3 months for periodic monitoring	1 January, 1 April, 1 July, 1 October
Temperature difference between discharge and receiving waters Parameters as required by condition 3.5.1	W1	Every 3 months for periodic monitoring	1 January, 1 April, 1 July, 1 October
Temperature maximum Parameters as required by condition 3.5.1	W1	Every 3 months for periodic monitoring	1 January, 1 April, 1 July, 1 October
Salinity Parameters as required by condition 3.5.1	W1	Every 3 months for periodic monitoring	1 January, 1 April, 1 July, 1 October
Total Residual Oxidant Parameters as required by condition 3.5.1	W1	Every 3 months for periodic monitoring	1 January, 1 April, 1 July, 1 October

Table S4.1 Reporting of monitoring data			
Parameter	Emission or monitoring point/reference	Reporting period	Period begins
Residual Chlorine Dioxide Parameters as required by condition 3.5.1	W1, W2	Every 3 months for periodic monitoring	1 January, 1 April, 1 July, 1 October
Residual Chlorite Ion Parameters as required by condition 3.5.1	W1	Every 3 months for periodic monitoring	1 January, 1 April, 1 July, 1 October

Table S4.2: Annual production/treatment	
Parameter	Units
Power generated (net)	GWh

Table S4.3 Chapter III Performance parameters for reporting to DEFRA		
Parameter	Frequency of assessment	Units
Thermal Input Capacity for each LCP	Annually	MW
Annual Fuel Usage for each LCP	Annually	TJ
Total Emissions to Air of NO _x for each LCP	Annually	t
Total Emissions to Air of SO ₂ for each LCP	Annually	t
Total Emissions to Air of dust for each LCP	Annually	t
Operating Hours for each LCP (Load Factor)	Annually	h

Table S4.4 Reporting forms			
Media/ parameter	Reporting format	Form	Date of form
Air & Energy	Appropriate form as detailed in the ESI IED Protocol (as referenced in Schedule 6) or other form as agreed by NRW.	Form IED AR1 – SO ₂ , NO _x and dust mass emission and energy	As agreed with NRW
Air	Appropriate form as detailed in the ESI IED Protocol (as referenced in Schedule 6) or other form as agreed by NRW.	Form IED RTA1 –TNP quarterly emissions summary log	31/12/2015

Table S4.4 Reporting forms			
Media/ parameter	Reporting format	Form	Date of form
LCP	Appropriate form as detailed in the ESI IED Protocol (as referenced in Schedule 6) or other form as agreed by NRW.	Form IED HR1 – operating hours	As agreed with NRW
Air	Appropriate form as detailed in the ESI IED Protocol (as referenced in Schedule 6) or other form as agreed by NRW.	Form IED CON 2 – continuous monitoring	As agreed with NRW
CEMs	Appropriate form as detailed in the ESI IED Protocol (as referenced in Schedule 6) or other form as agreed by NRW.	Form IED CEM – Invalidation Log	As agreed with NRW
Air	Appropriate form as detailed in the ESI IED Protocol (as referenced in Schedule 6) or other form as agreed by NRW.	Form IED PM1 – discontinuous monitoring and load	As agreed with NRW
Water	Form water 1 or other form as agreed in writing by Natural Resources Wales	Form W1 or other form as agreed in writing by Natural Resources Wales	24/10/2007

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	EPR/NP3037AF
Name of operator	Uniper UK Limited
Location of Facility	Connah's Quay Power Station
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 immediately	
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 immediately 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 immediately 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 immediately	
Description of where the effect on the environment was detected	
Substances(s) detected	
Concentrations of substances detected	
Date of monitoring/sampling	

Part B – to be submitted as soon as practicable

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

Name*	
Post	
Signature	
Date	

* authorised to sign on behalf of the operator

Schedule 6 – Interpretation

“accident” means an accident that may result in pollution.

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

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

“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 Natural Resources Wales under section 108(1) of The Environment Act 1995 to exercise, in accordance with the terms of any such authorisation, any power specified in section 108(4) of that Act.

“average over the sampling period” means average value of three consecutive measurements of at least 30 minutes each.

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

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

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

“black start instruction” means the instruction given by National Grid ESO control room to providers of black start services, in the event of a partial or total electrical grid system shut down.

“breakdown” has the meaning given in the ESI IED Compliance Protocol for Utility Boilers and Gas Turbines dated December 2015 (as correct March 2017) or any later version.

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

“CEN” means Comité Européen de Normalisation.

“Daily average” means the average over a period of 24 hours of valid 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 to land” includes emissions to groundwater.

“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 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.

“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.

“ESI IED Protocol” means ‘Electricity Supply Industry – IED Compliance Protocol for Utility Boilers and Gas Turbines dated December 2015 (as amended)’ or any later version unless otherwise agreed in writing by Natural Resources Wales.

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

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

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

“LCP Best BAT Conclusions” means Commission implementing decision (EU) 2017/1442 of 31 July 2017 establishing best available techniques (BAT) conclusions under Directive 2010/75/EU of the European Parliament and the Council, for large combustion plant, published 17 August 2017.

“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.

“NRW” means Natural Resources Wales.

“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.

“TNP Register” means the register maintained by the Environment Agency in accordance with regulation 4 of The Large Combustion Plant (Transitional National Plan) Regulations 2015.

“Waste Framework Directive” or “WFD” means Waste Framework Directive 2008/98/EC of the European Parliament and of the Council on waste.

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.

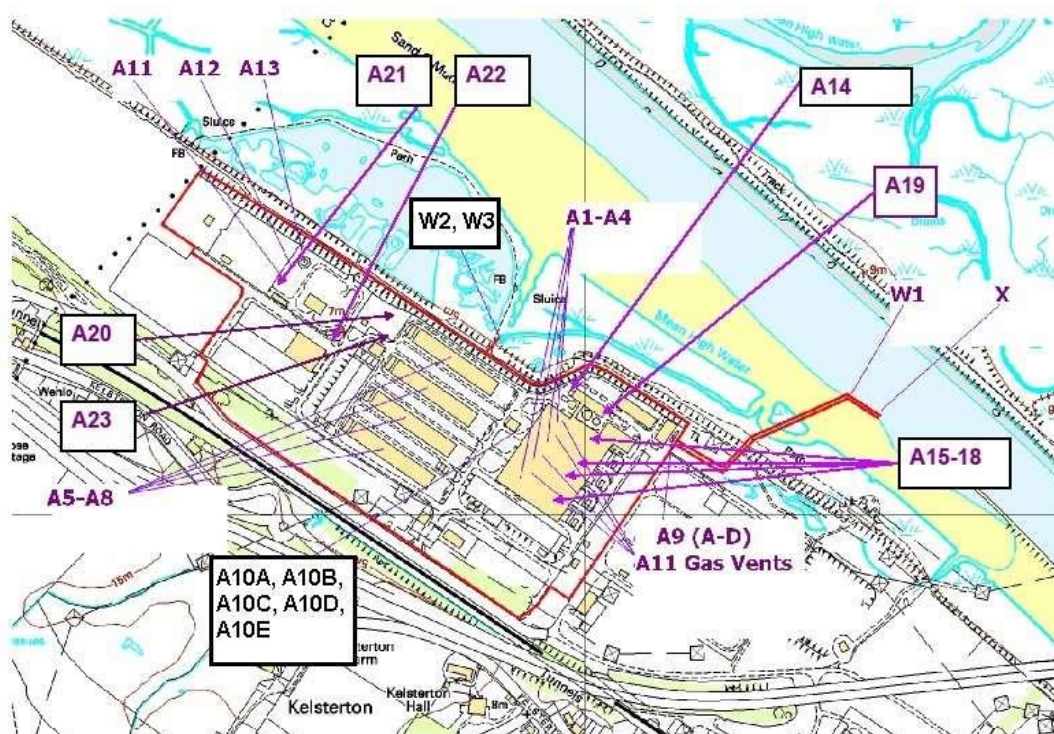
Unless otherwise stated, any references in this permit to concentrations of substances in emissions into air means:

- 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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Release Point Reference	Activity	Location of emission points Grid Ref.
A1	Unit 1 GT Exhaust	SJ 327971 371150
A2	Unit 2 GT Exhaust	SJ 327954 371125
A3	Unit 3 GT Exhaust	SJ 327938 371100
A4	Unit 4 GT Exhaust	SJ 327921 371075
A5	Unit 1 Cooling Tower Exhaust	SJ 327800 371230
A6	Unit 2 Cooling Tower Exhaust	SJ 327770 371180
A7	Unit 3 Cooling Tower Exhaust	SJ 327745 371135
A8	Unit 4 Cooling Tower Exhaust	SJ 327715 371085
A9 A	Emergency diesel 1	SJ 328142 371124
A9 B	Emergency diesel 2	SJ 328134 371118
A9 C	Emergency diesel 3	SJ 328126 371113
A9 D	Emergency diesel 4	SJ 328118 371107
A10 A	Auxiliary Boiler 1	SJ 327919 371145
A10 B	Auxiliary Boiler 2	SJ 327922 371143
A10 C	Auxiliary Boiler 3	SJ 327925 371141
A10 D	Auxiliary Boiler 4	SJ 327915 371139
A10 E	Auxiliary Boiler 5	SJ 327918 371137

A14	Hydrochloric acid storage tank fume scrubber vent (water treatment plant)	SJ 327988 371185
A15	Generator purging vents ammonia Storage tanks vent Stator water vent Seal oil vent Gland steam vent (Unit 1 turbine hall roof)	SJ 328010 371117
A16	Generator purging vents ammonia storage tanks vent Stator water vent Seal oil vent Gland steam vent (Unit 2 turbine hall roof)	SJ 327988371081
A17	Generator purging vents ammonia storage tanks vent Stator water vent Seal oil vent Gland steam vent (Unit 3 turbine hall roof)	SJ 327968371056
A18	Generator purging vents ammonia storage tanks vent Stator water vent Seal oil vent Gland steam vent (Unit 4 turbine hall roof)	SJ 327948371024
A19	Emergency fire fighting diesel exhaust (Gas treatment plant/fire fighting pump house building)	SJ 3280283 71149
A20	Water Bath Heaters (AGI)	SJ 327718 371287
A21	Emergency fire fighting diesel exhaust (Gas treatment plant/fire fighting pump)	SJ 327552 371344
A22	Emergency diesel generator exhaust (Gas treatment plant)	SJ 327626 371261
A23	Potterton Boilers Exhaust (AGI)	SJ 327705 371282
A11	Thermal oxidiser	SJ327555 371348
A12	Gas Regen Heater	SJ 327566 371358
A13	Ground flare	SJ 327589 371371

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