



Notice of variation and consolidation with introductory note

The Environmental Permitting (England & Wales) Regulations 2016

National Grid Gas PLC

Wooler Gas Compressor Station

Milfield

Wooler

Northumberland

NE71 6HD

Variation application number

EPR/BT0596IS/V004

Permit number

EPR/BT0596IS

Wooler Gas Compressor Station

Permit number EPR/BT0596IS

Introductory note

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

Under the Environmental Permitting (England & Wales) Regulations 2016 (schedule 5, part 1, paragraph 19) a variation may comprise a consolidated permit reflecting the variations and a notice specifying the variations included in that consolidated permit.

Schedule 2 of the notice comprises a consolidated permit which reflects the variations being made. All the conditions of the permit have been varied and are subject to the right of appeal.

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

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

- Revised emission limits and monitoring requirements for emissions to air applicable from 17 August 2021 in table S3.1a; and
- Inclusion of process monitoring for energy efficiency in table S3.3.

Improvement conditions 1 to 8 are complete and have been removed from the permit.

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

National Grid Gas PLC is responsible for the safe and efficient delivery of natural gas from the coastal reception terminals to the point of use. It operates twenty-four compressor stations as part of the National Transmission System (NTS). This is a network of high pressure, buried pipelines over 6,900 kilometres in length that enables natural gas from the Terminals to be transported to consumers across the country. Within this system, compressor stations are used to compress the gas being transported to maintain safe system operating pressures. Natural gas is received at the station isolation valves from the NTS pipework at a pressure between 40 and 75 barg and passes through a separation unit where any entrained liquid and solid particles are removed.

The Wooler Gas Compressor Station operates two gas turbine compression units comprising an industrial hot gas generator, power turbine and centrifugal compressor. The two compression units, LCP 245 and LCP 246 are GE LM2500+ units with a combined thermal input of 140 MWth. Both are fitted with DLE technology and either can be used as the lead unit.

There is one backup generator at the site (2.5 MW), which uses diesel fuel. This backup generator is used to supply electrical power to the site in the event of mains failure. The main process emissions from the installation are oxides of nitrogen (NO_x) and carbon monoxide (CO) to air. Uncontaminated surface water is discharged to controlled waters via an interceptor. There are no discharges to sewer from the installation.

National Grid Gas operates an Environmental Management System, which is certified to ISO14001. The nearest residential area is about 400m south of the site. The site is located just off the A697. The River Glen is located 600m south of the installation. The village of Milfield lies approximately 2 km north east of the site. There are two Natura 2000 sites close to the installation. The River Tweed SAC is located within 1100m and the Ford Moss SAC is within 5700m.

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 BT0596IS	Duly made 29/03/2006	
Additional information received	10/08/2006	
Additional information received	25/09/2006	
Additional information received	09/11/2006	
Additional information received	21/11/2006	
Permit determined EPR/BT0596IS	22/12/2006	Permit issued to National Grid Gas PLC
Variation determined EPR/BT0596IS/V002	29/03/2010	
Regulation 60 Notice sent to the Operator	31/10/2014	Issue of a Notice under Regulation 60(1) of the EPR. Environment Agency Initiated review and variation to vary the permit under IED to implement the special provisions for LCP under Chapter III, introducing new Emission Limit Values (ELVs) applicable to LCP, referred to in Article 30(2) and set out in Annex V. The permit is also updated to modern conditions.
Regulation 60 Notice response	26/03/2015	Response received from the Operator. Document dated 04/03/15.
Additional information received	Document dated 30/07/2015	Response to request for further information (RFI) dated 14/07/15.
Variation determined EPR/BT0596IS/V003 (Billing ref: KP3238AN)	23/12/2015	Varied and consolidated permit issued in modern condition format. Variation effective from 01/01/2016.
Regulation 61 Notice sent to the Operator	01/05/2018	Issue of a Notice under Regulation 61(1) of the EPR. Environment Agency initiated review and variation to vary the permit under IED to implement Chapter II following the publication of the revised Best Available Techniques (BAT) Reference Document for large combustion plant.
Regulation 61 Notice response.	30/11/2018	Response received from the Operator.
Variation determined EPR/BT0596IS/V004 (Billing ref: NP3309BR)	19/05/2020	Varied and consolidated permit issued. Effective from 19/05/2020

End of introductory note

The Environmental Permitting (England and Wales) Regulations 2016

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

Permit number

EPR/BT0596IS

Issued to

National Grid Gas PLC (“the operator”)

whose registered office is

1 - 3 Strand

London

WC2N 5EH

company registration number 02006000

to operate a regulated facility at

Wooler Gas Compressor Station

Milfield

Wooler

Northumberland

NE71 6HD

to the extent set out in the schedules.

The notice shall take effect from 19/05/2020

Name	Date
Sifelani Mpofu	19/05/2020

Authorised on behalf of the Environment Agency

Schedule 1

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

Schedule 2 – consolidated permit

Consolidated permit issued as a separate document.

Permit

The Environmental Permitting (England and Wales) Regulations 2016

Permit number

EPR/BT0596IS

This is the consolidated permit referred to in the variation and consolidation notice for application EPR/BT0596IS/V004 authorising,

National Grid Gas PLC (“the operator”),

whose registered office is

1 - 3 Strand

London

WC2N 5EH

company registration number 02006000

to operate a regulated facility at

Wooler Gas Compressor Station

Milfield

Wooler

Northumberland

NE71 6HD

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

Name	Date
Sifelani Mpofu	19/05/2020

Authorised on behalf of the Environment Agency

Conditions

1 Management

1.1 General management

1.1.1 The operator shall manage and operate the activities:

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

1.1.2 Records demonstrating compliance with condition 1.1.1 shall be maintained.

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

1.2 Energy efficiency

1.2.1 The operator shall:

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

1.3 Efficient use of raw materials

1.3.1 The operator shall:

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

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

1.4.1 The operator shall take appropriate measures to ensure that:

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

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

2 Operations

2.1 Permitted activities

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

2.2 The site

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

2.3 Operating techniques

- 2.3.1 The activities shall, subject to the conditions of this permit, be operated using the techniques and in the manner described in the documentation specified in schedule 1, table S1.2, unless otherwise agreed in writing by the Environment Agency.
- 2.3.2 For the following activities referenced in schedule 1, table S1.1: LCP 245 and LCP 246. The activities shall be operated in accordance with the “Electricity Supply Industry IED Compliance Protocol for Utility Boilers and Gas Turbines” dated December 2015 or any later version unless otherwise agreed in writing by the Environment Agency.
- 2.3.3 If notified by the Environment Agency that the activities are giving rise to pollution, the operator shall submit to the Environment Agency for approval within the period specified, a revision of any plan or other documentation (“plan”) specified in schedule 1, table S1.2 or otherwise required under this permit which identifies and minimises the risks of pollution relevant to that plan, and shall implement the approved revised plan in place of the original from the date of approval, unless otherwise agreed in writing by the Environment Agency.
- 2.3.4 The Operator shall, by the 30 April each year, undertake a comprehensive review of the Network Review (including predicted and actual operating hours on a station by station basis). The extent and conclusions of each annual review shall be agreed in writing with to the Agency prior to 1 July each year.
- 2.3.5 Any raw materials or fuels listed in schedule 2 table S2.1 shall conform to the specifications set out in that table.
- 2.3.6 For the following activities referenced in schedule 1, table S1.1: LCP 245 and LCP 246. The end of the start up period and the start of the shutdown period shall conform to the specifications set out in Schedule 1, tables S1.2 and S1.4.
- 2.3.7 For the following activities referenced in schedule 1, table S1.1: LCP 245 and LCP 246. The effective Dry Low NOx threshold shall conform to the specifications set out in Schedule 1, tables S1.2 and S1.5.
- 2.3.8 The operator shall ensure that where waste produced by the activities is sent to a relevant waste operation, that operation is provided with the following information, prior to the receipt of the waste:
- (a) the nature of the process producing the waste;
 - (b) the composition of the waste;
 - (c) the handling requirements of the waste;
 - (d) the hazardous property associated with the waste, if applicable; and

(e) the waste code of the waste.

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

2.4 Improvement programme

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

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

3 Emissions and monitoring

3.1 Emissions to water, air or land

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

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

3.1.3 Periodic monitoring shall be carried out at least once every 5 years for groundwater and 10 years for soil, unless such monitoring is based on a systematic appraisal of the risk of contamination.

3.2 Emissions of substances not controlled by emission limits

3.2.1 Emissions of substances not controlled by emission limits (excluding odour) shall not cause pollution. The operator shall not be taken to have breached this condition if appropriate measures, including, but not limited to, those specified in any approved emissions management plan, have been taken to prevent or where that is not practicable, to minimise, those emissions.

3.2.2 The operator shall:

- (a) if notified by the Environment Agency that the activities are giving rise to pollution, submit to the Environment Agency for approval within the period specified, an emissions management plan which identifies and minimises the risks of pollution from emissions of substances not controlled by emission limits;
- (b) implement the approved emissions management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

3.2.3 All liquids in containers, whose emission to water or land could cause pollution, shall be provided with secondary containment, unless the operator has used other appropriate measures to prevent or where that is not practicable, to minimise, leakage and spillage from the primary container.

3.3 Odour

3.3.1 Emissions from the activities shall be free from odour at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Environment Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved odour management plan, to prevent or where that is not practicable to minimise the odour.

3.3.2 The operator shall:

- (a) if notified by the Environment Agency that the activities are giving rise to pollution outside the site due to odour, submit to the Environment Agency for approval within the period specified, an odour management plan which identifies and minimises the risks of pollution from odour;

- (b) implement the approved odour management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

3.4 Noise and vibration

- 3.4.1 Emissions from the activities shall be free from noise and vibration at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Environment Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved noise and vibration management plan to prevent or where that is not practicable to minimise the noise and vibration.
- 3.4.2 The operator shall:
 - (a) if notified by the Environment Agency that the activities are giving rise to pollution outside the site due to noise and vibration, submit to the Environment Agency for approval within the period specified, a noise and vibration management plan which identifies and minimises the risks of pollution from noise and vibration;
 - (b) implement the approved noise and vibration management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

3.5 Monitoring

- 3.5.1 The operator shall, unless otherwise agreed in writing by the Environment Agency, undertake the monitoring specified in the following tables in schedule 3 to this permit:
 - (a) point source emissions specified in tables S3.1, S3.1a and S3.2; and
 - (b) process monitoring specified in table 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 the Environment Agency.
- 3.5.4 Permanent means of access shall be provided to enable sampling/monitoring to be carried out in relation to the emission points specified in schedule 3 tables S3.1, S3.1a and S3.2 unless otherwise agreed in writing by the Environment Agency.

3.6 Monitoring for Large Combustion Plant

- 3.6.1 All monitoring required by this permit shall be carried out in accordance with the provisions of Annex V of the Industrial Emissions Directive and the Large Combustion Plant Best Available Techniques Conclusions.
- 3.6.2 If the monitoring results for more than 10 days a year are invalidated within the meaning set out in condition 3.6.7, the operator shall:
 - (a) within 28 days of becoming aware of this fact, review the causes of the invalidations and submit to the Environment Agency for approval, proposals for measures to improve the reliability of the continuous measurement systems, including a timetable for the implementation of those measures; and
 - (b) implement the approved proposals.

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

4 Information

4.1 Records

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

(ii) matters which affect the condition of the land and groundwater.

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

4.2 Reporting

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

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

- (a) a review of the results of the monitoring and assessment carried out in accordance with the permit including an interpretive review of that data;
- (b) the resource efficiency metrics set out in schedule 4 table S4.2;
- (c) the performance parameters set out in schedule 4 table S4.3 using the forms specified in table S4.4 of that schedule.

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

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

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

4.3 Notifications

4.3.1 In the event:

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

- 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 the Environment Agency has requested in writing that it shall be notified when the operator is to undertake monitoring and/or spot sampling, the operator shall inform the Environment Agency when the relevant monitoring and/or spot sampling is to take place. The operator shall provide this information to the Environment Agency at least 14 days before the date the monitoring is to be undertaken.
- 4.3.4 The Environment Agency shall be notified within 14 days of the occurrence of the following matters, except where such disclosure is prohibited by Stock Exchange rules:
- Where the operator is a registered company:
- (a) any change in the operator's trading name, registered name or registered office address; and
 - (b) any steps taken with a view to the operator going into administration, entering into a company voluntary arrangement or being wound up.
- Where the operator is a corporate body other than a registered company:
- (c) any change in the operator's name or address; and
 - (d) any steps taken with a view to the dissolution of the operator.
- In any other case:
- (e) the death of any of the named operators (where the operator consists of more than one named individual);
 - (f) any change in the operator's name(s) or address(es); and
 - (g) any steps taken with a view to the operator, or any one of them, going into bankruptcy, entering into a composition or arrangement with creditors, or, in the case of them being in a partnership, dissolving the partnership.
- 4.3.5 Where the operator proposes to make a change in the nature or functioning, or an extension of the activities, which may have consequences for the environment and the change is not otherwise the subject of an application for approval under the Regulations or this permit:
- (a) the Environment Agency shall be notified at least 14 days before making the change; and
 - (b) the notification shall contain a description of the proposed change in operation.
- 4.3.6 The Environment Agency shall be given at least 14 days notice before implementation of any part of the site closure plan.
- 4.3.7 Where the operator has entered into a climate change agreement with the Government, the Environment Agency shall be notified within one month of:
- (a) a decision by the Secretary of State not to re-certify the agreement;
 - (b) a decision by either the operator or the Secretary of State to terminate the agreement; and
 - (c) any subsequent decision by the Secretary of State to re-certify such an agreement.
- 4.3.8 The operator shall inform the Environment Agency in writing of the closure of any LCP within 28 days of the date of closure.

4.4 Interpretation

- 4.4.1 In this permit the expressions listed in schedule 6 shall have the meaning given in that schedule.
- 4.4.2 In this permit references to reports and notifications mean written reports and notifications, except where reference is made to notification being made "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.	LCP 245: 52.3 MWth OCGT for the purpose of compressing natural gas. LCP 246: 58.2 MWth OCGT for the purpose of compressing natural gas. Standby gas oil generators (aggregate 2.5 MWth) Two fuel gas pre-heating boilers (aggregate 0.8 MW)	From receipt of raw materials to despatch of products and waste.
Directly Associated Activity			
AR2	Directly associated activity	Oil storage	From receipt of raw materials to dispatch for use.
AR3	Directly associated activity	Surface water drainage	Handling and storage of site drainage until discharge to the site surface water system.

Table S1.2 Operating techniques		
Description	Parts	Date Received
Application UP3333LL	The response to section 2.1, 2.2, B2.10 and Appendix 7 in the application.	29/03/2006
Additional information	All parts of the response to IC1 describing the method to be used for the determination of particulate matter and sulphur dioxide emissions from A1 and A2.	29/08/2012
Additional information	All parts of the response to IC3 including the procedure for the monitoring and management of noise emissions.	21/12/2007
Additional information	All parts of the response to IC4 describing the Site Closure Plan.	23/01/2008
Additional information	All parts of the response to IC5 relating to the ongoing actions to be taken to minimise fugitive emissions.	20/01/2009
Additional information	All parts of the response to IC6 relating to the ongoing waste minimisation project.	20/01/2009
Additional information	All parts of the response to IC7 relating to National Grid Gas network wide Energy Efficiency Plan.	20/01/2009

Table S1.2 Operating techniques		
Description	Parts	Date Received
Response to regulation 60(1) Notice – request for information dated 31/10/14	Compliance route and operating techniques identified in response to questions 2 (compliance route), 4 (type of combustion unit), 7 (ELVs) and 9 (monitoring).	26/03/2015
Receipt of additional information to the regulation 60(1) Notice. requested by letter dated 14/07/15	Compliance route and operating techniques identified in response to questions 5 (thermal input) and 6 (Minimum start up load and minimum shut down load)	30/07/2015
Response to regulation 61(1) Notice – request for information dated 01/05/18 EPR/BT0596IS/V004	Compliance and operating techniques identified in response to the BAT Conclusions for large combustion plant published on 17th August 2017.	30/11/2018

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
Improvement conditions 1–8 have been removed from the permit through variation EPR/BT0596IS/V004 as they are complete.		

Table S1.4 Start-up and Shut-down thresholds		
Emission Point and Unit Reference	“Minimum Start-Up Load” When two of the criteria listed below for the LCP or unit have been met.	“Minimum Shut-Down Load” When two of the criteria listed below for the LCP or unit have been met.
A1 (Unit A, LCP 245)	<ol style="list-style-type: none"> 1. Power turbine (PT) speed is greater than 3050 rpm. 2. Exhaust cone temperature (ECT) is greater than 450°C. 3. Gas Generator (GG) speed is greater than 8400 rpm. 	<ol style="list-style-type: none"> 1. Power turbine (PT) speed is less than 3050 rpm. 2. Exhaust cone temperature (ECT) is less than 450°C. 3. Gas Generator (GG) speed is less than 8400 rpm.
A2 (Unit B, LCP 246)	<ol style="list-style-type: none"> 1. Power turbine (PT) speed is greater than 3050 rpm. 2. Exhaust cone temperature (ECT) is greater than 400°C. 3. Gas Generator (GG) speed is greater than 8400 rpm. 	<ol style="list-style-type: none"> 1. Power turbine (PT) speed is less than 3050 rpm. 2. Exhaust cone temperature (ECT) is less than 400°C. 3. Gas Generator (GG) speed is less than 8400 rpm.

Table S1.5 Dry Low NOx effective definition	
Emission Point and Unit Reference	Dry Low NOx effective definition
A1 (Unit A, LCP 245)	55% MCR
A2 (Unit B, LCP 246)	55% MCR

Schedule 2 – Raw materials and fuels

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

Schedule 3 – Emissions and monitoring

Emission point ref. & location	Source	Parameter	Limit (including unit) ^{note 1}	Reference period	Monitoring frequency	Monitoring standard or method
A1 (Unit A) A2 (Unit B) (Application BT0596IS Part III Figure 1.3c, detailed in Table B2.2.1.2)	LCP No. 245 LCP No. 246 Gas turbine fired on natural gas	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	75 mg/m ³	Monthly mean of validated hourly averages	Continuous	Predictive Emissions Monitoring (PEM) as described in the application otherwise agreed in writing by the Environment Agency
			82mg/m ³	Daily mean of validated hourly averages		
			150 mg/m ³	95% of validated hourly averages within a calendar year		
A1 (Unit A) A2 (Unit B) (Application BT0596IS Part III Figure 1.3c, detailed in Table B2.2.1.2)	LCP No. 245 LCP No. 246 Gas turbine fired on natural gas	Carbon Monoxide	100 mg/m ³	Monthly mean of validated hourly averages	Continuous	Predictive Emissions Monitoring (PEM) as described in the application otherwise agreed in writing by the Environment Agency
			100 mg/m ³	Daily mean of validated hourly averages		
			100 mg/m ³	95% of validated hourly averages within a calendar year		
A1 (Unit A) A2 (Unit B) (Application BT0596IS Part III Figure 1.3c, detailed in Table B2.2.1.2)	LCP No. 245 LCP No. 246 Gas turbine fired on natural gas	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	-	Minimum of five distinct measurements taken at stable operating conditions.	When operational hours in any year are less than or equal to 2,200 hours; discontinuous, every 2 years. When operational hours in any year are greater than 2,200 hours; discontinuous, every year or every 4,380 operational hours, whichever is sooner.	BS EN 14792
		Carbon Monoxide				BS EN 15058
		Oxygen				BS EN 14789

Table S3.1 Point source emissions to air - emission limits and monitoring requirements shall apply until 16 August 2021						
Emission point ref. & location	Source	Parameter	Limit (including unit) ^{note 1}	Reference period	Monitoring frequency	Monitoring standard or method
		Water vapour ^{Note 2}			Following any changes to process equipment, configurations or operating practices that may affect the accuracy of the data generated by the Predictive Monitoring System; discontinuous.	BS EN 14790
A1 (Unit A) A2 (Unit B) (Application BT0596IS Part III Figure 1.3c, detailed in Table B2.2.1.2)	LCP No. 245 LCP No. 246 Gas turbine fired on natural gas	Sulphur dioxide	-	-	At least every 6 months	Concentration by calculation, as agreed in writing with the Environment Agency
A1 (Unit A) A2 (Unit B) (Application BT0596IS Part III Figure 1.3c, detailed in Table B2.2.1.2)	LCP No. 245 LCP No. 246 Gas turbine fired on natural gas	As required by the Method Implementation Document for BS EN 15259	-	-	Pre-operation and when there is a significant operational change	BS EN 15259
A3 and A4 (Application BT0596IS Part III Figure 1.3c, detailed in Table B2.2.1.2)	No parameters set	Vent from Cab units A and B	No limit set	-	-	Permanent sampling access not required.
A5 and A6 (Application BT0596IS Part III Figure 1.3c, detailed in Table B2.2.1.2)	No parameters set	Gas fired boiler exhaust stack 1 and 2	No limit set	-	-	Permanent sampling access not required.

Table S3.1 Point source emissions to air - emission limits and monitoring requirements shall apply until 16 August 2021						
Emission point ref. & location	Source	Parameter	Limit (including unit) ^{note 1}	Reference period	Monitoring frequency	Monitoring standard or method
A7 (Application BT0596IS Part III Figure 1.3c, detailed in Table B2.2.1.2)	No parameters set	Standby diesel generator exhaust	No limit set	-	-	Permanent sampling access not required.
A8, A9, A14 and A15 (Application BT0596IS Part III Figure 1.3c, detailed in Table B2.2.1.2)	No parameters set	Lube oil tanks breather vents for Cab units A and B	No limit set	-	-	Permanent sampling access not required.
A10 to A13, A16 to A19 (Application BT0596IS Part III Figure 1.3c, detailed in Table B2.2.1.2)	No parameters set	Vents from Cab units A and B	No limit set	-	-	Permanent sampling access not required.
Note 1: Excluding start up, shut down and unit operation at loads <55% of MCR Note 2: Not required if standards for monitoring do not require this						

Table S3.1a Point source emissions to air - emission limits and monitoring requirements shall apply from 17 August 2021						
Emission point ref. & location	Source	Parameter	Limit (including unit) ^{note 1}	Reference period	Monitoring frequency	Monitoring standard or method
A1 (Unit A) A2 (Unit B) (Application BT0596IS Part III Figure 1.3c, detailed in Table B2.2.1.2)	LCP No. 245 LCP No. 246 Gas turbine fired on natural gas	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	60 mg/m ³	Yearly average	Continuous	Predictive Emissions Monitoring (PEM) as described in the application otherwise agreed in writing by the Environment Agency
			65 mg/m ³	Monthly mean of validated hourly averages		
			65mg/m ³	Daily mean of validated hourly averages		
			150 mg/m ³	95% of validated hourly averages within a calendar year		
A1 (Unit A) A2 (Unit B) (Application BT0596IS Part III Figure 1.3c, detailed in Table B2.2.1.2)	LCP No. 245 LCP No. 246 Gas turbine fired on natural gas	Carbon Monoxide	40 mg/m ³	Yearly average	Continuous	Predictive Emissions Monitoring (PEM) as described in the application otherwise agreed in writing by the Environment Agency
			100 mg/m ³	Monthly mean of validated hourly averages		
			100 mg/m ³	Daily mean of validated hourly averages		
			100 mg/m ³	95% of validated hourly averages within a calendar year		
A1 (Unit A) A2 (Unit B) (Application BT0596IS Part III)	LCP No. 245 LCP No. 246 Gas turbine fired on natural gas	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	-	Minimum of five distinct measurements taken at stable	When operational hours in any year are less than or equal to 2,200 hours;	BS EN 14792
		Carbon Monoxide				BS EN 15058

Table S3.1a Point source emissions to air - emission limits and monitoring requirements shall apply from 17 August 2021						
Emission point ref. & location	Source	Parameter	Limit (including unit) ^{note 1}	Reference period	Monitoring frequency	Monitoring standard or method
Figure 1.3c, detailed in Table B2.2.1.2)		Oxygen		operating conditions.	discontinuous, every 2 years.	BS EN 14789
		Water vapour ^{Note 2}			When operational hours in any year are greater than 2,200 hours; discontinuous, every year or every 4,380 operational hours, whichever is sooner. Following any changes to process equipment, configurations or operating practices that may affect the accuracy of the data generated by the Predictive Monitoring System; discontinuous.	BS EN 14790
A1 (Unit A) A2 (Unit B) (Application BT0596IS Part III Figure 1.3c, detailed in Table B2.2.1.2)	LCP No. 245 LCP No. 246 Gas turbine fired on natural gas	Flow	-	-	Continuous As appropriate to reference	EN ISO 16911

Table S3.1a Point source emissions to air - emission limits and monitoring requirements shall apply from 17 August 2021						
Emission point ref. & location	Source	Parameter	Limit (including unit) ^{note 1}	Reference period	Monitoring frequency	Monitoring standard or method
A1 (Unit A) A2 (Unit B) (Application BT0596IS Part III Figure 1.3c, detailed in Table B2.2.1.2)	LCP No. 245 LCP No. 246 Gas turbine fired on natural gas	Sulphur dioxide	-	-	At least every 6 months	Concentration by calculation, as agreed in writing with the Environment Agency
A1 (Unit A) A2 (Unit B) (Application BT0596IS Part III Figure 1.3c, detailed in Table B2.2.1.2)	LCP No. 245 LCP No. 246 Gas turbine fired on natural gas	As required by the Method Implementation Document for BS EN 15259	-	-	Pre-operation and when there is a significant operational change	BS EN 15259
A3 and A4 (Application BT0596IS Part III Figure 1.3c, detailed in Table B2.2.1.2)	No parameters set	Vent from Cab units A and B	No limit set	-	-	Permanent sampling access not required.
A5 and A6 (Application BT0596IS Part III Figure 1.3c, detailed in Table B2.2.1.2)	No parameters set	Gas fired boiler exhaust stack 1 and 2	No limit set	-	-	Permanent sampling access not required.
A7 (Application BT0596IS Part III Figure 1.3c, detailed in Table B2.2.1.2)	No parameters set	Standby diesel generator exhaust	No limit set	-	-	Permanent sampling access not required.
A8, A9, A14 and A15 (Application BT0596IS Part III Figure 1.3c, detailed in Table B2.2.1.2)	No parameters set	Lube oil tanks breather vents for Cab units A and B	No limit set	-	-	Permanent sampling access not required.

Table S3.1a Point source emissions to air - emission limits and monitoring requirements shall apply from 17 August 2021						
Emission point ref. & location	Source	Parameter	Limit (including unit)^{note 1}	Reference period	Monitoring frequency	Monitoring standard or method
A10 to A13, A16 to A19 (Application BT0596IS Part III Figure 1.3c, detailed in Table B2.2.1.2)	No parameters set	Vents from Cab units A and B	No limit set	-	-	Permanent sampling access not required.
<p>Note 1: Excluding start up, shut down and unit operation at loads <55% of MCR, as defined in Table S1.5</p> <p>Note 2: Not required if standards for monitoring do not require this</p>						

Table S3.2 Point Source emissions to water (other than sewer) – emission limits and monitoring requirements						
Emission point ref. & location	Source	Parameter	Limit (incl. unit)	Reference period	Monitoring frequency	Monitoring standard or method
W1 (application BT0596IS, part 3 figure 1.3c, detailed in table B2.2.2.1)	Surface water via interceptor	Oil or grease	No visible emission	Any sample	Daily when site is manned or at frequency of no less than fortnightly.	-

Table S3.3 Process monitoring requirements				
Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
Turbine Unit A (LCP 245) and Unit B (LCP 246)	Operating hours at less than 55% MCR	Continuous	Not applicable	Shall be reported annually
	Operating hours			
	Net mechanical energy efficiency	After each modification that could significantly affect these parameters	EN Standards or equivalent	-

Schedule 4 – Reporting

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

Parameter	Emission or monitoring point/reference	Reporting period	Period begins
Oxides of nitrogen	A1, A2	Every 3 months	1 January, 1 April, 1 July, 1 October
		Every year	1 January
		PEMS check as required by tables S3.1 and S3.1a.	1 January
Carbon Monoxide	A1, A2	Every 3 months	1 January, 1 April, 1 July, 1 October
		Every year	1 January
		PEMS check as required by tables S3.1 and S3.1a.	1 January
Sulphur dioxide	A1, A2	Every 6 months	1 January, 1 July
Emissions to water Parameters as required by condition 3.5.1	W1	Every 6 months	1 January, 1 July

Parameter	Units
Electricity Exported	GWhr
Heat Exported	GWhr
Mechanical Power Provided	GWhr
Fossil Fuel Energy Consumption	GWhr
Non-Fossil Fuel Energy Consumption	GWhr
Annual Operating Hours	hr
Water Abstracted from Fresh Water Source	m ³
Water Abstracted from Borehole Source	m ³
Water Abstracted from Estuarine Water Source	m ³
Water Abstracted from Sea Water Source	m ³
Water Abstracted from Mains Water Source	m ³
Gross Total Water Used	m ³
Net Water Used	m ³
Hazardous Waste Transferred for Disposal at another installation	t

Table S4.2 Resource Efficiency Metrics	
Parameter	Units
Hazardous Waste Transferred for Recovery at another installation	t
Non-Hazardous Waste Transferred for Disposal at another installation	t
Non-Hazardous Waste Transferred for Recovery at another installation	t
Waste recovered to Quality Protocol Specification and transferred off-site	t
Waste transferred directly off-site for use under an exemption / position statement	t

Table S4.3 Large Combustion Plant Performance parameters for reporting to DEFRA and other Performance parameters		
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	Every 3 months	hrs
Annual running hours at <55% MCR per unit	Every 3 months	hrs

Table S4.4 Reporting forms		
Media/ parameter	Reporting format	Agency recipient
Air & Energy	Form IED AR1 – SO ₂ , NO _x and dust mass emission and energy. Form as agreed in writing by the Environment Agency.	National and Area Office
LCP	Form IED HR1 – operating hours. Form as agreed in writing by the Environment Agency.	National and Area Office
Air	Form IED CON 2 – continuous monitoring. Form as agreed in writing by the Environment Agency	Area Office
CEMs	Form IED CEM – invalidation Log. Form as agreed in writing by the Environment Agency.	Area Office
Air	Form IED PM1 - discontinuous monitoring and load. Form as agreed in writing by the Environment Agency.	Area Office
Other performance indicators	Form performance 1 or other form as agreed in writing by the Environment Agency. Form as agreed in writing by the Environment Agency.	Area Office
Resource Efficiency	Form REM1 – resource efficiency annual report Form as agreed in writing by the Environment Agency.	National and Area Office
Water	Form water 1 or other form as agreed in writing by the Environment Agency	Area Office

Schedule 5 – Notification

These pages outline the information that the operator must provide.

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

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

Part A

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

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

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

(b) Notification requirements for the breach of a limit	
To be notified within 24 hours of detection unless otherwise specified below	
Measures taken, or intended to be taken, to stop the emission	
Time periods for notification following detection of a breach of a limit	
Parameter	Notification period

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

Part B – to be submitted as soon as practicable

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

Name*	
Post	
Signature	
Date	

* authorised to sign on behalf of the operator

Schedule 6 – Interpretation

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

“application” means the application for this permit, together with any additional information supplied by the operator as part of the application and any response to a notice served under Schedule 5 to the EP Regulations.

“authorised officer” means any person authorised by the Environment Agency under section 108(1) of The Environment Act 1995 to exercise, in accordance with the terms of any such authorisation, any power specified in section 108(4) of that Act.

“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.

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

“CEN” means Comité Européen de Normalisation.

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

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

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

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

“DLN” means dry, low NO_x burners.

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

“emissions to land” includes emissions to groundwater.

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

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

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

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

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

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

“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.

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

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

- in relation to emissions from combustion processes, the concentration in dry air at a temperature of 273K, at a pressure of 101.3 kPa and with an oxygen content of 3% dry for liquid and gaseous fuels, 6% dry for solid fuels; and/or
- in relation to emissions from gas turbine or compression ignition engine combustion processes, the concentration in dry air at a temperature of 273K, at a pressure of 101.3kPa and with an oxygen content of 15% dry for liquid and gaseous fuels; and/or
- in relation to emissions from combustion processes comprising a gas turbine with a waste heat boiler, the concentration in dry air at a temperature of 273K, at a pressure of 101.3kPa and with an oxygen content of 15% dry, unless the waste heat boiler is operating alone, in which case, with an oxygen content of 3% dry for liquid and gaseous fuels; and/or
- in relation to emissions from non-combustion sources, the concentration at a temperature of 273K and at a pressure of 101.3 kPa, with no correction for water vapour content.

“year” means calendar year ending 31 December.

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

Schedule 7 – Site plan

Subject to National Security

END OF PERMIT