



Notice of variation and consolidation with introductory note

The Environmental Permitting (England & Wales) Regulations 2010

National Grid Gas PLC

Aylesbury Compressor Station
Woodham
Aylesbury
Buckinghamshire
HP18 0PR

Variation application number

EPR/AP3139LE/V003

Permit number

EPR/AP3139LE

Aylesbury Compressor Station

Permit number EPR/AP3139LE

Introductory note

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

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

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

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

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

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

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

- LCP 214 (Unit A) is changed to LCP 231; and
- LCP 215 (Unit B) is changed to LCP 232.

The Operator has chosen to operate these LCP's under the ELV (LCP 232) and 500 hr (LCP 231) compliance routes. This is a change from the previous operating regime which was to operate both LCP under emission limits determined by an assessment of the best available techniques (BAT).

When they were installed in 1999, the LCP's had a nominal thermal input of 54MWth each. Tests carried out on 10/12/09 for LCP 231 and on 26/01/10 for LCP 232 to ISO standards indicated that the net thermal input of the LCP's was as follows:

- LCP 231 - one 50.5 MWth OCGT,
- LCP 232 - one 52.6 MWth OCGT.

In order to comply with the carbon monoxide emission limit imposed by the IED, the operator is fitting LCP 232 with a catalytic converter as post-combustion abatement. This will be within a new exhaust stack and include a new continuous emission monitoring system. Improvement Condition IC7 has been imposed to report on the commissioning of this new plant and identify any permit changes that are required.

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 Aylesbury Compressor Station operates two identical gas turbine compression units comprising an industrial hot gas generator which is indirectly coupled to a power turbine and centrifugal compressor. There is one generator at the site (1.9MW), which uses diesel fuel to provide backup electrical power in the event of a supply failure. The main process emissions from the installation are of oxides of nitrogen (NO_x) and carbon monoxide (CO) to air, with the gas turbines being fitted with DLE systems to reduce NO_x and their exhaust passing through a catalytic oxidation system to reduce CO. The stacks are 19m (LCP231) and 21.5m (LCP232) high. Uncontaminated surface water is discharged to controlled water via an oil separator. There are no discharges to sewer from the installation.

National Grid Gas operates an Environmental Management System, which is certified to ISO14001. There is no Climate Change Levy Agreement for the installation. The Operator is part of the EU Emissions Trading Scheme.

The schedules specify the changes made to the permit.

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

Status log of the permit		
Description	Date	Comments
Application AP3139LE	Duly made 29/03/06	
Additional information received	10/08/06	
Additional information received	25/09/06	
Additional information received	09/11/06	
Additional information received	21/11/06	
Permit determined EPR/AP3139LE	22/12/06	Permit issued to National Grid Gas PLC
Variation determined EPR/AP3139LE/V002 (PAS ref EP3430TE)	29/03/10	Variation issued
Regulation 60 Notice sent to the Operator	31/10/14	Issue of a Notice under Regulation 60(1) of the EPR. Environment Agency Initiated review and variation to vary the permit under IED to implement the special provisions for LCP under Chapter III, introducing new Emission Limit Values (ELVs) applicable to LCP, referred to in Article 30(2) and set out in Annex V. The permit is also to be updated to modern conditions
Regulation 60 Notice response	26/03/15	Response received from the Operator.
Additional information received	31/07/15	Response to request for further information (RFI) dated 13/07/15.
Additional information received	20/08/15	Confirmation of compliance route.
Additional information received	28/09/15	
Additional information received	30/09/15	
Additional information received	18/11/15	Response to request for further information (RFI) dated 16/10/15
Variation determined EPR/AP3139LE/V003 (PAS Billing ref: MP3438AD)	22/12/15	Varied and consolidated permit issued in modern condition format. Variation effective from 01/01/2016.

End of introductory note

Notice of variation and consolidation

The Environmental Permitting (England and Wales) Regulations 2010

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

Permit number

EPR/AP3139LE

Issued to

National Grid Gas PLC (“the operator”)

whose registered office is

National Grid Gas PLC
1-3 The Strand
London
WC2N 5EH

company registration number **2006000**

to operate a regulated facility at

Aylesbury Compressor Station
Woodham
Aylesbury
Buckinghamshire
HP18 0PR

to the extent set out in the schedules.

The notice shall take effect from 01/01/2016

Name	Date
J Linton	22/12/2015

Authorised on behalf of the Environment Agency

Schedule 1

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

Schedule 2 – consolidated permit

Consolidated permit issued as a separate document.

Permit

The Environmental Permitting (England and Wales) Regulations 2010

Permit number

EPR/AP3139LE

This is the consolidated permit referred to in the variation and consolidation notice for application EPR/AP3139LE/V003 authorising,

National Grid Gas PLC (“the operator”),

whose registered office is

National Grid Gas PLC

1-3 The Strand

London

WC2N 5EH

company registration number **2006000**

to operate an installation at

Aylesbury Compressor Station

Woodham

Aylesbury

Buckinghamshire

HP18 0PR

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

Name	Date
J Linton	22/12/2015

Authorised on behalf of the Environment Agency

Conditions

1 Management

1.1 General management

1.1.1 The operator shall manage and operate the activities:

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

1.1.2 Records demonstrating compliance with condition 1.1.1 shall be maintained.

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

1.2 Energy efficiency

1.2.1 The operator shall:

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

1.3 Efficient use of raw materials

1.3.1 The operator shall:

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

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

1.4.1 The operator shall take appropriate measures to ensure that:

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

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

2 Operations

2.1 Permitted activities

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

2.2 The site

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

2.3 Operating techniques

- 2.3.1 The activities shall, subject to the conditions of this permit, be operated using the techniques and in the manner described in the documentation specified in schedule 1, table S1.2, unless otherwise agreed in writing by the Environment Agency.
- 2.3.2 For the following activities referenced in schedule 1, table S1.1: LCP 231 and LCP 232. Without prejudice to condition 2.3.1, the activities shall be operated in accordance with the “Electricity Supply Industry IED Compliance Protocol for Utility Boilers and Gas Turbines” revision 1 dated February 2015 or any later version unless otherwise agreed in writing by the Environment Agency.
- 2.3.3 If notified by the Environment Agency that the activities are giving rise to pollution, the operator shall submit to the Environment Agency for approval within the period specified, a revision of any plan or other documentation (“plan”) specified in schedule 1, table S1.2 or otherwise required under this permit which identifies and minimises the risks of pollution relevant to that plan, and shall implement the approved revised plan in place of the original from the date of approval, unless otherwise agreed in writing by the Environment Agency.
- 2.3.4 Any raw materials or fuels listed in schedule 2 table S2.1 shall conform to the specifications set out in that table.
- 2.3.5 For the following activity referenced in schedule 1, table S1.1: LCP231. The activity shall not operate for more than 500 hours per year.
- 2.3.6 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 activity referenced in schedule 1, table S1.1: LCP232. The following conditions apply where there is a malfunction or breakdown of any abatement equipment:
Unless otherwise agreed in writing by the Environment Agency:
- (i) if a return to normal operations is not achieved within 24 hours, the operator shall reduce or close down operations, or shall operate the activities using low polluting fuels;
 - (ii) the cumulative duration of breakdown in any 12-month period shall not exceed 120 hours; and
 - (iii) the cumulative duration of malfunction in any 12-month period shall not exceed 120 hours.
- 2.3.8 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.

2.3.10 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.

2.4 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 and S3.2.

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

3.1.3 The emission values from emission point A2 listed in schedule 3 table S3.1 measured during periods of abatement equipment malfunction and breakdown shall be disregarded for the purposes of compliance with table S3.1 emission limit values.

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

3.2 Emissions of substances not controlled by emission limits

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

3.2.2 The operator shall:

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

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

3.3 Odour

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

3.3.2 The operator shall:

- (a) if notified by the Environment Agency that the activities are giving rise to pollution outside the site due to odour, submit to the Environment Agency for approval within the period specified, an odour management plan which identifies and minimises the risks of pollution from odour;
- (b) implement the approved odour management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

3.4 Noise and vibration

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

3.4.2 The operator shall:

- (a) if notified by the Environment Agency that the activities are giving rise to pollution outside the site due to noise and vibration, submit to the Environment Agency for approval within the period specified, a noise and vibration management plan which identifies and minimises the risks of pollution from noise and vibration;
- (b) implement the approved noise and vibration management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

3.5 Monitoring

3.5.1 The operator shall, unless otherwise agreed in writing by the Environment Agency, undertake the monitoring specified in the following tables in schedule 3 to this permit:

- (a) point source emissions specified in tables S3.1 and S3.2; and
- (b) process monitoring specified in table S3.3.

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

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

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

4 Information

4.1 Records

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

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

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

4.2 Reporting

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

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

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

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

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

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

- 4.2.5 Within 10 days of the notification of abatement equipment malfunction or breakdown (condition 2.3.7) the operator shall submit an Air Quality Risk Assessment as outlined in the IED Compliance Protocol (condition 2.3.2).

4.3 Notifications

4.3.1 In the event:

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

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

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

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

Where the operator is a registered company:

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

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

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

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

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

- (b) the notification shall contain a description of the proposed change in operation.
- 4.3.6 The Environment Agency shall be given at least 14 days notice before implementation of any part of the site closure plan.
- 4.3.7 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
A1	Section 1.1 A(1) (a): Burning any fuel in an appliance with a rated thermal input of 50 megawatts or more.	LCP231: 50.5 MWth open cycle gas turbine (OCGT) for the purpose of compressing natural gas LCP232: 52.6 MWth open cycle gas turbine (OCGT) for the purpose of compressing natural gas 1.9MW diesel generator for provision of back-up power supply	From receipt of raw materials to despatch of products and waste
Directly Associated Activity			
A2	Directly associated activity	Oil storage	From receipt of raw materials to dispatch for use.
A3	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
Application AP3139LE	The response to section 2.1 and 2.2 in the application.	Duly made 29/03/06
Application AP3139LE	The response to section B2.10 and Appendix 7 in the application.	Duly made 29/03/06
Response to regulation 60(1) Notice – request for information dated 31/10/14	Compliance routes and operating techniques identified in response to questions 2 (compliance routes), 4 (details of each LCP), 7 (proposed emission limits for each compliance route) and 9 (monitoring requirements for each compliance route). Excluding compliance routes i (ELV) and viii (LLD) for LCP231 and the related operating techniques. Excluding compliance routes iv (500 hour) and viii (LLD) for LCP232 and the related operating techniques.	Received 26/03/15
Receipt of additional information to the regulation 60(1) Notice. requested by letter 13/07/15	Compliance routes and operating techniques identified in response to questions 1 (the operational commencement date of the LCP's), 5 (the net thermal input of each LCP) and 6 (how the Minimum Start-up and Shut-down loads for each LCP were obtained).	Received 31/07/15

Table S1.2 Operating techniques		
Description	Parts	Date
Receipt of additional information to the regulation 60(1) Notice.	Confirmation of the compliance routes chosen for LCP231 and LCP232	Received 20/08/15
Receipt of additional information	Section II of the supporting information	Received 28/09/15

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
IC1	The Operator shall submit in writing details of the method for the determination of dust and sulphur dioxide from emission points A1 and A2 including details of the verification of the suitability of such a method.	Complete
IC2	The Operator shall update the documented system of environmental management for the installation with a procedure for the monitoring and management of noise emissions. Upon completion of the procedure a summary of the document shall be submitted to the Agency in writing. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the summary. The procedure identified shall be implemented by the Operator from the date of approval by the Agency.	Complete
IC3	The Operator shall develop a written Site Closure Plan with regard to the requirements set out in Section 2.11 of the Agency Combustion Technical Guidance Note. Upon completion of the plan a summary of the document shall be submitted to the Agency in writing.	Complete
IC4	The Operator shall undertake a review of vented and fugitive gas emission from the installation. The review shall address the following issues: <ul style="list-style-type: none"> • Identify each potential source of such emission, quantify and assess the impact on the environment. • Consider the options to minimise such emissions, giving consideration (but not limited) to the following: <ul style="list-style-type: none"> • current vent delay philosophy • emissions of odourised gas (if any) • the number of compressor system vents • the natural gas venting philosophy • discharge sequencing to prevent inappropriate pressure loads on vent systems • the use of gas recycling or recompression • use of vented gas as a fuel • gas storage, flaring or other alternative venting techniques Where improvements are identified propose a timetable to implement such improvements. The review shall be submitted in writing to the Agency. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the summary. The improvements identified shall be implemented by the Operator from the date of approval by the Agency.	Complete

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
IC5	<p>The Operator shall carry out a waste minimisation audit of the installation that would be considered as part of the National Grid Gas network wide audit. The assessment shall have regard to the Agency Combustion Technical Guidance Note, Section 2.4.2. The audit report shall provide information on any lines and operations identified as causing a process loss, specifying for each, the amount lost (tonnes/year) and the percentage recovered in process or recycled.</p> <p>A summary of the audit shall be sent to the Agency in writing together with a timetable to implement any necessary changes identified. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the summary.</p> <p>The changes identified shall be implemented by the Operator from the date of approval by the Agency.</p>	Complete
IC6	<p>The Operator shall produce an Energy Efficiency Plan for the installation that would be considered as part of the National Grid Gas network wide plan. The plan shall have regard to the Agency Combustion Technical Guidance Note, Section 2.7.2.</p>	Complete
IC7	<p>Following commissioning of new abatement plant and continuous emission monitors, the Operator shall submit to the Environment Agency a report detailing the outcome of the commissioning programme. The report shall include the following:</p> <ul style="list-style-type: none"> (a) An update of the Operator's emission monitoring procedures to include site specific requirements associated with the CEMs; (b) A review of training and maintenance requirements relating to the updated systems at the installation; (c) A review of the post-installation emission performance and abatement efficiency; (d) An updated site drainage plan; and (e) A review of the emission limit for carbon monoxide that applies between Start-up/Shut-down and baseload. <p>The notification requirements of condition 2.4.2 shall be deemed to have been complied with on submission of the report.</p>	Within 3 months of re-commissioning LPC 231 and/or LPC 232 following installation of carbon monoxide abatement plant
IC8	<p>The Operator shall undertake an assessment of the impacts of carbon monoxide emissions, at 1250 mg/m³, including the possible impacts of formaldehyde, in line with our H1 guidance or equivalent methodology. A written report detailing the assessment of the impacts at this limit should be submitted to the Environment Agency.</p>	01/07/2016
IC9	<p>For LCPD LCP 214 and 215 (now LCP231 and 232 under IED). Annual emissions of dust, sulphur dioxide and oxides of nitrogen including energy usage for the year 01/01/2015 to 31/12/2015 shall be submitted to the Environment Agency using form AAE1 via the NERP Registry.</p>	28/01/2016

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; LCP231	<p>Power Turbine (PT) speed is greater than 3465 rpm.</p> <p>Exhaust Cone Temperature (ECT) is greater than 400°C.</p> <p>Gas Generator (GG) speed is greater than 6900 rpm.</p>	<p>Power Turbine (PT) speed is less than 3465 rpm.</p> <p>Exhaust Cone Temperature (ECT) is less than 400°C.</p> <p>Gas Generator (GG) speed is less than 6900 rpm</p>
A2; LCP232	<p>Power Turbine (PT) speed is greater than 3465rpm.</p> <p>Exhaust Cone Temperature (ECT) is greater than 390°C.</p> <p>Gas Generator (GG) speed is greater than 6750rpm</p>	<p>Power Turbine (PT) speed is less than 3465rpm.</p> <p>Exhaust Cone Temperature (ECT) is less than 390°C.</p> <p>Gas Generator (GG) speed is less than 6750rpm.</p>

Schedule 2 – Waste types, 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

Table S3.1 Point source emissions to air						
Emission point ref. & location	Source	Parameter	Limit (including unit)-these limits do not apply during start up or shut down.	Reference period	Monitoring frequency	Monitoring standard or method
A1 (Section 3, Figure 3 of the additional information received on 28/09/15)	LCP No. 231 Gas turbine fired on natural gas	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	-	-	Concentration by calculation, every 4380 operational hours or 2 years, whichever is sooner	As agreed in writing with the Environment Agency
		Carbon Monoxide	-	-	Concentration by calculation, every 4380 operational hours or 2 years, whichever is sooner	As agreed in writing with the Environment Agency
		Sulphur dioxide	-	-	Concentration by calculation, every 4380 operational hours or 2 years, whichever is sooner	As agreed in writing with the Environment Agency
A2 (Section 3, Figure 3 of the additional information received on 28/09/15)	LCP No. 232 Gas turbine fired on natural gas	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	75 mg/m ³ 70% to base load ¹	Monthly mean of validated hourly averages	Continuous	Predictive Emissions Monitoring as described in the application or as otherwise agreed in writing with the Environment Agency
			82 mg/m ³ 70% to base load ¹	Daily mean of validated hourly averages		
			82 mg/m ³ MSUL/MSDL to base load ²			
			150 mg/m ³ 70% to base load ¹	95% of validated hourly averages within a calendar year		

Table S3.1 Point source emissions to air							
Emission point ref. & location	Source	Parameter	Limit (including unit)-these limits do not apply during start up or shut down.	Reference period	Monitoring frequency	Monitoring standard or method	
A2 (Section 3, Figure 3 of the additional information received on 28/09/15)	LCP No. 232 Gas turbine fired on natural gas	Carbon Monoxide	100 mg/m ³ 70% to base load ¹	Monthly mean of validated hourly averages	Continuous	Predictive Emissions Monitoring as described in the application or as otherwise agreed in writing with the Environment Agency Continuous Emission Monitoring to BS EN 14181	
			110 mg/m ³ 70% to base load ¹	Daily mean of validated hourly averages			
			1250 mg/m ³ MSUL/MSDL to base load ²				
			200 mg/m ³ 70% to base load ¹	95% of validated hourly averages within a calendar year			
		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. Following any changes to	BS EN 14792
		Carbon Monoxide	-				BS EN 15058

Table S3.1 Point source emissions to air

Emission point ref. & location	Source	Parameter	Limit (including unit)-these limits do not apply during start up or shut down.	Reference period	Monitoring frequency	Monitoring standard or method
					process equipment, configurations or operating practices that may affect the accuracy of the data generated by the Predictive Monitoring System; discontinuous.	
A2 (Section 3, Figure 3 of the additional information received on 28/09/15)	LCP No. 232 Gas turbine fired on natural gas	Sulphur dioxide	-	-	Concentration by calculation, every 4380 operational hours or 2 years, whichever is sooner	Using factors agreed in writing with the Environment Agency
		Oxygen	-	-	Continuous As appropriate to reference	BS EN 14789
		Water Vapour	-	-	Continuous As appropriate to reference	BS EN 14790
		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 – A5 (detailed in Table B2.2.1.2 of the application made on 29/03/06)	Emergency vents	No parameters set	No limit set	–	–	Permanent sampling access not required.
A7 – A26 (detailed in Table B2.2.1.2 of the application made on 29/03/06)	Vents from Cab A and Cab B	No parameters set	No limit set	–	–	Permanent sampling access not required.

Table S3.1 Point source emissions to air						
Emission point ref. & location	Source	Parameter	Limit (including unit)-these limits do not apply during start up or shut down.	Reference period	Monitoring frequency	Monitoring standard or method
A27 (detailed in Table B2.2.1.2 of the application made on 29/03/06)	Standby generator exhaust	No parameters set	No limit set	–	–	Permanent sampling access not required.
A28 (detailed in Table B2.2.1.2 of the application made on 29/03/06)	Diesel tank breather vents	No parameters set	No limit set	–	–	Permanent sampling access not required.
A29 – A30 (detailed in the response to Part C3 Question 4 of the additional information received on 28/09/15)	CEMS analyser vents	No parameters set	No limit set	–	–	Permanent sampling access not required.
N/A	Local vents associated with fuel gas and lubrication	No parameters set	No limit set	–	–	Permanent sampling access not required.

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

Note 2: This ELV applies when the load varies between MSUL/MSDL and base load during the daily reference period. MSUL and MSDL are defined in Table S1.4.

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
W1 emission to a tributary of the Tetchwick Brook (Section 3, Figure 4 of the additional information received on 28/09/15)	Oil or grease	Surface water via interceptor	No visible emission	Any sample	Daily when site is manned or at frequency of no less than fortnightly	Visual inspection. Permanent sampling access not required.

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
A1; LCP231 A2; LCP232	Operating hours	Continuous	Not applicable	-
A1; LCP231	Operating hours at less than 55% MCR	Continuous	Not applicable	-
A2; LCP232	Operating hours below minimum Start-up/Shut-down load	Continuous	Not applicable	-

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,	Every 3 months	1 January, 1 April, 1 July, 1 October
Carbon Monoxide	A1, A2,	Every 3 months	1 January, 1 April, 1 July, 1 October
Sulphur dioxide	A1, A2,	Every 6 months	1 January, 1 July
Oil or grease	W1	Every 6 months	1 January, 1 July
Oxides of Nitrogen	A2	PEMS check as required by Table S3.1	1 January
Carbon Monoxide	A2	PEMS check as required by Table S3.1	1 January

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

Table S4.3 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
Total operating hours for each LCP	Annually	hr
Operating hours at less than 55% MCR for LCP 231	Annually	hr
Operating hours below minimum Start-up/Shut-down load for LCP 232	Annually	hr

Table S4.4 Reporting forms				
Media/ parameter	Reporting format	Starting Point	Agency recipient	Date of form
Air & Energy	Form IED AR1 – SO ₂ , NO _x and dust mass emission and energy	01/01/16	National & Area Office	31/12/15
LCP	Form IED HR1 – operating hours	01/01/16	National & Area Office	31/12/15
Air	Form IED CON 2 – continuous monitoring	01/01/16	Area Office	31/12/15
CEMs	Form IED CEM – Invalidation Log	01/01/16	Area Office	31/12/15
LCP	Form IED BD1 - Cumulative annual rolling malfunction and breakdown hours	01/01/16	Area Office	31/12/15
Air	Form IED MF1 – pollutant concentrations when during any day with malfunction or breakdown of abatement plant	01/01/16	Area Office	31/12/15
Air	Form IED PM1 - discontinuous monitoring and load.	01/01/16	Area Office	31/12/15
Other performance indicators	Form performance 1 or other form as agreed in writing by the Environment Agency	01/01/16	Area Office	31/12/15
Water	Form water 1 or other form as agreed in writing by the Environment Agency	01/01/16	Area Office	01/10/06

Schedule 5 – Notification

These pages outline the information that the operator must provide.

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

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

Part A

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

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

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

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

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

Part B – to be submitted as soon as practicable

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

Name*	
Post	
Signature	
Date	

* authorised to sign on behalf of the operator

Part C Malfunction or Breakdown of LCP abatement equipment

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

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

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

** authorised to sign on behalf of the operator

Schedule 6 – Interpretation

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

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

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

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

“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.

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

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

“CEN” means Comité Européen de Normalisation.

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

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

“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 2010 No.675 and words and expressions used in this permit which are also used in the Regulations have the same meanings as in those Regulations.

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

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

“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.

“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.

“open cycle gas turbine (OCGT)” means a gas turbine where the exhaust gas exiting the turbine is discarded without any recovery of its heat content.

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

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

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

“SI” means site inspector.

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

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

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

- in relation to emissions from combustion processes, the concentration in dry air at a temperature of 273K, at a pressure of 101.3 kPa and with an oxygen content of 3% dry for liquid and gaseous fuels, 6% dry for solid fuels; and/or

in relation to emissions from gas turbine or compression ignition engine combustion processes, the concentration in dry air at a temperature of 273K, at a pressure of 101.3kPa and with an oxygen content of 15% dry for liquid and gaseous fuels; and/or

- in relation to emissions from 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

Subject to National Security

END OF PERMIT