

# Notice of variation with introductory note

## The Environmental Permitting (England & Wales) Regulations 2016

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National Grid Gas PLC

Peterborough Compressor Station  
1650 Lincoln Road  
Peterborough  
Cambridgeshire  
PE6 7HH

### **Variation application number**

EPR/UP3038LG/V003

### **Permit number**

EPR/UP3038LG

# Peterborough Compressor Station

## Permit number EPR/UP3038LG

### Introductory note

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

The following notice gives notice of the variation of an environmental permit.

This is a Substantial Variation which allows a compressor upgrade (installation of two new 43.25 MWth 'dry low emission (DLE)' gas turbine driven compressor machinery trains).

In association with the compressor upgrade a number of other ancillary plant items are also being upgraded. In addition to the new compressor trains, a new vent stack, site office, engineering workshop and stores, new electrical switchgear, standby diesel generator, gas flow meters, cleaning equipment (two cyclonic gas scrubbers) and various valves will replace existing equipment. The scrubbers will protect the new compressors from hydrocarbon, lube oil or pipeline dust residue from upstream in the National Transmission System.

The existing turbine units will be retained in fully serviced, working order to provide back-up in the event that the new units are unavailable (for example, due to maintenance). When they are operationally available, the new turbines will always be run in preference to the older units. Prior to commissioning of the new DLE units, the existing turbine units will continue to provide lead and standby duty at the site until commissioning activities are completed.

The new compressors and associated equipment will largely be located within the existing installation boundary, however an extension of the boundary is required to accommodate some of the plant.

The schedules specify the changes made to the original 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 UP3038LG	Duly Made 29/03/06	
Additional information	10/08/06	
Additional information	25/09/06	
Additional information	09/11/06	
Additional information	21/11/06	
Permit determined UP3038LG	22/12/06	
Variation EPR/UP3038LG/V002 (PAS/ Billing ref: AP3130TU)	29/03/10	Variation issued
Application EPR/UP3038LG/V003	Duly Made 28/11/16	Compressor and ancillary plant upgrade. Extension to installation boundary.
Response to schedule 5 notice	13/03/17	Emission point plan
Response to schedule 5 notice	22/03/17	Supporting information for noise modelling, including: manufacturer sound power data for the mitigated sources, a site plan showing noise sources and further information on the location of sensitive receptors.
Response to schedule 5 notice	04/08/2017	Further supporting information for noise modelling, including a technical performance

<b>Status log of the permit</b>		
<b>Description</b>	<b>Date</b>	<b>Comments</b>
		guarantee and additional noise monitoring results.
Variation determined EPR/UP3038LG/V003 (PAS/ Billing ref: GP3531RR)	02/11/2017	Varied permit issued.

End of introductory note

# Notice of variation

## 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/UP3038LG**

### Issued to

**National Grid Gas PLC** (“the operator”)

whose registered office is

**1-3 Strand**

**London**

**WC2H 5EH**

company registration number 2006000

to operate a regulated facility at

**Peterborough Compressor Station**

**1650 Lincoln Road**

**Peterborough**

**Cambridgeshire**

**PE6 7HH**

to the extent set out in the schedules.

The notice shall take effect from 02/11/2017

Name	Date
M Bischer	02/11/2017

Authorised on behalf of the Environment Agency

## Schedule 1 – conditions to be deleted

None

## Schedule 2 – conditions to be amended

The following conditions are amended as a result of the application made by the operator

**Table S1.1 as referenced in condition 2.1.1 is amended to incorporate the new gas turbines and the new standby generator, the table now reads as follows:**

<b>Table S1.1 activities</b>		
<b>Activity listed in Schedule 1 of the EP Regulations</b>	<b>Description of specified activity</b>	<b>Limits of specified activity</b>
S1.1 A(1)(a) - Burning any fuel in an appliance with a rated thermal input of 50 or more megawatts.	Burning of natural gas in natural gas driven turbine units for the purpose of compressing natural gas, comprising;  3 x 45 MWth and 2 x 43.25 MWth DLE engines  Operation of standby generator burning gas oil (<3.5MWth input)	From receipt of natural gas to discharge of exhaust gases and the compression of gas for export to the grid.  A maximum of two gas turbine units shall be operated at any one time above minimum governed speed.  Operation of gas oil fired standby generator solely for the purpose of providing electricity to the installation in the event of a failure of supply (periodic testing of generator is also permitted).
<b>Directly Associated Activity</b>		
Directly associated activity	Waste handling and storage	From generation of waste materials to despatch for disposal or recovery.
Directly associated activity	Raw/ ancillary materials storage and handling, including gas oil	From receipt and storage of the raw/ ancillary materials to dispatch for use within the installation, including all associated pipework, handling and transfer to and from storage tanks.

**Table S1.1 as referenced in condition 2.3.1 is amended to incorporate documents submitted as part of this variation, the table now reads as follows:**

<b>Table S1.2 Operating techniques</b>		
<b>Description</b>	<b>Parts</b>	<b>Date Received</b>
Application	The response to section 2.1 and 2.2 in the Application.	29/03/2006
Application	The response to section B2.10 and Appendix 7 in the application	29/03/2006
Application EPR/UP3038LG/V003	Application forms Part C2 and C3 and referenced supporting information	01/08/2016

Table S1.3 as referenced in condition 2.5.1 is amended to add one improvement condition (IC9). The additional Improvement condition is included in the table below:

Reference	Requirement	Date
IC9	<p>In order to validate the assessment provided within the application, the Operator shall prepare and submit a comprehensive noise assessment report undertaken by an experienced and suitably qualified person in accordance with BS4142:2014 (Methods for rating and assessing industrial and commercial sound). The assessment shall identify and assess the impact of noise emissions upon surrounding sensitive receptors arising from the operation of items of new plant associated with variation EPR/UP3038LG/V003.</p> <p>In the event that the report shows that noise could have a significant adverse impact at the sensitive receptors, the operator shall submit a noise management plan which shall include proposals for the further attenuation and/or management of noise and timescales, to be agreed with the Environment Agency, for the implementation of the proposed measures. Any proposals shall be implemented within the agreed timescales.</p>	30/04/2021

Table S4.1 as referenced in conditions 3.1.1, 3.6.1 and 3.6.4 is amended to remove the emission points associated with plant which is being removed and/or replaced, and to add emission points associated with new plant added as part of this variation. The table now reads as follows:

Emission point ref. & location	Source	Parameter	Limit (including unit)	Reference period	Monitoring frequency	Monitoring standard or method
A1 (Principal Emission Points plan, drawing number PAC2697-005)	Combustion unit Cab A Avon 1533/76G fired on natural gas via stack through silencer	Oxides of Nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	170 mg/m <sup>3</sup>	Daily average	Continuous	Predictive Emissions Monitoring as described in the application or otherwise agreed in writing by the Environment Agency
				95% of validated hourly averages within a calendar year		
A2 (Principal Emission Points plan, drawing number PAC2697-005)	Combustion unit Cab B Avon 1533/76G fired on natural gas via stack through silencer		170 mg/m <sup>3</sup>	Daily average		
				95% of validated hourly averages within a calendar year		
A3 (Principal Emission Points plan,	Combustion unit Cab C Avon		170 mg/m <sup>3</sup>	Daily average		

**Table S4.1 Point source emissions to air – emission limits and monitoring requirements (Excluding start up, shut down and unit operation at loads of <55% MCR for A1, A2, A3, A41 and A42)**

Emission point ref. & location	Source	Parameter	Limit (including unit)	Reference period	Monitoring frequency	Monitoring standard or method
drawing number PAC2697-005)	1533/76G fired on natural gas via stack through silencer		50 mg/m <sup>3</sup>	95% of validated hourly averages within a calendar year		
A41 (Principal Emission Points plan, drawing number PAC2697-005)	Combustion unit Cab D Solar Titan 130 fired on natural gas via stack through silencer			Daily average		
				95% of validated hourly averages within a calendar year		
A42 (Principal Emission Points plan, drawing number PAC2697-005)	Combustion unit Cab E Solar Titan 130 fired on natural gas via stack through silencer			Daily average		
				95% of validated hourly averages within a calendar year		
A1 (Principal Emission Points plan, drawing number PAC2697-005)	Combustion unit Cab A Avon 1533/76G fired on natural gas via stack through silencer	Carbon Monoxide (CO)	600 mg/m <sup>3</sup>	Daily average	Continuous	Predictive Emissions Monitoring as described in the application or otherwise agreed in writing by the Environment Agency
				95% of validated hourly averages within a calendar year		
A2 (Principal Emission Points plan, drawing number PAC2697-005)	Combustion unit Cab B Avon 1533/76G fired on natural gas via stack through silencer		900 mg/m <sup>3</sup>	Daily average		
				95% of validated hourly averages within a calendar year		
A3 (Principal Emission Points plan,	Combustion unit Cab C Avon		600 mg/m <sup>3</sup>	Daily average		

**Table S4.1 Point source emissions to air – emission limits and monitoring requirements (Excluding start up, shut down and unit operation at loads of <55% MCR for A1, A2, A3, A41 and A42)**

Emission point ref. & location	Source	Parameter	Limit (including unit)	Reference period	Monitoring frequency	Monitoring standard or method
drawing number PAC2697-005)	1533/76G fired on natural gas via stack through silencer			95% of validated hourly averages within a calendar year		
A41 (Principal Emission Points plan, drawing number PAC2697-005)	Combustion unit Cab D Solar Titan 130 fired on natural gas via stack through silencer		40 mg/m <sup>3</sup>	Daily average		
				95% of validated hourly averages within a calendar year		
A42 (Principal Emission Points plan, drawing number PAC2697-005)	Combustion unit Cab E Solar Titan 130 fired on natural gas via stack through silencer		40 mg/m <sup>3</sup>	Daily average		
				95% of validated hourly averages within a calendar year		
A1 (Principal Emission Points plan, drawing number PAC2697-005)	Combustion unit Cab A Avon 1533/76G fired on natural gas via stack through silencer	Oxides of Nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> ) and Carbon Monoxide (CO)	--	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	Oxides of Nitrogen: BS EN 14792  Carbon Monoxide: BS EN 15058 or as agreed in writing with the Environment Agency
A2 (Principal Emission Points plan, drawing number PAC2697-005)	Combustion unit Cab B Avon 1533/76G fired on natural gas via stack through silencer				When operational hours in any year are greater than 2,200 hours; discontinuous	



**Table S4.1 Point source emissions to air – emission limits and monitoring requirements (Excluding start up, shut down and unit operation at loads of <55% MCR for A1, A2, A3, A41 and A42)**

Emission point ref. & location	Source	Parameter	Limit (including unit)	Reference period	Monitoring frequency	Monitoring standard or method
A3 (Principal Emission Points plan, drawing number PAC2697-005)	Combustion unit Cab C Avon 1533/76G fired on natural gas via stack through silencer				us, every year or every 4,380 operational hours, whichever is sooner.	
A41 (Principal Emission Points plan, drawing number PAC2697-005)	Combustion unit Cab D Solar Titan 130 fired on natural gas via stack through silencer				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.	
A42 (Principal Emission Points plan, drawing number PAC2697-005)	Combustion unit Cab E Solar Titan 130 fired on natural gas via stack through silencer					
A10-A24	Vents from Cab units A, B & C	No parameters set	No limit set	--		--
A28-A32	Gas boiler exhausts (5 no.) serving amenity and Cab A, B and C fuel gas pre-heat tube heat exchangers	No parameters set	No limit set	--	--	--
A33	Lube oil breather vent, Cab D	No parameters set	No limit set	--	--	--
A34	Lube oil breather vent, Cab E	No parameters set	No limit set	--	--	--
A35	Fuel gas vent, Cab D	No parameters set	No limit set	--	--	--

**Table S4.1 Point source emissions to air – emission limits and monitoring requirements (Excluding start up, shut down and unit operation at loads of <55% MCR for A1, A2, A3, A41 and A42)**

<b>Emission point ref. &amp; location</b>	<b>Source</b>	<b>Parameter</b>	<b>Limit (including unit)</b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
A36	Fuel gas vent, Cab E	No parameters set	No limit set	--	--	--
A37	Dry gas seal vent, Cab D	No parameters set	No limit set	--	--	--
A38	Dry gas seal vent, Cab E	No parameters set	No limit set	--	--	--
A39	Standby generator diesel oil tank breather vent	Diesel fume	No limit set	--	--	--
A40	Standby generator exhaust (emergency use and testing only)	Products of combustion	No limit set	--	--	--
A44	Scrubber pressure relief vent	No parameters set	No limit set	--	--	--
A45	Scrubber pressure relief vent	No parameters set	No limit set	--	--	--
A46	Compressor Cab A casing vent and starter gas vent and station suction header vents	No parameters set	No limit set	--	--	--
A47	Compressor Cab B casing vent and starter gas vent and station discharge vents	No parameters set	No limit set	--	--	--

**Table S4.1 Point source emissions to air – emission limits and monitoring requirements (Excluding start up, shut down and unit operation at loads of <55% MCR for A1, A2, A3, A41 and A42)**

<b>Emission point ref. &amp; location</b>	<b>Source</b>	<b>Parameter</b>	<b>Limit (including unit)</b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
A48	Compressor Cab C casing vent and starter gas vent	No parameters set	No limit set	--	--	--
A49	Compressor Cab D casing vent	No parameters set	No limit set	--	--	--
A50	Compressor Cab E casing vent	No parameters set	No limit set	--	--	--
A51	Station vent stack (suction)	No parameters set	No limit set	--	--	--
A52	Station vent stack (discharge)	No parameters set	No limit set	--	--	--
A53	Scrubber vent	No parameters set	No limit set	--	--	--

Table S4.2 as referenced in conditions 3.1.1, 3.6.1 and 3.6.4 is amended to incorporate an additional discharge point to surface water (W2). The table now reads as follows:

<b>Table S4.2 Point Source emissions to water (other than sewer) – emission limits and monitoring requirements</b>						
<b>Emission point ref. &amp; location</b>	<b>Parameter</b>	<b>Source</b>	<b>Limit (incl. unit)</b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
W1 emission to a tributary of the Brook Drain (Application Part III Figure 1.3c, detailed in Table B2.2.2.2 of the application)	Oil or grease	Uncontaminated surface water run-off and treated domestic effluent (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.
W2 emission to a tributary of the Brook Drain <sup>Note1</sup>	Oil or grease	Uncontaminated surface water run-off and treated domestic effluent (via interceptor and/or package treatment plant)	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.

Note 1: final location of emission point W2 to be confirmed in accordance with pre-operational measure for future development 4.

Table S4.4 as referenced in condition 3.6.1 is amended to incorporate the new gas turbines (units D and E). The table now reads as follows:

<b>Table S4.4 Process monitoring requirements</b>				
<b>Emission point reference or source or description of point of measurement</b>	<b>Parameter</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>	<b>Other specifications</b>
Turbine units A, B, C, D & E	Operating hours at less than 55% MCR	Continuous	Not applicable	Shall be reported annually
Turbine units A, B, C, D & E	Operating hours	Continuous	Not applicable	Shall be reported annually

Table S5.1 as referenced in condition 4.2.2 is amended to incorporate the additional emission points (A41 and A42) which are associated with the new gas turbines and an additional discharge point to surface water (W2). The table now reads as follows:

Table S5.1 Reporting of monitoring data			
Parameter	Emission or monitoring point/reference	Reporting period	Period begins
Oxides of nitrogen Parameters as required by condition 3.6.1.	A1, A2, A3, A41 <sup>Note 1</sup> , A42 <sup>Note 1</sup>	Every 3 months	01/01/07
Carbon monoxide Parameters as required by condition 3.6.1	A1, A2, A3, A41 <sup>Note 1</sup> , A42 <sup>Note 1</sup>	Every 3 months	01/01/07
Oxides of nitrogen Parameters as required by condition 3.6.1	A1, A2, A3, A41 <sup>Note 1</sup> , A42 <sup>Note 1</sup>	PEMS check as required by table S4.1 in Schedule 4	01/01/07
Carbon monoxide Parameters as required by condition 3.6.1	A1, A2, A3, A41 <sup>Note 1</sup> , A42 <sup>Note 1</sup>	PEMS check as required by table S4.1 in Schedule 4	01/01/07
Oil or grease Parameters as required by condition 3.6.1	W1, W2 <sup>Note 1</sup>	Every 6 months	01/01/07
Note 1: Monitoring to begin once emission points are installed (A41, A42 and W2)			

### Schedule 3 – conditions to be added

The following conditions are added as a result of the application made by the operator

**Condition 2.6.1 is added to the permit to allow the inclusion of pre-operational measures in Table S1.4, the condition reads as follows:**

2.6.1 The operations specified in schedule 1 table S1.4 shall not commence until the measures specified in that table have been completed.

**Table S1.4 as referenced in condition 2.6.1 is added to the permit to introduce pre-operational measures into the permit. The table reads as follows:**

Table S1.4 Pre-operational measures for future development		
Reference	Operation	Pre-operational measures
1	New/ modified waste storage areas	<p>The operator shall submit detailed design information on the new or modified waste storage areas to the Environment Agency for approval. This shall be submitted at least three calendar months (or any other date as agreed with the Environment Agency) before construction commences.</p> <p>The information shall include (but not be limited to) the following:</p> <ul style="list-style-type: none"> <li>• detailed specification of the waste storage areas</li> <li>• a description of any associated pollution prevention measures, including confirmation of the design standards and capacity of any secondary containment</li> <li>• an updated site layout plan showing waste storage location[s]</li> </ul>

Table S1.4 Pre-operational measures for future development		
Reference	Operation	Pre-operational measures
2	New/ modified Raw materials storage areas	<p>The operator shall submit detailed design information on the new or modified raw material storage to the Environment Agency for approval. This shall be submitted at least three calendar months (or any other date as agreed with the Environment Agency) before construction commences.</p> <p>The information shall include (but not be limited to) the following:</p> <ul style="list-style-type: none"> <li>• detailed specification of the raw material storage</li> <li>• a description of any associated pollution prevention measures, including confirmation of the design standards and capacity of any secondary containment</li> <li>• an updated site layout plan showing raw material storage location[s]</li> </ul>
3	Extractive Exhaust Emissions Testing	<p>At least one calendar month (or any other date as agreed with the Environment Agency) prior to the first scheduled round of periodic extractive exhaust emissions testing (post operational acceptance) the operator shall update the emissions monitoring procedures to include site specific requirements. The updated emissions monitoring procedures shall be submitted to the Environment Agency for approval.</p> <p>No operations shall commence unless the Environment Agency has given prior written permission under this condition.</p>
4	Site drainage for each phase of development granted by variation EPR/UP3038LG/V003	<p>For each phase of development granted by variation EPR/UP3038LG/V003, the Operator shall submit a written site drainage report to the Environment Agency for approval. Each report shall include (but not be limited to) the following:</p> <ul style="list-style-type: none"> <li>• a detailed site drainage plan for the part of the site covered by the report, reflecting the proposed drainage system and showing the location of all discharge points in that section</li> <li>• the design specification of any containment infrastructure to be installed as part of that section of the drainage system, including all sub-surface structures and equipment</li> <li>• an inspection and maintenance programme for that section of the site drainage system or, if applicable, the drainage system as a whole</li> <li>• details of any abatement equipment and pollution control devices to be installed as part of that section of the drainage system</li> <li>• a proposed timetable for completion of any additional improvement works for that section of the drainage system or, if applicable, the drainage system as a whole</li> </ul> <p>For each phase of development granted by variation EPR/UP3038LG/V003 the site drainage report must be agreed in writing by the Environment Agency before that phase commences, unless the Environment Agency has given prior written permission for operations to commence.</p>
5	Extractive Exhaust Emissions Testing	The operator shall carry out a gas homogeneity test in line with BS EN 15259.

<b>Table S1.4 Pre-operational measures for future development</b>		
<b>Reference</b>	<b>Operation</b>	<b>Pre-operational measures</b>
		At least three calendar months (or any other date as agreed with the Environment Agency) prior to the first scheduled round of periodic extractive exhaust emissions testing (post operational acceptance) the operator shall submit the results of the homogeneity test together with proposals and justification for ongoing monitoring strategy and practices.

**Schedule 4 – amended plan**

Plan is subject to National Security.