

Notice of variation with introductory note

Environmental Permitting (England & Wales) Regulations 2010

Dragon LNG Limited

Main Road
Waterston
Milford Haven
Pembrokeshire
SA73 1DR

Variation application number
EPR/AP3136UA/V003

Permit number
EPR/AP3136UA

Dragon LNG

Permit number EPR/AP3136UA

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.

The Dragon LNG installation comprises a terminal for off-loading natural gas from ship. The main purpose of the installation is to store the off-loaded natural gas and convert it from a liquid into a gaseous form on demand for onward transmission by pipeline to various parts of the United Kingdom.

This variation permits the operation of a new LNG re-liquefaction plant. This plant will be used to re-liquefy boil-off gas from the two existing LNG storage tanks and is required during periods of zero gas send-out from the installation to the UK gas pipeline network. Prior to the re-liquefaction plant becoming operational, boil-off gas is recovered by burning in a small gas turbine combined heat and power plant (the “Cogen Plant”) which provides electrical power and process heating. However, economical operation of the Cogen plant is not always possible, for example when there is no requirement for process heating. The re-liquefaction plant therefore represents an alternative solution for dealing with boil-off gas and will ultimately allow the existing cogeneration plant to be decommissioned when it is operational.

The re-liquefaction plant operates by cooling the boil-off gas evaporating from the LNG tanks so that it condenses back to a liquid, which can be pumped back to the storage tanks. A nitrogen refrigerant is employed as a heat transfer medium to cool the boil-off gas to a temperature of approximately -162°C, where it re-condenses to a liquid, which will then be pumped back to the main LNG tanks. The boil-off gas / LNG condensate circuit and refrigerant circuits will both operate on a closed cycle and as such there will be no emissions to atmosphere from the Re-liquefaction Plant during normal operation.

Other benefits associated with the Re-liquefaction plant can be summarised as follows:

- There will be no emissions to water from the Re-liquefaction Plant;
- LNG boil-off gas will be recovered which would otherwise have been burned on the Cogen Plant;
- Combustion emissions such as carbon dioxide and air pollutants such as oxides of nitrogen (NO₂) and unburned hydrocarbons arising from the present Cogen plant will be eliminated when the Cogen plant is not operated;
- There will be a saving in water resources and treatment costs when the Cogen Plant is not operated; and
- The inventory within the LNG storage tanks will not diminish or deteriorate in specification.

This variation also permits the following changes which are associated with aqueous discharges from the wider installation:

1. Weekly sampling of all transfer points to effluent treatment plant in Table 7.1.2 and comparison of concentration limits with an average of all weekly sampling results in any given calendar month;
2. Inclusion of existing emission point for rainwater run-off from around the storage tanks;
3. Amendment of Permit condition 7.1.2 to more accurately reflect installed plant items.
4. Removal of Permit condition 2.10.5, which is out of date and will be addressed by Large Combustion Plant monitoring requirements going forward.

Items 1 and 2 described above relate to existing releases to water, where the actual release will remain unchanged. Item 3 describes minor administrative changes.

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 BT7817	Received 20/11/02	
Response to request for information (1)	Request dated 17/01/03	Response received 18/02/03
Request (1) by Agency to extend determination by 1 month	Request dated 18/03/03	Request accepted 25/03/03
Response to request for information (2)	Request dated 04/04/03	Response received 25/04/03
Request (2) by Agency to extend determination by 4 weeks	Request dated 05/06/03	Response received 06/06/03
Permit BT7817	Determined 20/06/03	
Application for Variation by Operator HP3238LJ	Application received 06/03/06	Variation of permit required to reflect changes in design of LNG installation.
1 st Schedule 7 notice	Issued 18 th May 2006	Information received on 8 th June 2006 and 12 th July 2006
2 nd Schedule 7 notice	Issued 16 th August 2006	Information Received 18 th September 2006
3 rd Schedule 7 notice	Issued 10 th October 2006	Information received 1 st November 2006
Agency request for extension of determination date to 31 st December 2006	Issued 17 th October 2006	Accepted 6 th November 2006
Agency request for extension of determination date to 31 st March 2007	Issued 8 th December 2006	Accepted 15 th December 2006
Agency request for extension of determination date to 31 st May 2007	Issued 27 th March 2007	Accepted 30 th March 2007
Agency request for extension of determination date to 13 th July 2007	Issued 25 th May 2007	Accepted 1 st June 2007
Agency request for extension of determination date to 28 th September 2007	Issued 11 th July 2007	Accepted 12 th July 2007
Agency request for extension of determination date to 7 th November 2007	Issued 26 th September 2007	Accepted 28 th September 2007

Status log of the permit		
Description	Date	Comments
Variation HP3238LJ	Issued 9 th November 2007	
Application AP3135UA for transfer of permit BT7817 to Dragon LNG	Received 20 th July 2007	
Agency request for extension of determination date for transfer to 2 weeks beyond issue of variation HP3238LJ	Issued 20 th August 2007	Accepted 21 st August 2007
Operator request for extension of determination date to 10 th December 2007 to allow submissions of additional information	Received 23 rd November 2007	
Transferred permit AP3136UA	Issued 10 th December 2007	
Application for variation by operator EA/EPR/AP3136UA/V001	Received 9 th May 2008	
Request for information	16 th May 2008	Received 12 th July 2008
Variation application duly made	12 th July 2008	
Request by applicant to consider further information	Received 15 th July, 27 th October and 14 th November (DLNG- EA- 0066 & MEL127/CM/ EM), 24 th November 2008	
Agency request for extension of determination date for variation to 30 th September 2008	12 th September 2008	Accepted 16 th September 2008
Operator request for extension of determination date to 30 th November 2008 to allow submissions of additional information	10 th October 2008	Accepted 7 th November 2008

Status log of the permit		
Description	Date	Comments
Operator request for extension of determination date to 21 st December 2008 to allow ongoing discussions regarding the Nitrogen plant.	4 th December 2008	Accepted 19 th December 2008
Operator request for extension of determination date to 15 th February 2009 to allow ongoing discussions regarding the Nitrogen plant. This request was made during a site visit on 18 th December 2008 and agreed at the time.	Letter received 24 th December 2008	Accepted 18 th December 2008
Operator request to determine variation excluding the Nitrogen plant	26 th January 2009	Accepted 10 th February 2009
Operator comments on draft variation	24 th February 2009	
Request by applicant to consider further information	Two letters received on 5 th June 2009 i.e. DLNG-EA-0087 and MEL146/CM/EM	
Variation EA/EPR/AP3136UA/V001	Determined	28 th August 2009
Variation Application EPR/AP3136UA/V003	Duly made 07/08/15	Application to vary the permit to allow the operation of a new re-liquefaction plant. Also various minor changes associated with aqueous discharges from the site and correction of permit conditions 7.1.2 and 2.10.5
Additional information received	14/09/15	Revised Compander shelter elevations
Additional information requested	02/10/15	Number of and noise spectrum for upsized fin fan coolers; request for confirmation of any other design changes which may affect noise assessment and request for background noise survey reports
Additional information received	06/10/15	Baseline noise monitoring report,

Status log of the permit		
Description	Date	Comments
Additional information requested	12/10/15 & 14/10/15	Proposed discharge of fire-fighting foam effluent and existing rainwater discharge
Additional information received	13/10/15 & 15/10/15	Further clarification regarding release of rainwater and requested fire-fighting foam effluent release
Additional Information Received	27/10/15	Updated noise modelling report for the revised re-liquefaction plant specification.
Additional Information Received	03/11/15	Updated plan showing proposed W1 discharge point & response to request for background noise monitoring report L-300017-S03-TECH-003.
Variation determined EPR/AP3136UA/V003	07/12/15	Varied permit issued.

End of introductory note

Notice of variation

Environmental Permitting (England and Wales) Regulations 2010

The Natural Resources Body for Wales ("Natural Resources Wales") in exercise of its powers under regulation 20 of the Environmental Permitting (England and Wales) Regulations 2010 varies

Permit number
EPR/AP3136UA

issued to:
Dragon LNG Limited ("the operator")

whose registered office is

**Main Road
Waterston
Milford Haven
Pembrokeshire
SA731DR**

company registration number 04562711

to operate part of a regulated facility at

**Main Road
Waterston
Milford Haven
Pembrokeshire
SA73 1DR**

to the extent set out in the schedules.

The notice shall take effect from 7th December 2015

Name

Date



07 December 2015

Eirian Macdonald, Principal Permitting Team Leader, NRW Permitting Service
Authorised on behalf of Natural Resources Wales

Schedule 1 – conditions to be deleted

Condition 2.10.5 shall be deleted:

- 2.10.5 The additional process monitoring identified for the Secondary Heat Recovery Unit, the three Waste Heat Boilers and the two Auxiliary Boilers referred to in section 2.10.2.7 of the Application shall be undertaken and the records kept in accordance with condition 3 of this permit.

Schedule 2 – conditions to be amended

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

Table 1.1.1 shall be amended to:

Table 1.1.1: Permitted activities			
Activity under Schedule 1 of the Regulations/ Associated Activity	Description of specified activity	Schedule 1 Activity Reference (if applicable)	Limits of specified activity
Gas Turbines, Waste Heat Boilers, 6 Submerged Combustion Vaporisers (SCVs) and collection basin for re-circulating water from SCVs and Co-gen plant, steam turbine	Combustion units using natural gas as fuel to produce steam and power (aggregate thermal input > 50MW)	1.1 A(1)(a)	Combustion and control of emissions. Water usage through the de-aerator. Condensing turbine and energy efficiency.
Mechanical draught air cooling tower system (Not listed activities)	Units used to cool steam turbine condenser to allow independent operation of the steam turbine and its turbine condenser bypass system when there is no waste heat being used for the regasification process.	Directly associated activities.	Control of emissions to water
Storage of Liquefied Natural Gas (LNG) including Re-liquefaction Plant. (Not a listed activity)	LNG is stored and vaporised for use in the site combustion units and for export to the national gas distribution system. Boil-off gas from the LNG storage tanks is re-liquefied and returned to the LNG storage tanks.	Part of the Stationary Technical Unit	Unloading, storage (in two tanks) and distribution on site, including the use of the emergency flare.
Boil-Off Gas (BOG) compressors and pipe work (Not a listed activity)	Compression of boil off gas from the LNG installation and delivery to the Cogen plant as fuel.	Part of the Stationary Technical Unit	From the receipt of gas feed for compression to the delivery of compressed gas to the Cogen plant or SCVs

Table 1.1.1: Permitted activities

Activity under Schedule 1 of the Regulations/ Associated Activity	Description of specified activity	Schedule 1 Activity Reference (if applicable)	Limits of specified activity
Boiler feed water treatment plant and equipment including de-aerator (Not a listed activity)	Treatment of boiler feed water	Part of the Stationary Technical Unit	From the receipt of raw water to the delivery of treated water to the boilers including the receipt, storage and use of raw materials and the storage and disposal of wastes.
Two standby diesel generators (Not a listed activity)	Compression ignition engines using diesel as fuel to produce power	Part of the Stationary Technical Unit	Engines and generators including the receipt, storage and use of fuel and the storage and disposal of wastes.

Table 2.3.1 shall be amended to:

Table 2.3.1: Operating techniques		
Description	Parts	Date Received
Application for PPC permit BT7817	The response to question 2.3 given in section LNG/IPPC.B2.3 of the application	20/11/02
Response to First Schedule 4 Part 1 Notice	Response to questions 9, 10 and 11	18/02/03
Application for variation HP3238LJ.	Section LNG/PPC2.1 and LNG/PPC2.12 of application	06/03/06
Response to first Schedule 7 notice	Response to questions 1, 5, 8, 9, and 13	08/06/06
Application for variation EA/EPR/AP3136UA/V001 and supporting information.	Response to questions C1.1, C1.2, C1.3, C1.4, C2.1 to C2.12 and documents LNG/PPC.C2.1 and LNG/PPC.C2.12	09/05/2008
Letter reference DLNG-EA-0059 dated 14 July 2008.	All	15/07/2008
Letter reference DLNG_EA-0065 dated 23 October 2008.	All	17/10/2008
Letter reference DLNG-EA-066 dated 13 November 2008.	All	14/11/2008
Letter reference MEL127/CM/EM dated 6 November 2008.	All	14/11/2008
Letter reference DLNG-EA-0087 dated 3 June 2009	All	05/06/2009
Letter reference MEL146/CM/EM dated 28 May 2009	All	05/06/2009
Variation application EPR/AP3136UA/V003	Application Form C3, response to questions 3a and 3c contained within "Application for a Variation to Environmental Permit AP3136UA. Supporting Information for Introduction of a Re-liquefaction Plant" (Document Reference 9Y1920/AP3136UA/RP/Variation). Specifically Section 3 Operating Techniques.	04/08/15

Condition 6.3.1 shall be amended to:

- 6.3.1 Emissions to water from the emission point(s) specified in Table 6.3.1 shall only arise from the source(s) specified in that Table.

Condition 7.1.2 shall be amended to:

- 7.1.2 Transfers from the installation to the neighbouring SEM Tank storage Milford Haven reservoirs shall be subject to the sampling frequency and emission limits stated in Table 7.1.2.

Table 7.1.2 shall be amended to:

Table 7.1.2: Transfer points to effluent treatment plant				
Sampling frequency	Once per week for all emission points			
Emission point	Oil (mg/l)	Suspended solids (mg/l)	pH	Total Oxidised Nitrogen as N (mg/l)
E2(A) & E2(B)	5*	50*	6 – 9*	-
E3	5*	50*	6 – 9*	45*
* Average of all weekly sampling results in any given calendar month.				

Table 9.1.1 shall be amended to:

Table 9.1.1: Improvement programme requirements		
Reference	Requirement	Date
9.1	The Operator shall complete a noise monitoring survey for the installation as defined by the response to condition 1.1.3(e). The results and conclusions shall be sent in a report to the Agency. The report shall indicate how account has been taken of the relevant parts of Agency guidance presented in 'IPPC H3 – Horizontal Noise Guidance (Part 1 and 2)'.	4 months after commissioning
9.2	A noise management plan shall be submitted to the Agency, detailing the measures to be used to control emissions of noise and shall be accordance with Appendix 4 (noise management plan) of Horizontal Guidance Note H3 (Horizontal Noise Guidance) Part 2). The plan shall build on the operator's 'Proposed Action Plan to Reduce Noise Level if the Condition Requirements of the PPC Permit AP3136UA are Exceeded. Rev: 0 – 8 Sept 2008' Additional points shall include, but not be limited to: (i) Identification and assessment of the impact of current noise emissions arising from the permitted activities using the 'survey methodology: process or site survey' given in H3 (Part 2) section 2.4.1.2 (ii) Detail an options appraisal for achieving Best Available Techniques for targeted noise attenuation and compliance, based on indicative benchmarks given in H3. (iii) Further to (ii), proposals for implantation of BAT with dates for the implementation of individual measures. (iv) Proposals to ensure that new items of plant and equipment minimize any potential to contribute to creeping ambient levels in the locality. (v) Proposals for measuring and assessing the impact of installation noise upon community noise levels using a hazard and risk-based approach. Dates for implementation of individual measures shall be included. The plan shall be implemented and maintained by the operator from the date of approval in writing by the Agency. The operator shall review the plan annually and record at least once a year or as soon as practicable after a complaint (whichever is earlier), whether changes to the plan should be made and make any appropriate changes to the plan identified by a review.	6 months after commissioning
9.3	The Operator shall submit to the Agency a post commissioning report for the installation. The report shall include a comparison of process and emissions performance compared with the design assumptions in the application. The report shall also include air dispersion modelling results based on actual measured emissions from the release points under normal and maximum conditions.	6 months after commissioning
9.4	The Operator shall develop and implement an energy management and efficiency improvement plan. The plan shall include improvement targets, actions and timescale. The plan shall be submitted in writing to the Environment Agency.	10 months after commissioning
9.5	The Operator shall implement an environmental management system, having regard to section 2.1 of the relevant IPPC Sectoral or Technical guidance. A report shall be submitted to the Agency summarising the key details and the implementation and accreditation date.	12 months after commissioning

Table 9.1.1: Improvement programme requirements

Reference	Requirement	Date
9.6	- The Operator shall carry out an assessment to determine measures that could be taken to reduce the nitrate emissions from the site, in order to minimise any impact on the Milford Haven waterway. - The assessment shall include the costing and feasibility of installation of each of the measures identified. - On completion of the assessment a report shall be completed and submitted to the Agency for approval detailing the assessment. The report shall also include a time-tabled plan for installation of any feasible measures identified. - The installation plan shall be implemented from the date of approval by the Agency.	12 months after commissioning
9.7	Following successful commissioning of the re-liquefaction plant and establishment of routine steady operation, the Operator shall undertake noise monitoring at the five nearest local receptors. This shall include: - A full noise monitoring survey and assessment meeting the BS4142:2014 standard 1/3rd octave and narrow band (FFT) measurements to identify any tonal elements or low frequency noise The noise monitoring shall assess the following two scenarios: - Re-liquefaction plant operating in tandem with the Co-gen plant - Re-liquefaction plant operating without the Co-gen Plant operating Upon completion of the work, a written report shall be submitted to Natural Resources Wales. The report shall make reference to the Re-liquefaction Plant specifications, predictions and proposed attenuation measures in the Xodus Report L-300017-S05-TECH-002 "Update of Noise Model for proposed new re-liquefaction plant". If rating levels associated with the Re-liquefaction Plant are detected which are likely to cause adverse impact at sensitive receptors, the report shall include an assessment of the most suitable abatement techniques, an estimate of the cost and a proposed timetable for their installation. The noise management plan for the installation may need to be reviewed as a result of the report findings.	Within 12 months of the completion of commissioning of the re-liquefaction plant.

Schedule 3 – conditions to be added

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

Condition 1.1.4 shall be added:

- 1.1.4 The operations specified in table 1.1.4 shall not commence until the measures specified in that table have been completed.

Table 1.1.4 Pre-operational measures for future development		
Reference	Operation	Pre-operational measures
1	Re-liquefaction Plant	At least 2 months prior to the commencement of commissioning; the Operator shall provide a written commissioning plan, including timelines for completion, for approval by Natural Resources Wales. The commissioning plan shall include the expected emissions to the environment during the different stages of commissioning, the expected durations of commissioning activities and the actions to be taken to protect the environment and report to Natural Resources Wales in the event that actual emissions exceed expected emissions. Commissioning shall be carried out in accordance with the commissioning plan as approved.

Table 6.3.1 shall be added:

Table 6.3.1 Emission points into water (other than emissions to sewer) and land		
Emission Point ref. & location	Source	Destination
W1(Point at which surface water drainage pipe immediately upstream of the AGI pond leaves the installation boundary (NGR SM 92720 05037)	Clean uncontaminated rainwater run-off from around the LNG storage tanks	Milford Haven Waterway via the AGI Pond

Conditions 6.3.2 and 6.3.3 shall be added:

- 6.3.2 The limits for emissions into water for the parameter(s) and emission point(s) set out in Table 6.3.2 shall not be exceeded.
- 6.3.3 The Operator shall carry out monitoring of the parameters listed in Table 6.3.2, from the emission points and at least at the frequencies specified in that Table.

Table 6.3.2 shall be added:

Table 6.3.2 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements					
Emission point ref. & location	Parameter	Limit (incl. unit)	Reference Period	Monitoring frequency	Monitoring standard or method
W1 (Point at which surface water drainage pipe immediately upstream of the AGI pond leaves the installation boundary (NGR SM 92720 05037))	No parameters set	No Limit Set	-	-	-