

# Notice of variation and consolidation with introductory note

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

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Perenco UK Limited  
Dimlington Gas Terminal  
Dimlington Road  
Easington  
Hull  
HU12 0SU

**Variation application number**

EPR/PP3237CR/V005

**Permit number**

EPR/PP3237CR

# Dimlington Gas Terminal

## Permit number EPR/PP3237CR

### Introductory note

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

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

Schedule 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. All the conditions of the permit have been varied and are subject to the right of appeal.

#### **Purpose of this variation**

##### Review permit conditions

Article 21(3) of the Industrial Emissions Directive (IED) requires the Environment Agency to review conditions in permits that it has issued and to ensure that the permit delivers compliance with relevant standards, within four years of the publication of updated decisions on Best Available Techniques (BAT) Conclusions. We have reviewed the permit for this installation against the revised BAT Conclusions for the Refining of Mineral Oil and Gas industry sector published on 09 October 2014.

We have set improvement conditions to track progress against compliance for BAT Conclusions 6, 49, 51, 55 and 56.

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

#### **The main features of the installation**

The installation comprises two gas terminals, with interconnecting pipelines, located in a rural area near to the village of Easington on the East coast of Yorkshire, just north of Spurn Point. Operations at the two sites are integrated and controlled from the northern terminal (Dimlington), and hence are covered by one permit. Both terminals receive North Sea natural gas to export to the National Transmission System (NTS) and operate 24 hours per day, 365 days per year. The processes involve the physical separation and dehydration of the natural gas, which in its raw state, contains water vapour and light hydrocarbon oils (condensate). There are two other gas terminals nearby.

The Easington terminal was constructed on a greenfield site in the early 1970s and receives partially dried gas via two subsea pipelines (16" and 24") from the West Sole gas fields. Each pipeline is terminated with a sphere receiver. The 16" and 24" pipelines connect into 450 mm diameter pipelines that run between the Easington and Dimlington terminals.

The Dimlington terminal was constructed on a greenfield site and received first gas in 1989. It processes gas from the West Sole gas fields received via the Easington terminal, the North Sea Villages gas fields, and the Amethyst gas fields.

The Amethyst gas is received via a 30" subsea pipeline which is terminated with a sphere receiver located on an adjacent terminal operated by Centrica Storage Limited (Environmental Permit EPR/AP3833LW).

The processing undertaken comprises gas dew-point reduction and stabilisation of condensate. Dew-point reduction and dehydration is achieved by trains using refrigeration (utilising R-134a) and methanol, J-T valve. Electric heaters are used for regeneration of methanol at the methanol distillation unit (MDU) and silica gel systems and for heating Dimlington export gas in the winter.

A thermal oxidation unit is used to abate volatile organic carbon emissions from the methanol regeneration plant. Following processing, the Dimlington gas is metered before export to the NTS.

Condensate is stabilised by heating and off-gases are recovered for return to the process and use as a fuel gas. Stabilised condensate is metered and sent to Saltend. There are condensate storage tanks at Dimlington.

There are a number of ancillary systems, including process monitoring and control, compressed air, nitrogen, fuel gas (Dimlington only), fire water and electricity. There are separate drainage systems at each site for clean water and oily or contaminated water. Each terminal has a flare which is used infrequently for depressurisation prior to planned maintenance. There are also vents used to depressurise sections of plant for maintenance or in the event of an emergency.

Releases to air are combustion products (oxides of nitrogen (NO<sub>x</sub>) carbon dioxide (CO<sub>2</sub>) and carbon monoxide (CO)), predominantly from the compressors, and unburnt hydrocarbons (methane with trace volatile organic compounds (VOCs)). There are some fugitive releases of R-134a refrigerant and hydrocarbons. There are no effluent discharges to water or sewer. Each site intermittently discharges uncontaminated surface water run-off into local drainage ditches, which flow to the Humber estuary.

Dimlington process waste-water is exported offshore via a pipe-line and re-injected into gas reservoirs. The Operator is required to report to the offshore regulator (the Department for Business, Energy & Industrial Strategy BEIS, formerly DECC) the mass of water and the mass of oil re-injected into the reservoir.

Waste materials include produced water (the largest stream), waste-water and wastes arising from maintenance activities, such as oils and scrap metals.

The terminals have an environmental management system which is certified to ISO14001 standards. The Dimlington terminal is a Top Tier COMAH site (Control of Major Accident Hazards).

There is a Site of Special Scientific Interest (SSSI), Dimlington Cliff, within two kilometres of the site and a Natura site, the Humber Estuary, within ten kilometres. An impact assessment has been carried out, and none of the interest features of the sites are adversely affected by the installation.

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.

| <b>Status log of the permit</b>            |                       |   |
|--|-----------------------|---|
| <b>Description</b>                         | <b>Date</b>           | <b>Comments</b>   |
| Application received<br>EPR/QP3133LR/A001  | Duly made<br>28/08/06 |   |
| Additional information received            | 29/03/07              |   |
| Permit determined<br>EPR/QP3133LR          | 27/06/07              |   |
| Variation Application<br>EPR/QP3133LR/V002 | Duly made<br>17/03/08 | Installation of two RB211 turbine driven compressors.   |
| Variation determined<br>EPR/QP3133LR/V002  | 28/03/08              |   |
| Transfer Application<br>EPR/PP3237CR/T001  | Duly made<br>23/07/12 | Application to transfer the permit in full from BP Exploration Operating Company Limited to Perenco UK Limited. (Full transfer of permit EPR/QP3133LR). |
| Transfer determined<br>EPR/PP3237CR        | 08/08/12              | Full transfer of permit. Effective date for transfer 01/11/12.  |

| <b>Status log of the permit</b>  |                       |  |
|--|-----------------------|--|
| <b>Description</b>   | <b>Date</b>           | <b>Comments</b>  |
| Variation Application<br>EPR/PP3237CR/V002   | Duly made<br>15/12/14 | Application to vary the permit for the replacement of the Freon R-22 refrigeration system; and update the Permit to modern conditions.   |
| Variation determined<br>EPR/PP3237CR/V002  | 30/01/15              | Varied and consolidated permit issued in modern condition format.  |
| Regulation 60 Notice sent to the Operator<br>EPR/PP3237CR/V003   | 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 updated to modern conditions. |
| Regulation 60 Notice response  | 01/04/15              | Response received from the Operator.   |
| Additional information received  | 03/06/15              | Response to request for further information (RFI) dated 15/05/15.  |
| Variation determined<br>EPR/PP3237CR/V003<br>(Billing ref: HP3334AU)   | 21/12/15              | Varied and consolidated permit issued in modern condition format.<br>Variation effective from 01/01/16.  |
| Variation Application<br>EPR/PP3237CR/V004   | Duly made<br>19/07/17 | Application to add a discharge to water point for the re-injection of process water into offshore gas reservoirs.<br>Variation and consolidation.  |
| Variation determined<br>EPR/PP3237CR/V004<br>(Billing ref: XP3132YZ)   | 19/09/17              | Varied permit issued.  |
| Regulation 60 Notice dated<br>02/11/15<br><br>(Notice requiring information for statutory review of permit)<br><br>EPR/PP3237CR/V005 | 03/03/16              | Technical standards detailed in response to the information notice.<br><br>Information to demonstrate that relevant BAT conclusions are met for the refining activity.   |
| Request for further information sent<br>06/10/17   | 22/11/17              | Updated technical standards provided in spreadsheet format.<br>Supersedes previous submission.   |
| Request for further information sent<br>09/04/18   | 09/04/18              | Clarification on the use of emission point A19.  |
|  | 10/04/18              | Information in support of BAT 43.  |
| Variation determined<br>EPR/PP3237CR/V005<br>(Billing ref: MP3533DE)   | 15/05/18              | Statutory review of permit - BAT Conclusions published 09 October 2014.<br>Varied and consolidated permit issued.  |

| <b>Other Part A installation permits relating to this installation (Amethyst pipeline connection)</b> |  |                                 |
|---|--|---------------------------------|
| <b>Operator</b>   | <b>Permit number</b>                   | <b>Date of issue</b>            |
| Centrica Storage Limited  | EPR/AP3833LW<br>Easington Gas Terminal | Original permit issued 20/08/07 |

End of introductory note

# Notice of variation and consolidation

## 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/PP3237CR**

### Issued to

**Perenco UK Limited** ("the operator")

whose registered office is

**8 Hanover Square**

**London**

**W1S 1HQ**

company registration number **04653066**

to operate a regulated facility at

**Dimlington Gas Terminal**

**Dimlington Road**

**Easington**

**Hull**

**HU12 0SU**

to the extent set out in the schedules.

The notice shall take effect from 15/05/2018

| Name             | Date       |
|------------------|------------|
| Anne Nightingale | 15/05/2018 |

Authorised on behalf of the Environment Agency

## **Schedule 1**

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

## **Schedule 2 – consolidated permit**

Consolidated permit issued as a separate document.

# Permit

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

### Permit number

**EPR/PP3237CR**

This is the consolidated permit referred to in the variation and consolidation notice for application EPR/PP3237CR/V005 authorising,

**Perenco UK Limited** (“the operator”),

whose registered office is

**8 Hanover Square**

**London**

**W1S 1HQ**

company registration number **04653066**

to operate an installation at

**Dimlington Gas Terminal**

**Dimlington Road**

**Easington**

**Hull**

**HU12 0SU**

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

| Name             | Date       |
|------------------|------------|
| Anne Nightingale | 15/05/2018 |

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) review and record at least every four years whether there are suitable opportunities to improve the energy efficiency of the activities; and
  - (c) 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 427 and LCP 459. Without prejudice to condition 2.3.1, the activities shall be operated in accordance with the “Electricity Supply Industry IED Compliance Protocol for Utility Boilers and Gas Turbines” revision 1 dated December 2015 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 activities referenced in schedule 1, table S1.1: LCP 427 and LCP 459. The end of the start-up period and the start of the shut-down period shall conform to the specifications set out in Schedule 1, tables S1.2 and S1.4.

2.3.6 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.

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

### **2.4 Improvement programme**

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

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

## **3 Emissions and monitoring**

### **3.1 Emissions to water, air or land**

- 3.1.1 There shall be no point source emissions to water, air or land except from the sources and emission points listed in schedule 3 tables S3.1 and S3.2.
- 3.1.2 The limits given in schedule 3 shall not be exceeded.
- 3.1.3 Periodic monitoring shall be carried out at least once every 5 years for groundwater and 10 years for soil, unless such monitoring is based on a systematic appraisal of the risk of contamination.

### **3.2 Emissions of substances not controlled by emission limits**

- 3.2.1 Emissions of substances not controlled by emission limits (excluding odour) shall not cause pollution. The operator shall not be taken to have breached this condition if appropriate measures, including, but not limited to, those specified in any approved emissions management plan, have been taken to prevent or where that is not practicable, to minimise, those emissions.
- 3.2.2 The operator shall:
  - (a) if notified by the Environment Agency that the activities are giving rise to pollution, submit to the Environment Agency for approval within the period specified, an emissions management plan which identifies and minimises the risks of pollution from emissions of substances not controlled by emission limits;
  - (b) implement the approved emissions management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.
- 3.2.3 All liquids in containers, whose emission to water or land could cause pollution, shall be provided with secondary containment, unless the operator has used other appropriate measures to prevent or where that is not practicable, to minimise, leakage and spillage from the primary container.

### **3.3 Odour**

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

### **3.4 Noise and vibration**

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

### **3.5 Monitoring**

- 3.5.1 The operator shall, unless otherwise agreed in writing by the Environment Agency, undertake the monitoring specified in the following tables in schedule 3 to this permit:
- (a) point source emissions specified in tables S3.1 and S3.2.
- 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 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.
- 3.6.3 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.

## 4 Information

### 4.1 Records

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

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

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

### 4.2 Reporting

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

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

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

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

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

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

## 4.3 Notifications

### 4.3.1 In the event:

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

4.3.2 Any information provided under condition 4.3.1 (a)(i), 4.3.1 (b)(i) where the information relates to the breach of a condition specified in the permit, 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.

In any other case:

- (e) the death of any of the named operators (where the operator consists of more than one named individual);
- (f) any change in the operator's name(s) or address(es); and
- (g) any steps taken with a view to the operator, or any one of them, going into bankruptcy, entering into a composition or arrangement with creditors, or, in the case of them being in a partnership, dissolving the partnership.

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

- (a) the Environment Agency shall be notified at least 14 days before making the change; and
- (b) the notification shall contain a description of the proposed change in operation.

4.3.6 The Environment Agency shall be given at least 14 days notice before implementation of any part of the site closure plan.

4.3.7 Where the operator has entered into a climate change agreement with the Government, the Environment Agency shall be notified within one month of:

- (a) a decision by the Secretary of State not to re-certify the agreement;
- (b) a decision by either the operator or the Secretary of State to terminate the agreement; and
- (c) any subsequent decision by the Secretary of State to re-certify such an agreement.

4.3.8 The operator shall inform the Environment Agency in writing of the closure of any LCP within 28 days of the date of closure.

## **4.4 Interpretation**

4.4.1 In this permit the expressions listed in schedule 6 shall have the meaning given in that schedule.

4.4.2 In this permit references to reports and notifications mean written reports and notifications, except where reference is made to notification being made "immediately", in which case it may be provided by telephone.

# Schedule 1 – Operations

| <b>Table S1.1 Activities</b>        |  |  |   |
|-------------------------------------|--|--|---|
| <b>Activity reference</b>           | <b>Activity listed in Schedule 1 of the EP Regulations</b>   | <b>Description of specified activity</b>   | <b>Limits of specified activity</b>   |
| AR1                                 | <p><b>Section 1.2 Part A(1)(a)</b><br/> <b>Primary activity</b><br/>                     Refining gas where this is likely to involve the use of 1,000 or more tonnes of gas in any 12 month period.</p> | Refining natural gas from the West Sole gas fields, Amethyst gas fields and North Sea Villages complex.  | From receipt of natural gas fluids and raw materials to dispatch of treated gas, condensate and wastes.   |
| AR2                                 | <p><b>Section 1.2 Part A(1)(e)(i)</b><br/>                     The loading, unloading, handling or storage of, or the physical, chemical or thermal treatment of crude oil.</p>                          | Condensate treatment and storage – storage and stabilisation of raw condensate.  | From treatment of raw condensate to storage and dispatch of stabilised condensate.  |
| AR3                                 | <p><b>Section 1.1 Part A(1)(a)</b><br/>                     Burning any fuel in an appliance with a rated thermal input of 50 megawatts or more.</p>   | <p><b>LCP 427</b><br/>                     80.3 MWth - Open cycle gas turbine 1 (OCGT1) for the purpose of compressing natural gas.</p> <p><b>LCP 459</b><br/>                     80.3 MWth - OCGT2 for the purpose of compressing natural gas.</p> | From receipt of fuels and raw materials to release of combustion products to air (emission points A22 and A23 in Table S3.1 of this permit), dispatch of products and wastes. |
| <b>Directly Associated Activity</b> |  |  |   |
| AR4                                 | Directly associated activity   | Utility and service systems - utility systems including process monitoring and control, compressed air, nitrogen, fuel gas, fire water and electricity, including back-up supply.  | Utilities and services systems within the Installation boundary.  |
| AR5                                 | Directly associated activity   | Drainage systems - surface water, oily water and process drainage systems.   | Handling and storage of site drainage and effluent until discharge off-site.  |



| <b>Table S1.1 Activities</b> |  |  |  |
|------------------------------|--|--|--|
| <b>Activity reference</b>    | <b>Activity listed in Schedule 1 of the EP Regulations</b> | <b>Description of specified activity</b>                                 | <b>Limits of specified activity</b>  |
| AR6                          | Directly associated activity                               | Pumping of process waters offshore for re-injection into gas reservoirs. | From the collection of process water at the Dimlington Site and pumping it to the Easington Site and increasing the pressure to transport the water offshore for re-injection into gas reservoirs. |

| <b>Table S1.2 Operating techniques</b>  |   |                      |
|---|---|----------------------|
| <b>Description</b>  | <b>Parts</b>  | <b>Date Received</b> |
| Application<br>EPR/QP3133LR/A001  | The response to sections 2.1 and 2.2 which are given in sections 3.1 – 4.6 inclusive of the Application.  | 28/08/06             |
| Response to request for further information, dated 06/03/07   | Response to questions 1 – 5, relating to section 4.1 of the Application; emissions to air.  | 29/03/07             |
| Variation application<br>EPR/QP3133LR/V002  | All parts   | 17/03/08             |
| Variation application<br>EPR/PP3237CR/V002  | The response to question 3 Operating techniques, given in Part C3 of the variation application form.<br>Includes Table 3a – Technical Standards.<br><br>Application Supporting Information (Document Dim-FRP-VAR-001).<br>BAT Assessment Report (Ref: 7600-0180-075-03-003-001 REV 0).  | 15/12/14             |
| Response to regulation 60(1) Notice – request for information dated 31/10/14<br>EPR/PP3237CR/V003                         | Compliance route and operating techniques identified in response to questions 2 (compliance route), 4 (type of combustion unit), 5 (thermal input), 6 (minimum start-up load and minimum shut-down load), 9 (proposed ELVs and BAT), and 11 (monitoring requirements).  | 01/04/15             |
| Receipt of additional information to the regulation 60(1) Notice. requested by letter dated 15/05/15<br>EPR/PP3237CR/V003 | Responses to questions:<br>1 (the method which the net rated thermal input of each LCP was derived);<br>2 (details of how the MSUL and MSDL were derived);<br>3.1 (confirmation of the correct MSUL and MSDL output);<br>3.2 (details of how the ELVs were derived);<br>3.3 (a CO ELV between 70% and 80% load); and<br>4 (details of the SO <sub>x</sub> and dust monitoring). | 03/06/15             |

| <b>Table S1.2 Operating techniques</b>  |  |                      |
|---|--|----------------------|
| <b>Description</b>  | <b>Parts</b>   | <b>Date Received</b> |
| Variation application EPR/PP3237CR/V004   | The response to question 3 Operating techniques, given in Part C3 of the variation application form.<br>Additional information received – ODE Document number 80556-0001-AY-B-001 Operating Philosophy.  | 19/07/17             |
| Email from Terminal Manager dated 12/10/17 titled 'Easington Decommissioning plan'  | Attachment titled 'ET Plot plan Deconstruct' containing a copy of plan 580-104609 revision 2.  | 12/10/17             |
| Receipt of information to the regulation 60(1) Notice. Initial request by letter dated 02/11/15 and final request by email sent 06/10/17<br>EPR/PP3237CR/V005 | Technical standards detailed in response to BAT conclusions of the notice provided under Regulation 60 of Environmental Permitting Regulations.<br>Best available techniques as described in BAT conclusions under Directive 2010/75/EU of the European Parliament and of the Council on industrial emissions for the refining of mineral oil and gas. | 22/11/17             |

| <b>Table S1.3 Improvement programme requirements</b> |   |             |
|--|---|-------------|
| <b>Reference</b>                                     | <b>Requirement</b>  | <b>Date</b> |
| IC1  | A written Site Closure Plan shall be prepared in accordance with Section 2.11 of TGN S1.02. Upon completion of the Plan, a summary of the document 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 plan summary.  | Complete    |
| IC2  | An energy efficiency plan shall be submitted to the Agency, detailing the energy management techniques relevant to the installation. The plan shall be produced in accordance with TGN IPPC H2 on Energy Efficiency. Where appropriate the plan shall contain dates for the implementation of individual measures. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the plan.<br>The plan shall be implemented by the operator from the date of approval in writing by the Agency.  | Complete    |
| IC3  | A written report shall be submitted to the Environment Agency detailing the results of a study into the treatment of produced water and other effluent onsite, and its disposal by a sea outfall up to twelve miles offshore to replace disposal by tankering offsite. The report shall take into account BAT and include dispersion modelling to assess the potential impact of the discharge on the marine environment. Where appropriate, the report shall contain dates for the implementation of measures. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the report. The measures shall be implemented by the operator from the date of approval by the Agency. | Complete    |

| <b>Table S1.3 Improvement programme requirements</b> |  |   |
|--|--|---|
| <b>Reference</b>                                     | <b>Requirement</b>   | <b>Date</b>   |
| IC4  | <p>A written plan shall be submitted to the Agency for approval detailing the results of a survey of hard-standing, kerbing, below-ground drainage and secondary containment for raw material, intermediate, product and waste storage areas and the measures to comply with the requirements of section 2.2.5 of TGN S 1.02. Where appropriate the plan shall contain dates for the implementation of individual measures. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the plan.</p> <p>The plan shall be implemented by the operator from the date of approval by the Agency.</p> | Complete  |
| IC5  | <p>A written plan shall be submitted to the Agency for approval detailing the outcome of a review of options for reduction of NOx emissions. The review shall take consideration of current BAT. The plan shall contain dates for implementation of measures to reduce NOx emissions. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the plan.</p> <p>The plan shall be implemented by the operator from the date of approval by the Agency.</p>   | Complete  |
| IC6  | <p>A written plan shall be submitted to the Agency for approval detailing the results of an options review and front end engineering design evaluation for replacement of HCFC-R22 (Freon) in the Hydrocarbon Dewpoint Reduction Units by 2010. The review shall take account of BAT as given in SGN IPPC S1.02. Where appropriate the plan shall contain dates for the implementation of measures. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the plan.</p> <p>The plan shall be implemented by the operator from the date of approval by the Agency.</p>                         | Complete  |
| IC7  | <p>The Operator shall submit in writing to the Agency for approval, details of the method for the determination of particulate matter and sulphur dioxide released from emission points A22 and A23 including details of the verification of the suitability of such a method. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the plan.</p>  | Complete  |
| IC8  | <p>The Operator shall submit a written report to the Environment Agency on the commissioning of the R-134a based refrigeration plant. The report shall summarise the environmental performance of the plant as installed against the design parameters set out in the Application. The report shall also include a review of the performance of the plant against the conditions of this permit and details of procedures developed during commissioning for achieving and demonstrating compliance with permit conditions.</p>  | Within 4 months of the completion of commissioning of the R-134a based system |

| Table S1.3 Improvement programme requirements |  |          |
|---|--|----------|
| Reference                                     | Requirement  | Date     |
| IC9   | <p>The Operator shall undertake a noise assessment in accordance with the procedures given in BS4142: 2014 (Rating industrial noise affecting mixed residential and industrial areas) and BS7445: 2003 (Description and measurement of environmental noise) or other methodology as agreed with the Environment Agency. Any noise source(s) identified as exhibiting tonal contributions shall be quantified by means of frequency analysis. Noise measurements shall be undertaken by an experienced and suitably qualified person.</p> <p>A written report shall be submitted to the Environment Agency detailing a comparison of the results against the predicted noise emissions.</p> <p>Should the report indicate that noise complaints are likely, a report shall be submitted detailing investigations and measures to be implemented to reduce noise emissions to a level not likely to generate complaints.</p> | Complete |
| IC10  | <p>The Operator shall undertake an assessment of the impacts of carbon monoxide emissions, at 670 mg/m<sup>3</sup>, 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>  | Complete |
| IC11  | <p>For LCP 427 and LCP 459 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. If the LPCD LCP was a NERP plant the final quarter submissions shall be provided on the RTA 1 form to the NERP Registry.</p>   | Complete |
| IC12  | <p><u>BAT Conclusion 6</u></p> <p>The Operator shall submit a diffuse volatile organic compounds (VOCs) monitoring plan to the Environment Agency for written approval. This shall include but not necessarily be limited to:</p> <ul style="list-style-type: none"> <li>• The nature of the material handled;</li> <li>• The sources of emissions and associated risks;</li> <li>• Justification of the monitoring techniques selected (e.g. sniffing, optical gas imaging, calculation); and</li> <li>• How the monitoring data will be recorded and reviewed.</li> </ul> <p>The plan shall take into account the appropriate techniques for VOC monitoring specified in BAT Conclusion 6 for the Refining of Mineral Oil and Gas.</p> <p>The Operator shall implement the approved plan and produce and submit an annual report on the results of the monitoring undertaken under the plan.</p>                         | 28/10/18 |

| <b>Table S1.3 Improvement programme requirements</b> |   |             |
|--|---|-------------|
| <b>Reference</b>                                     | <b>Requirement</b>  | <b>Date</b> |
| IC13   | <p><u>BAT Conclusion 49</u></p> <p>The Operator shall undertake an assessment of measures to reduce point source and fugitive emissions of VOCs from the storage of liquid hydrocarbons. The assessment shall take into account the techniques identified in BAT Conclusion 49 for the Refining of Mineral Oil and Gas, together with any other suitable reduction techniques.</p> <p>A written report summarising the findings shall be submitted to the Environment Agency, along with a timetable for implementing improvements. The Operator shall implement the improvements identified to a timetable agreed with the Environment Agency.</p>   | 28/10/18    |
| IC14   | <p><u>BAT Conclusion 51</u></p> <p>The Operator shall review all secondary containment measures, provided for liquid hydrocarbons that are stored or held on site, (excluding those bunds in scope of the COMAH Containment Policy). The review shall verify whether all storage tanks and areas designed for the storage of drums/IBCs and other portable liquid containers, within the installation; are sited on an impermeable base and with sufficient bunding as specified in the CIRIA C736 Guidance.</p> <p>Where containment provisions do not meet this standard, the Operator shall identify improvements, or alternative measures (such as additional primary or tertiary containment measures) to provide an equivalent level of protection.</p> <p>The Operator shall provide the Environment Agency with a written report of the review and shall implement identified improvements to a timescale agreed with the Environment Agency.</p> | 28/10/18    |

| Table S1.3 Improvement programme requirements |  |          |
|---|--|----------|
| Reference                                     | Requirement  | Date     |
| IC15  | <p><u>BAT Conclusions 55 &amp; 56</u></p> <p>The Operator shall submit a written gas management improvement plan to the Environment Agency for approval, which shall include, but not necessarily be limited to:</p> <ul style="list-style-type: none"> <li>• Identification of all gas vented from the installation;</li> <li>• Maximum quantity of gas released from each vent source (and how this measured) during each type of event, over three years or a representative period of operation;</li> <li>• The feasibility of recovering, reducing and/or treating the gas vented, including cost benefit analysis, of all available options to minimise environmental impacts as far as practicable. Options shall include, but not necessarily be limited to: <ul style="list-style-type: none"> <li>- Vapour recovery;</li> <li>- Scrubbing;</li> <li>- Adsorption; and</li> <li>- Flaring.</li> </ul> </li> </ul> <p>The plan shall contain dates for the implementation of any improvement measures identified.</p> <p>The plan shall be implemented in accordance with the Environment Agency's written approval.</p> | 30/11/18 |
| IC16  | <p>The Operator shall destruct all electrical &amp; instrumentation (E&amp;I) cabling and instrumentation from vessels and tanks in Area 2 (Area 2 containing MEG tanks, condensate separator and water tanks, identified by sheet 2 on plan 580-104609 revision 2, as listed in Table S1.2 of this permit).</p> <p>The Operator shall complete final verification of positive isolation and complete preparation for dismantling in Area 2.</p> <p>The Operator shall physically remove all ancillary equipment and pipework in Area 2. Bulk vessels and tanks shall be cleaned and decontaminated and then left in place or removed.</p> <p>The Operator shall provide written confirmation to the Environment Agency on completion.</p>   | 31/12/18 |
| IC17  | <p>The Operator shall complete physical dismantling and demolition of all above ground structures and equipment in Areas 3 &amp; 4.</p> <p>The Operator shall provide written confirmation to the Environment Agency on completion.</p>  | 28/02/19 |

| <b>Table S1.3 Improvement programme requirements</b> |   |             |
|--|---|-------------|
| <b>Reference</b>                                     | <b>Requirement</b>  | <b>Date</b> |
| IC18   | <p>The Operator shall complete engineering to enable migration of all live process equipment (including fire &amp; gas (F&amp;G), emergency shut-down (ESD), and power supply) from existing control building into a new location in Area 1 (Area 1 containing the control building, identified by sheet 1 on plan 580-104609 revision 2 as listed in Table S1.2 of this permit).</p> <p>The Operator shall submit a proposed timetable for completion of migration of live process equipment from the existing control building to a new location.</p> <p>The Operator shall provide written confirmation to the Environment Agency on completion.</p> | 31/12/19    |
| IC19   | <p>The Operator shall submit a proposed timetable for the removal of decommissioned equipment in the areas identified by sheets 5, 6, 7, 8 &amp; 9 on plan 580-104609 revision 2 as listed in Table S1.2 of this permit.</p> <p>The Operator shall submit a proposed timetable for completion of decommissioning and removal of any remaining redundant equipment in Areas 1, 2, 3 &amp; 4.</p>   | 30/09/19    |

| <b>Table S1.4 Start-up and Shut-down thresholds</b> |  |   |
|---|--|---|
| <b>Emission Point and Unit Reference</b>            | <b>“Minimum Start-Up Load”<br/>Load in MW and as percent of rated power output (%)</b> | <b>“Minimum Shut-Down Load”<br/>Load in MW and as percent of rated power output (%)</b> |
| A22<br><b>LCP 427</b><br>OCGT1 Unit A               | 14 MW N3 shaft output (43.75% of rated power output)                                   | 14 MW N3 shaft output (43.75% of rated power output)                                    |
| A23<br><b>LCP 459</b><br>OCGT2 Unit B               | 14 MW N3 shaft output (43.75% of rated power output)                                   | 14 MW N3 shaft output (43.75% of rated power output)                                    |

## Schedule 2 – Waste types, raw materials and fuels

| Table S2.1 Raw materials and fuels |               |
|------------------------------------|---------------|
| Raw materials and fuel description | Specification |
| ---                                | ---           |



## 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          |
| A4<br>[Ref EA10a in Application QP3133LR]                                     | Easington emergency site vent (cold venting)  | No parameter set | No limit set   | -                | -                    | Permanent sampling access not required |
| A6<br>[Ref EA14a in Application QP3133LR]                                     | Easington sphere receiver vent – 24" line   | No parameter set | No limit set   | -                | -                    | Permanent sampling access not required |
| A7<br>[Ref EA14b in Application QP3133LR]                                     | Easington sphere receiver vent – 16" line   | No parameter set | No limit set   | -                | -                    | Permanent sampling access not required |
| A16<br>[Dimlington Emission Points plan provided with EPR/PP3237CR/V002]      | Thermox unit (vapours from methanol distillation unit (MDU) and methanol storage tanks) | Benzene          | 1 mg/m <sup>3</sup>  | Hourly mean      | Annually             | BS CEN/TS 13649                        |
|   |   | Methanol         | 2 mg/m <sup>3</sup>  |                  |                      |  |
| A17 & A18<br>[Dimlington Emission Points plan provided with EPR/PP3237C/V002] | MDU vents (cold venting)  | No parameter set | No limit set   | -                | -                    | Note 1                                 |

| <b>Table S3.1 Point source emissions to air</b>                               |  |   |   |                              |                             |   |             |
|---|--|---|---|------------------------------|-----------------------------|---|-------------|
| <b>Emission point ref. &amp; location</b>                                     | <b>Source</b>  | <b>Parameter</b>  | <b>Limit (including unit)-these limits do not apply during start up or shut down.</b> | <b>Reference Period</b>      | <b>Monitoring frequency</b> | <b>Monitoring standard or method</b>                              |             |
| A19<br>[Dimlington Emission Points plan provided with EPR/PP3237CR/V002]      | Operational and emergency cold venting   | No parameter set  | No limit set  | -                            | -                           | Permanent sampling access not required                            |             |
| A20<br>[Dimlington Emission Points plan provided with EPR/PP3237CR/V002]      | Dimlington sphere receiver vent  | No parameter set  | No limit set  | -                            | -                           | Permanent sampling access not required                            |             |
| A21<br>[Dimlington Emission Points plan provided with EPR/PP3237CR/V002]      | Dimlington flare   | No parameter set  | No limit set  | -                            | -                           | Permanent sampling access not required                            |             |
| A22, A23<br>[Dimlington Emission Points plan provided with EPR/PP3237CR/V002] | <b>LCP 427 &amp; LCP 459</b><br>RB211<br>Gas turbine compressor, Unit A and Unit B, fired on natural gas | Oxides of nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> ) | 60 mg/m <sup>3</sup><br>70% to base load <sup>Note 2</sup>                            | Average over sampling period | At least every 6 months     | BS EN 14792   |             |
|   |  |   | 60 mg/m <sup>3</sup><br>MSUL/MSDL to base load <sup>Note 3</sup>                      |                              |                             |   |             |
|   | <b>LCP 427 &amp; LCP 459</b><br>RB211<br>Gas turbine compressor, Unit A and Unit B, fired on natural gas | Carbon monoxide   | 110 mg/m <sup>3</sup><br>70% to base load <sup>Note 2</sup>                           |                              |                             | 670 mg/m <sup>3</sup><br>MSUL/MSDL to base load <sup>Note 3</sup> | BS EN 15058 |
|   |  |   |   |                              |                             |   |             |

| <b>Table S3.1 Point source emissions to air</b>   |  |   |   |                         |  |  |
|---|--|---|---|-------------------------|--|--|
| <b>Emission point ref. &amp; location</b>   | <b>Source</b>  | <b>Parameter</b>  | <b>Limit (including unit)-these limits do not apply during start up or shut down.</b> | <b>Reference Period</b> | <b>Monitoring frequency</b>  | <b>Monitoring standard or method</b>   |
| A22, A23<br>[Dimlington Emission Points plan provided with EPR/PP3237CR/V002]   | <b>LCP 427 &amp; LCP 459</b><br>RB211<br>Gas turbine compressor, Unit A and Unit B, fired on natural gas | Sulphur dioxide   | -   | -                       | At least every 6 months  | Concentration by calculation, as agreed in writing with the Environment Agency |
| A22, A23<br>[Dimlington Emission Points plan provided with EPR/PP3237CR/V002]   | <b>LCP 427 &amp; LCP 459</b><br>RB211<br>Gas turbine compressor, Unit A and Unit B, fired on natural gas | Oxygen  | -   | -                       | Periodic as appropriate to reference                               | BS EN 14789  |
|   |  | Water vapour  | -   | -                       | Periodic 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  |
| <p>Note 1: MDU vents shall only be used when the Thermox is unavailable due to breakdown/maintenance, and for a maximum period of 48 hours per year. The Environment Agency shall be notified of any venting likely to exceed 24 hours with a plan for reinstatement of the MDU.</p> <p>Note 2: This ELV applies where the load is &gt;70% for the duration of the sampling period.</p> <p>Note 3: This limit applies where the load varies between MSUL/MSDL and base load during the sampling period. MSUL and MSDL are defined in table S1.4 of this permit.</p> |  |   |   |                         |  |  |

| <b>Table S3.2 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements</b>  |   |                  |                           |                         |                             |  |
|--|---|------------------|---------------------------|-------------------------|-----------------------------|--|
| <b>Emission point ref. &amp; location</b>  | <b>Source</b>                                     | <b>Parameter</b> | <b>Limit (incl. unit)</b> | <b>Reference period</b> | <b>Monitoring frequency</b> | <b>Monitoring standard or method</b>   |
| W1<br>[Ref EW1 in Application QP3133LR] emission to River Humber via land drainage ditch   | Uncontaminated surface run-off via Firewater pond | No parameter     | No limit set              | -                       | -                           | Permanent sampling access not required |
| W2<br>[Dimlington Emission Points plan provided with EPR/PP3237CR/V002] emission to River Humber via land drainage ditch   | Uncontaminated surface run-off via Firewater pond | No parameter     | No limit set              | -                       | -                           | Permanent sampling access not required |
| W3<br>Dimlington pumping location provided with EPR/PP3237CR/V004 low pressure line to Easington Site where high pressure line transports offshore.  | Process waters <sup>Note 1</sup>                  | No parameter     | No limit set              | -                       | -                           | -                                      |
| Note 1: The Operator is required to report to the offshore regulator (the Department for Business, Energy & Industrial Strategy BEIS, formerly DECC) the mass of water and the mass of oil re-injected into the reservoir. |   |                  |                           |                         |                             |  |

| <b>Table S3.3 Annual limits</b> |               |  |
|---------------------------------|---------------|--|
| <b>Substance</b>                | <b>Medium</b> | <b>Limit (including unit)</b>              |
| Oxides of nitrogen              | Air           | 240,000 kg (as NO <sub>2</sub> ) in a year |
| Unburned hydrocarbons           | Air           | 450,000 kg in a year                       |
| Benzene                         | Air           | 700 kg in a year                           |

## Schedule 4 – Reporting

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

| Parameter          | Emission or monitoring point/reference | Reporting period                       | Period begins     |
|--------------------|--|--|-------------------|
| Benzene            | A16                                    | Every 12 months                        | 1 January         |
| Methanol           | A16                                    | Every 12 months                        | 1 January         |
| Oxides of nitrogen | A22, A23                               | Every 6 months for periodic monitoring | 1 January, 1 July |
| Carbon monoxide    | A22, A23                               | Every 6 months for periodic monitoring | 1 January, 1 July |
| Sulphur dioxide    | A22, A23                               | Every 6 months for periodic monitoring | 1 January, 1 July |

| Parameter  | Units |
|--|-------|
| 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     |

| Parameter  | Frequency of assessment | Units |
|--|-------------------------|-------|
| <b>Reporting to DEFRA</b>                              |                         |       |
| Thermal Input Capacity for each LCP                    | Annually                | MW    |
| Annual Fuel Usage for each LCP                         | Annually                | TJ    |
| Total Emissions to Air of NO <sub>x</sub> for each LCP | Annually                | t     |
| Total Emissions to Air of SO <sub>2</sub> for each LCP | Annually                | t     |
| Total Emissions to Air of dust for each LCP            | Annually                | t     |
| Operating Hours for each LCP (load factor)             | Annually                | hr    |
| <b>Other Performance parameters</b>                    |                         |       |
| Unburned hydrocarbons lost as % of gas exported        | Annually                | %     |
| Thermox availability                                   | Annually                | %     |

| <b>Table S4.3 Chapter III Performance parameters for reporting to DEFRA and other Performance parameters</b> |                                |   |
|--|--------------------------------|---|
| <b>Parameter</b>   | <b>Frequency of assessment</b> | <b>Units</b>  |
| Primary carbon dioxide production  | Annually                       | Tonnes/million Sm <sup>3</sup> gas exported<br>Note 1   |
| Benzene and methanol emissions   | Annually                       | kg  |
| Energy consumption   | Annually                       | MWh/million Sm <sup>3</sup> gas exported<br>Note 1  |
| Natural gas exported   | Annually                       | kg and Sm <sup>3</sup><br>Note 1  |
| Cold vent usage<br>emission points A4 & A19  | Annually                       | Cumulative quantity of gas vented (kg and Sm <sup>3</sup> ) during “normal operation” for current calendar year.<br>Note 1  |
|  |                                | Number, cause and cumulative quantity of gas vented (kg and Sm <sup>3</sup> ) during “other than normal operating conditions” and action taken to minimise duration and impact for current calendar year.<br>Note 1 |
| MDU vent usage<br>emissions points A17 & A18   | Annually                       | Number of occasions, cumulative hours (max 48 hours per year) and cumulative quantity of gas vented (kg and Sm <sup>3</sup> ) for current calendar year.<br>Note 1  |
| Flare usage<br>emission point A21  | Annually                       | Number of occasions and cumulative quantity of gas flared (prior to combustion) (kg and Sm <sup>3</sup> ) during “normal” operation for current calendar year.<br>Note 1  |

Note 1: Standard temperature and pressure 15°C and 1.01325 BarA (dry)

| <b>Table S4.4 Reporting forms</b> |  |                       |                             |  |
|-----------------------------------|--|-----------------------|-----------------------------|--|
| <b>Media/<br/>parameter</b>       | <b>Reporting format</b>  | <b>Starting Point</b> | <b>Agency<br/>recipient</b> | <b>Date of form</b>                    |
| LCP                               | Form IED HR1 – operating hours   | 01/01/16              | National                    | As specified by the Environment Agency |
| Air & energy                      | Form IED AR1 – SO <sub>2</sub> , NO <sub>x</sub> and dust mass emission and energy | 01/01/16              | National                    | As specified by the Environment Agency |
| Air                               | Form IED PM1 - discontinuous monitoring and load                                   | 01/01/16              | Area Office                 | As specified by the Environment Agency |
| Resource efficiency               | Form REM1– resource efficiency annual report                                       | 01/01/16              | National                    | As specified by the Environment Agency |
| Air                               | Form Air 1   | 01/01/18              | Area Office                 | 2018                                   |
| Other performance indicators      | Form Performance 1 or other form as agreed in writing by the Environment Agency    | 01/01/18              | Area Office                 | 2018                                   |

# 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 |  |

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



|   |                     |
|---|---------------------|
| <b>(b) Notification requirements for the breach of a limit</b>                      |                     |
| <b>To be notified within 24 hours of detection unless otherwise specified below</b> |                     |
| 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 |
|   |                     |
|   |                     |
|   |                     |

|  |  |
|--|--|
| <b>(c) Notification requirements for the detection of any significant adverse environmental effect</b> |  |
| <b>To be notified within 24 hours of detection</b>   |  |
| 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.  |  |

|                  |  |
|------------------|--|
| <b>Name*</b>     |  |
| <b>Post</b>      |  |
| <b>Signature</b> |  |
| <b>Date</b>      |  |

\* authorised to sign on behalf of the operator

## Schedule 6 – Interpretation

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

“annually” means once a year.

“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.

“BAT” means Best available techniques, as defined in Article 3 of the Industrial Emissions Directive.

“BAT AEL” means the achievable emission level associated with application of the best available techniques.

“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<sub>x</sub> burners.

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

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

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

“low polluting fuels” means biomass or coal with an average as-received sulphur content of less than 0.4% by mass as described 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.

“Normal operation” means the range of process conditions that can occur when a process unit is performing its intended duty.

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

“Other than normal operating conditions” means process conditions that would not occur during the normal operation of a process unit.

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

“The BREF” means the BAT Reference Document for the Refining of Mineral Oil and Gas published by the European commission 2014/738/EU.

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

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

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

“year” means calendar year ending 31 December.

# Schedule 7 – Site plan

Subject to National Security.

END OF PERMIT