



**ENVIRONMENT  
AGENCY**

## **Permit with introductory note**

**Pollution Prevention and Control (England & Wales) Regulations 2000**

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**Connah's Quay Power Station**

**E.ON UK plc  
Kelsterton Road  
Connah's Quay  
Deeside  
Flintshire  
CH5 4BP**

**Permit number**

**MP3337SH**

# CONNAH'S QUAY POWER STATION

## Permit Number MP3337SH

### Introductory note

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

A non-technical description of the installation is given in the Application, but the main features of the installation are as follows.

The power station is located on the banks of the Dee Estuary in Connah's Quay, North Wales and is currently owned and operated by E.ON UK Ltd. The installation consists of a gas treatment plant and four combined cycle gas turbines (CCGT's) providing 1426MW of electricity exported to the National Grid. Gas is delivered to the installation from the BHP Petroleum Gas Terminal at the Point of Ayr. The gas is mainly burned in the gas turbines to produce electricity, however the excess gas supplied may also be processed in the gas treatment plant to produce a gas of suitable quality for its export to the National Grid.

The power station comprises four single shaft (rigidly coupled gas turbine, steam turbine and generator) combined cycle power units. Each gas turbine exhausts directly to a heat recovery steam generator (HRSG) - or boiler, which supplies a steam turbine comprising separate high, intermediate and low pressure cylinders. The combined cycle total guaranteed gross output is 363MWe. The four turbines are fitted with dry low NOx control. Exhaust steam is condensed back to water and fed back to the HRSG for re-use. Water abstracted from the River Dee is used to cool the condenser. The cooling water is circulated through low level hybrid cooling towers, where the heat is rejected to atmosphere via conduction, convection and evaporation.

The gas treatment plant is located in the north west part of the installation and treats the gas entering from the Point of Ayr terminal the purpose of which is to remove moisture, contaminants and drive off nitrogen through chilling to leave methane. The activity is technically connected to the combustion activity. The activity consists of a pre-treatment section with gas metering, molecular sieve absorbers to remove moisture, and a mercury removal vessel to protect the equipment from traces of mercury. The nitrogen rejection unit reduces the nitrogen concentration of the gas to about 5%. The rejected nitrogen is made harmless by passing through a thermal oxidiser. When the molecular sieves are saturated with moisture they are regenerated by heating the rejected nitrogen stream in a natural draught gas fired heater and passing the hot gas back through the molecular sieves. This off-gas is passed through the thermal oxidiser. The gas pressure is then raised by compressors before it enters the gas turbines or the national transmission system.

The Operator's Environmental Management System is externally certified to ISO 14001 and the installation (as a CCGT) are not eligible to take part in Climate Change Agreement (CCA) or direct Participant Agreement (DPA), however they do take part in the EU ETS (Emissions Trading Scheme). The choice of natural gas as a fuel represents Best Available Techniques (BAT) for generation of electricity in industrial gas turbines.

The main emissions are oxides of nitrogen to air from the four emissions points from the gas turbines, and the purge pond outlet to the River Dee.

**Status Log of the permit**

<b>Detail</b>	<b>Date</b>	<b>Response Date</b>
Application MP3337SH	Duly made 17/03/06	
Additional Information Received (Schedule 4 response)		26/10/06
Supplementary Information	20/11/06	20/11/06
Supplementary Information (email)	12/01/07	12/01/07
Permit determined	09/02/07	

**Other PPC permits relating to this installation**

<b>Operator</b>	<b>Permit Number</b>	<b>Date of Issue</b>
None		

**Superseded or Partially Superseded Licences/Authorisations/Consents relating to this installation**

<b>Holder</b>	<b>Reference Number</b>	<b>Date of Issue</b>	<b>Fully or Partially Superseded</b>
Powergen (Connah's Quay Power Station) and all subsequent variations	AP5790	14/08/95	Fully superseded
Powergen PLC (Connah's Quay Gas Treatment Plant) and all subsequent variations	AU0198	29/04/96	Fully superseded

**Other existing Licences/Authorisations/Registrations relating to this site**

<b>Holder</b>	<b>Reference Number</b>	<b>Date of Issue</b>
E_ON UK Ltd, Westwood Way, Westwood Business Park, Coventry, CV4 8LG	24/67/10/124/E ver 1 (Licence to abstract water)	25/10/1996
E_ON UK Ltd, Westwood Way, Westwood Business Park, Coventry, CV4 8LG	24/67/10/124/E ver 2 (Licence to abstract water)	03/01/2007

End of Introductory Note

**Permit**

Pollution Prevention and Control  
(England and Wales) Regulations 2000

## Permit

Permit number

**MP3337SH**

The Environment Agency (the Agency) in exercise of its powers under Regulation 10 of the Pollution Prevention and Control (England and Wales) Regulations 2000 (SI 2000 No 1973) hereby authorises

**E.ON UK plc** ("the operator"),

whose registered office is

**Westwood Way  
Westwood Business Park  
Coventry  
CV4 8LG**

company registration number **02366970**

to operate an installation at

**Kelsterton Road  
Connah's Quay  
Flintshire  
CH5 4BP**

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

Signed

Date

	<b>09/02/2007</b>
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**M. Peacock**

Authorised to sign on behalf of the Agency

# Conditions

## 1 Management

### 1.1 General management

1.1.1 The activities shall be managed and operated:

- (a) in accordance with a management system, which identifies and minimises risks of pollution, including those arising from operations, maintenance, accidents, incidents and non-conformances and those drawn to the attention of the operator as a result of complaints; and
- (b) by sufficient persons who are competent in respect of the responsibilities to be undertaken by them in connection with the operation of the activities.

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 Accidents that may cause pollution

1.2.1 The operator shall:

- (a) maintain and implement an accident management plan;
- (b) review and record at least every 4 years or as soon as practicable after an accident, (whichever is the earlier) whether changes to the plan should be made;
- (c) make any appropriate changes to the plan identified by a review.

### 1.3 Energy efficiency

1.3.1 The operator shall:

- (a) take appropriate measures to ensure that energy is used efficiently in the activities;
- (b) review and record at least every 4 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.

### 1.4 Efficient use of raw materials

1.4.1 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 4 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 appropriate further measures identified by a review.

## **1.5 Avoidance, recovery and disposal of wastes produced by the activities**

### **1.5.1 The operator shall:**

- (a) take appropriate measures to ensure that waste produced by the activities is avoided or reduced, or where waste is produced it is recovered wherever practicable or otherwise disposed of in a manner which minimises its impact on the environment;
- (b) review and record at least every 4 years whether changes to those measures should be made; and
- (c) take any further appropriate measures identified by a review.

## **1.6 Site security**

- 1.6.1. Site security measures shall prevent unauthorised access to the site, as far as practicable.

## **1.7 Multiple operator installations**

- 1.7.1 No condition applies

# **2. Operations**

## **2.1 Permitted activities**

- 2.1.1 The operator is 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 red on the site plan at schedule 2 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 Agency.
- 2.3.2 No raw materials or fuels listed in schedule 3 table S3.1 shall be used unless they comply with the specifications set out in that table.
- 2.3.3 The discharge from the purge storage pond shall take place between one hour after the predicted time of high water and 4 hours after the predicted time of high water.
- 2.3.4 The purge cooling tower shall be brought into operation when the average water temperature over a 3 hour abstraction period is 21°C or greater. The purge cooling tower shall be taken out of service when the temperature falls to 20.5°C or lower.

## **2.4 Off-site conditions**

There are no off-site conditions under this section.

## **2.5 Improvement programme**

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

## **2.6 Pre-operational conditions**

There are no pre-operational conditions in this permit.

## **2.7 Closure and decommissioning**

- 2.7.1 The operator shall maintain and operate the activities so as to prevent or where that is not practicable, to minimise, any pollution risk on closure and decommissioning.
- 2.7.2 The operator shall maintain a site closure plan which demonstrates how the activities can be decommissioned to avoid any pollution risk and return the site to a satisfactory state.
- 2.7.3 The operator shall carry out and record a review of the site closure plan at least every 4 years.
- 2.7.4 The site closure plan (or relevant part thereof) shall be implemented on final cessation or decommissioning of the activities or part thereof.

## **2.8 Site protection and monitoring programme**

- 2.8.1 The operator shall, within 4 months of the issue of this permit, submit a site protection and monitoring programme.
- 2.8.2 The operator shall implement and maintain the site protection and monitoring programme and shall carry out and record a review of it at least every 4 years.

# **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 4 tables S4.1 ((a) and (b)), S4.2 and S4.3.
- 3.1.2 The limits given in schedule 4 shall not be exceeded.

## **3.2 Transfers off-site**

- 3.2.1 Records of all the wastes sent off site from the activities, for either disposal or recovery, shall be maintained.

### **3.3 Fugitive emissions of substances**

- 3.3.1 Fugitive emissions of substances (excluding odour, noise and vibration) shall not cause pollution. The operator shall not be taken to have breached this condition if appropriate measures, including those specified in schedule 1 table S1.5, have been taken to prevent or where that is not practicable, to minimise, those emissions.
- 3.3.2 All liquids, 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.

### **3.4 Odour**

- 3.4.1 Emissions from the activities shall be free from odour at levels likely to cause annoyance outside the site, as perceived by an authorised officer of the Agency, unless the operator has used appropriate measures to prevent or where that is not practicable to minimise the odour.

### **3.5 Noise and vibration**

- 3.5.1 Emissions from the activities shall be free from noise and vibration at levels likely to cause annoyance outside the site, as perceived by an authorised officer of the Agency, unless the operator has used appropriate measures, to prevent or where that is not practicable to minimise the noise and vibration.

### **3.6 Monitoring**

- 3.6.1 The operator shall, unless otherwise agreed in writing by the Agency, undertake the monitoring specified in the following tables in schedule 4 to this permit:
- (a) point source emissions specified in tables S4.1((a) and (b)), S4.2;
  - (b) surface water specified in table S4.5;
  - (c) process monitoring specified in table S4.8.
- 3.6.2 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 continual), calibrations, examinations, tests and surveys and any assessment or evaluation made on the basis of such data.
- 3.6.3 Monitoring equipment, techniques, personnel and organisations employed for the emissions monitoring programme and the environmental or other monitoring specified in condition 3.6.1 shall have either MCERTS certification or MCERTS accreditation (as appropriate) unless otherwise agreed in writing by the Agency.
- 3.6.4 Permanent means of access shall be provided to enable sampling/monitoring to be carried out in relation to the emission points specified in schedule 4 tables S4.1 ((a) and (b)) and S4.2 unless otherwise specified in that schedule.
- 3.6.5 Within 8 months of the issue of this permit (unless otherwise agreed in writing by the Agency) the site reference data identified in the site protection and monitoring programme shall be collected and submitted to the Agency.



### **3.7 Monitoring for the purposes of the Large Combustion Plant Directive**

- 3.7.1 All LCP monitoring required by this permit shall be carried out in accordance with the provisions of Annex VIII of the Large Combustion Plant Directive.
- 3.7.2 If the monitoring results for more than 10 days a year are invalidated within the meaning set out in Schedule 4, the Operator shall:
- (a) within 28 days of becoming aware of this fact, review the causes of the invalidations and submit to the Agency for approval, proposals for measures to improve the reliability of the continuous measurement systems, including a timetable for the implementation of those measures; and
  - (b) implement the approved measures.
- 3.7.3 Continuous measurement systems on emission points from the LCP shall be subject to quality control by means of parallel measurements with reference methods at least once every calendar year.
- 3.7.4 Unless otherwise agreed in writing by the Agency in accordance with condition 3.7.5 below, the operator shall carry out the methods, including the reference measurement methods, to use and calibrate continuous measurement systems in accordance with the appropriate CEN standards.
- 3.7.5 If CEN standards are not available, ISO standards, national or international standards which will ensure the provision of data of an equivalent scientific quality shall be used, as agreed in writing with the Agency.
- 3.7.6 Where required by a condition of this permit to check the measurement equipment the operator shall submit a report to the 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 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) the site protection and monitoring programme.
- 4.1.2 Any records required to be made by this permit shall be supplied to the Agency within 14 days where the records have been requested in writing by the Agency.

- 4.1.3 All records required to be held by this permit shall be held on the installation on-site and shall be available for inspection by the Agency at any reasonable time.

## **4.2 Reporting**

- 4.2.1 A report or reports on the performance of the activities over the previous year shall be submitted to the Agency by 31 January (or other date agreed in writing by the 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 this permit against the relevant assumptions, parameters and results in the assessment of the impact of the emissions submitted with the application;
  - (b) where the operator's management system encompasses annual improvement targets, a summary report of the previous year's progress against such targets;
  - (c) the annual production /treatment data set out in schedule 5 table S5.2;
  - (d) the performance parameters set out in schedule 5 table S5.3 using the forms specified in table S5.4 of that schedule; and
  - (e) details of any contamination or decontamination of the site which has occurred.
- 4.2.2 Within 28 days of the end of the reporting period the operator shall, unless otherwise agreed in writing by the 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 5 table S5.1;
  - (b) for the reporting periods specified in schedule 5 table S5.1 and using the forms specified in schedule 5 table S5.4 ; and
  - (c) giving the information from such results and assessments as may be required by the forms specified in those tables.
- 4.2.3 No condition applies.
- 4.2.4 The operator shall, unless notice under this condition has been served within the preceding 4 years, submit to the Agency, within 6 months of receipt of a written notice, a report assessing whether there are other appropriate measures that could be taken to prevent, or where that is not practicable, to minimise pollution.
- 4.2.5 All reports and notifications required by the permit shall be sent to the Agency using the contact details supplied in writing by the Agency
- 4.2.6 The results of reviews and any changes made to the site protection and monitoring programme shall be reported to the Agency, within 28 days of the review or change.

## **4.3 Notifications**

- 4.3.1 The Agency shall be notified without delay following the detection of:
- (a) any malfunction, breakdown or failure of equipment or techniques, accident, or fugitive emission which has caused, is causing or may cause significant pollution;
  - (b) the breach of a limit specified in the permit;
  - (c) any significant adverse environmental effects.
- 4.3.2 Any information provided under condition 4.3.1 shall be confirmed by sending the information listed in schedule 6 to this permit within the time period specified in that schedule.
- 4.3.3 Prior written notification shall be given to the Agency of the following events and in the specified timescales:
- (a) as soon as practicable prior to the permanent cessation of any of the activities;
  - (b) cessation of operation of part or all of the activities for a period likely to exceed 1 year; and
  - (c) resumption of the operation of part or all of the activities after a cessation notified under (b) above.
- 4.3.4 The Agency shall be given at least 14 days notice before implementation of any part of the site closure plan.
- 4.3.5 Where the 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 Agency when the relevant monitoring is to take place. The operator shall provide this information to the Agency at least 14 days before the date the monitoring is to be undertaken.
- 4.3.6 No condition applies.
- 4.3.7 No condition applies.
- 4.3.8 No condition applies.
- 4.3.9 The Agency shall be notified within 14 days of the occurrence of the following matters, except where such disclosure is prohibited by Stock Exchange rules:
- (a) any change in the operator's trading name, registered name or registered office address;
  - (b) any change to particulars of the operator's ultimate holding company (including details of an ultimate holding company where an operator has become a subsidiary); and
  - (c) any steps taken with a view to the operator going into administration, entering into a company voluntary arrangement or being wound up.

### **Climate Change Agreement**

- 4.3.10 No condition applies.
- 4.3.11 No condition applies

#### **Notification of closure of Large Combustion Plant**

- 4.3.12 From 1 January 2008 the Operator shall inform the 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 7 shall have the meaning given in that schedule.

# Schedule 1 – Operations

Table S1.1 activities

Activity listed in Schedule 1 of the PPC Regulations	Description of specified activity	Limits of specified activity
Section 1.1 A(1) (a) : Burning any fuel in an appliance with a rated thermal input of 50 megawatts or more	Combined Cycle gas turbine power plant production of steam and electricity	Combustion of natural gas in a combined cycle gas turbine (CCGT). From receipt of raw materials to supply of electricity and from water intake to water discharge.
Section 1.2 A(1) (a) – Refining gas where this is likely to involve the use of 1,000 tonnes or more of gas in any period of 12 months	Gas Treatment Plant	From receipt of natural gas to the point after the heaters which reheat and change the gas pressure where the gas enters the gas turbines
Section 1.1 B (a): Burning any fuel in a boiler or furnace or a gas turbine or compression ignition engine with, in the case of any of these appliances, a net rated thermal input of 20 megawatts or more but less than rated thermal input of 50 megawatts.	Auxiliary boiler fired on natural gas with a thermal rating of 24MW.	Combustion of natural gas in a boiler
<b>Directly Associated Activity</b>		
Directly associated activity	Surface water drainage	Handling and storage of site drainage until discharge to the site surface water system.
Directly associated activity	Water treatment de-ionising plant	From receipt of raw materials, handling, to dispatch to cooling water purge system.
Directly associated activity	Waste management	Waste generation and handling – from generation of waste to despatch from the installation
Directly associated activity	Electricity transformers and the banking compound	From generator to the connection to the National Grid
Directly associated activity	Standby emergency diesel generators	From generator to gas turbines

Table S1.2 Operating techniques

Description	Parts	Date Received
Application	Sections 2.1 & 2.2 of the application as well as other sections of the application	06/03/06 (Received) 17/03/06 (Duly Made)
Response to Schedule 4 Notice Request issued on 29/09/06	Response to question 5, 6, 7, 8, 9, 10, 14, 15, 16, 29, detailing process control, 30 detailing emissions limits.	26/10/06
Supplementary Information	Email from Bill Smith at E.ON - Connah's Quay Power Station dated 12.01.07	12/01/07
Supplementary Information	Letter dated 20 <sup>th</sup> November 2006 regarding two-shifting	22/11/06

Table S1.3 Improvement programme requirements

Reference	Requirement	Date
IC1	<p>A written plan shall be submitted to the Agency for approval detailing the results of an investigation to determine a method of gathering and storing data from the continuous pH monitoring of discharges of water from W2. The plan shall include but not be limited to a timetable for implementing the plan. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the procedure.</p> <p>The procedure shall be implemented by the operator from the date of approval in writing by the Agency</p>	31/07/07
IC2	<p>The Operator shall undertake a review report of the drainage on site and shall include but not be limited to the identification of all emission points to water. The review shall include all potential discharge points on site. Where appropriate, the plan shall contain a timetable for improvements to be made. 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>	31/07/07
IC3	<p>The Operator shall undertake a written review of the best available techniques (BAT) listed within the Combustion Sector TGN IPPC S1.01 Section 2 for the emissions of oxides of nitrogen. The review shall include, but not be limited to, all of the relevant techniques listed within the TGN, the reduction in the level of pollutants (for each option) and the costs of achieving the reduction (for each option). The review shall build upon the information provided in the Schedule 4 response. The report shall include a timetable to implement any proposed changes as appropriate. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the plan.</p> <p>The Operator shall implement the proposals as agreed in writing with the Environment Agency.</p>	31/07/07
IC4	<p>A written site noise management plan detailing the measures to be used to control emissions of noise shall be submitted to the Agency for approval. This shall comply with Horizontal Guidance note H3. Where appropriate the reviewed, updated version of the plan shall include but not be limited to, a timetable for achieving the improvements to comply with the requirements of the guidance. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the plan.</p> <p>The updated procedure shall be implemented by the operator from the date of approval in writing by the Agency.</p>	31/08/07
IC5	<p>A written updated and reviewed preventative maintenance and inspection plan shall be submitted to the Agency for approval to encompass all plant whose failure could lead to an impact on the environment. The procedure shall include but not be limited to, a timetable for achieving any improvements identified. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the procedure.</p> <p>The procedure shall be implemented by the operator from the date of approval in writing by the Agency</p>	30/09/07
IC6	<p>A written plan shall be submitted to the Agency for approval detailing the measures to be taken so that monitoring equipment, techniques, personnel and organisations employed for the emissions monitoring programme shall have either MCERTS certification or accreditation in accordance with condition 3.6.3. The plan shall include but not be limited to, a timetable for achieving this standard for any elements that are not MCERTS certified. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the procedure.</p> <p>The procedure shall be implemented by the operator from the date of approval in writing by the Agency</p>	30/09/07
IC7	<p>A written accident management plan shall be submitted to the Agency for approval to encompass all relevant aspects and measures as appropriate. This shall also include a flood protection risk assessment for the site and a review and assessment of firewater</p>	31/10/07

hazards. The procedure shall include but not be limited to, a timetable for achieving the improvements to comply with the requirements of the Combustion Sector Technical Guidance Note (TGN) where appropriate. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the procedure.

The procedure shall be implemented by the operator from the date of approval in writing by the Agency

IC8	A written energy efficiency plan shall be submitted to the Agency for approval detailing the results of an assessment to identify the energy efficiency priorities across the site and for building services measures. The plan shall include but not be limited to a timetable to implement any proposed changes as appropriate. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the plan.	30/11/07
The plan shall be implemented by the Operator from the date of approval by the Agency.		
IC9	A written site closure plan shall be submitted to the Agency for approval. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the procedure.	31/12/07
The procedure shall be implemented by the operator from the date of approval in writing by the Agency.		
IC10	A written plan shall be submitted to the Agency for approval detailing the results of a survey to determine the integrity, adequacy and suitability of existing hard-standing, kerbing and secondary containment for above and below ground structures for raw material, chemical and oil as well as waste storage areas and the measures to comply with the requirements of the Combustion Sector TGN. This shall include but not be limited to an inspection and maintenance program for all relevant equipment identified and inspected every 3 years. 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.	31/12/07
The plan shall be implemented by the operator from the date of approval by the Agency.		
IC11	The Operator shall undertake a review report of the copper identified and monitored in the purge discharge to the Dee Estuary over the past 4 years. The review shall include all potential sources of copper on site. Where appropriate, the plan shall contain a timetable 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.	31/03/08
The plan shall be implemented by the operator from the date of approval by the Agency		
IC12	The Operator shall undertake a review report of the trihalomethanes identified and monitored in the purge discharge to the Dee Estuary over the past 4 years. The review shall include all potential sources on site. Where appropriate, the plan shall contain a timetable 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.	31/03/2008
The plan shall be implemented by the operator from the date of approval by the Agency		
IC13	A written waste management plan shall be submitted to the Agency for approval detailing the results of an assessment to identify the best environmental options for waste recovery or disposal, waste minimisation, waste management including handling, storage and waste retention times as well as a waste management audit to comply with the requirements of the Combustion Sector TGN. The plan shall include but not be limited to a timetable to implement any proposed changes as appropriate and shall include a clause to be reviewed every 4 years. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the plan.	31/03/08
The plan shall be implemented by the Operator from the date of approval by the Agency.		
IC14	A written water efficiency plan shall be submitted to the Agency for approval detailing the results of an assessment to identify the water efficiency priorities across the site. The plan shall include but not be limited to a timetable to implement any proposed changes as	31/01/09



appropriate. The notification requirements of condition 2.5.2 shall be deemed to have been complied with on submission of the plan.

The plan shall be implemented by the Operator from the date of approval by the Agency.

Table S1.4A Pre-operational measures

Reference	Pre-operational measures
	Not applicable

Table S1.4B Pre-operational measures for future development

Reference	Operation	Pre-operational measures
	Not applicable	

Table S1.5 Appropriate measures for fugitive emissions

Measure	Dates
A fugitive emission management plan shall be submitted to the Agency, detailing the measures to be used to control fugitive emissions, to include but not be limited to the gas treatment plant.	31/07/07
The plan shall be implemented by the operator from the date of approval in writing by the Agency	

Table S1.6 Appropriate measures for odour

Measure	Dates
-	-

Table S1.7 Appropriate measures for noise

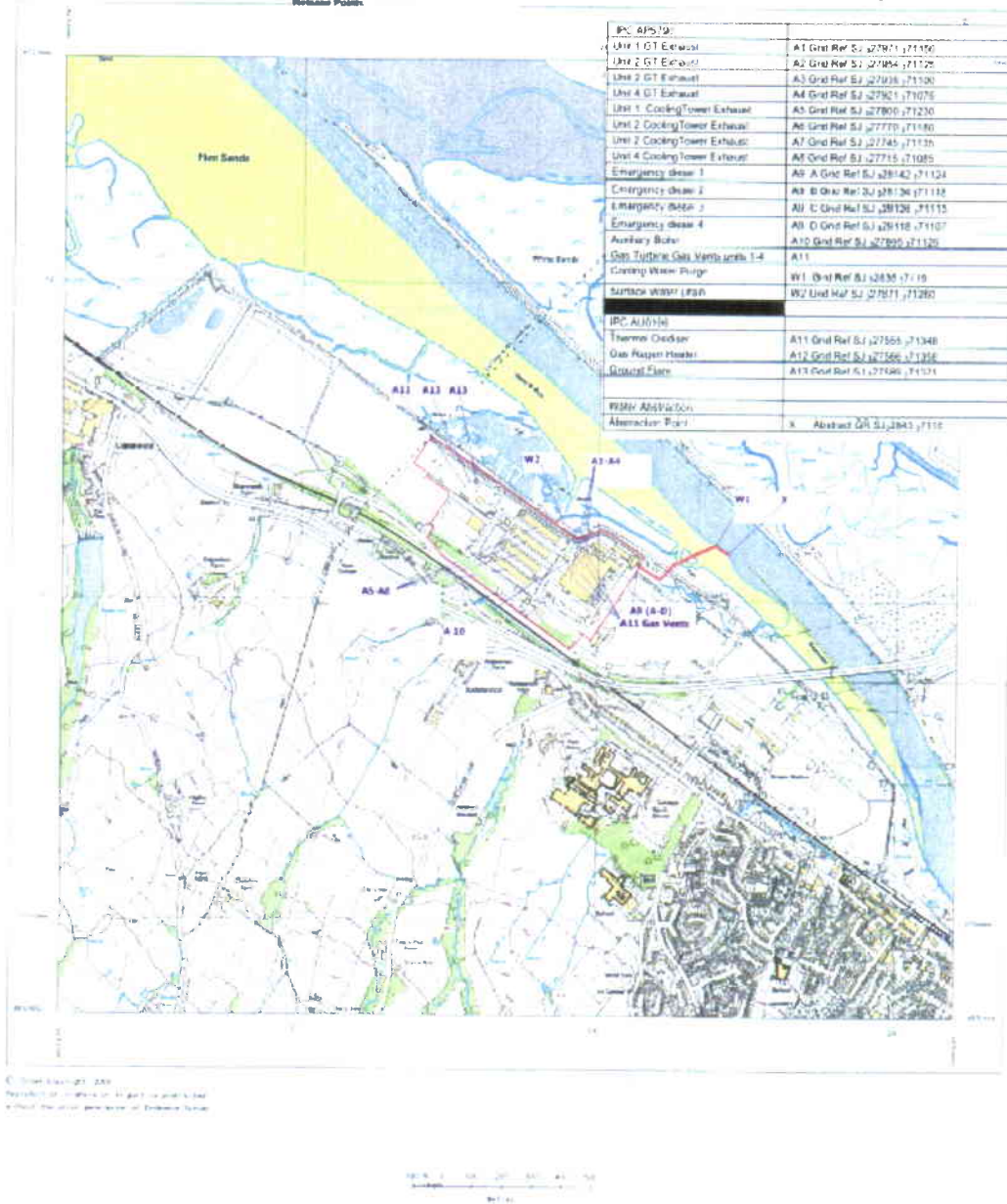
Measure	Dates
-	-

## Schedule 2 - Site plan



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 Installation Boundary and  
 Ordnance Survey

Landplan® Data



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## Schedule 3 - Waste types, raw materials and fuels

Table S3.1 Raw materials and fuels

Raw materials and fuel description	Specification
Natural Gas	Supplied from Point of Ayr Terminal or National Transmission System. The maximum total sulphur content of fuel gas burned in the process shall not exceed 35ppm as H <sub>2</sub> S.
Water	River water abstracted from River Dee
Water	Town mains
Gas oil until 31/12/2007	Less than 0.2% w/w sulphur content <sup>1</sup>
Gas oil from 01/01/2008	Less than 0.1% w/w sulphur content <sup>1</sup>

<sup>1</sup> Reference: The Sulphur Content of Liquid Fuels (England and Wales) Regulations 2000 (SI 2000 No. 1460) expressed as percentage by mass.

## Schedule 4 – Emissions and monitoring

### Note

For the purposes of this Schedule, the following interpretations shall apply:

- For the continuous measurement systems fitted to the LCP release points defined in Table S4.1 the validated hourly and daily averages shall be determined from the measured valid hourly average values after having subtracted the value of the 95% confidence interval.
- The 95% confidence interval for nitrogen oxides and sulphur dioxide of a single measured result shall be taken to be 20%.
- The 95% confidence interval for dust releases of a single measured result shall be taken to be 30%
- The 95% confidence interval for carbon monoxide of a single measured result shall be taken to be 10%
- An invalid hourly average means an hourly average period invalidated due to malfunction of, or maintenance work being carried out on, the continuous measurement system. However, to allow some discretion for zero and span gas checking, or cleaning (by flushing), an hourly average period will count as valid as long as data has been accumulated for at least two thirds of the period (40 minutes). Such discretionary periods are not to exceed more than 5 in any one 24-hour period unless agreed in writing. Where plant may be operating for less than the 24-hour period, such discretionary periods are not to exceed more than one quarter of the overall valid hourly average periods unless agreed in writing.
- Any day, in which more than three hourly average values are invalid shall be invalidated.

Table S4.1(a) Point source emissions to air from Gas Turbines

Emission point ref. & location	Parameter	Source	Limit (including unit) <sup>a</sup>	Reference period	Monitoring frequency	Monitoring standard or method
Points A1, A2, A3, A4 on site plan in Schedule 2	Oxides of Nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	Gas turbine fired on natural gas	75mg/m <sup>3</sup>	Daily mean of validated hourly averages	Continuous	BS EN 14181 and as agreed in writing with the Agency
Points A1, A2, A3, A4 on site plan in Schedule 2	Oxides of Nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	Gas turbine fired on natural gas	110mg/m <sup>3</sup>	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181 and as agreed in writing with the Agency
Points A1, A2, A3, A4 on site plan in schedule 2	Carbon Monoxide	Gas turbine fired on natural gas	30mg/m <sup>3</sup>	Daily mean of validated hourly averages	Continuous	BS EN 14181 and as agreed in writing with the Agency

<sup>a</sup> – these limits do not apply during start up or shut down

Table S4.1(b) Point source emissions to air from the Gas Treatment Plant (GTP)

Emission point ref. & location	Parameter	Source	Limit (including unit) <sup>a</sup>	Reference period	Monitoring frequency	Monitoring standard or method
Point A11 on site plan in Schedule 2	Oxides of Nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	Thermal oxidiser	95mg/m <sup>3</sup>	10 minute averaging period	Continuous	To be agreed in writing with the Agency, and as set out in M2
Point A12 on site plan in Schedule 2	Oxides of Nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	Gas Regen. Heater	95mg/m <sup>3</sup>	10 minute averaging period	Every 12 months	To be agreed in writing with the Agency, and as set out in M2
Point A11 on site plan in schedule 2	Carbon Monoxide	Thermal oxidiser	10mg/m <sup>3</sup>	10 minute averaging period	Continuous	To be agreed in writing with the Agency, and as set out in M2
Point A12 on site plan in Schedule 2	Carbon monoxide	Gas Regen. Heater	100mg/m <sup>3</sup>	10 minute averaging period	Every 12months	To be agreed in writing with the Agency, and as set out in M2
Point A11 on site plan in Schedule 2	Sulphur Dioxide	Thermal oxidiser	9950 mg/m <sup>3</sup>	10 minute averaging period	Continuous	To be agreed in writing with the Agency, and as set out in M2

<sup>a</sup> – these limits do not apply during start up or shut down

Table S4.2 Point Source emissions to water (other than sewer) – emission limits and monitoring requirements

Emission point ref. & location	Parameter	Source	Limit (Incl. unit)	Reference period	Monitoring frequency	Monitoring standard or method
W1 on site plan in schedule 2	Flow	Main cooling water purge to the River Dee	2.5 m <sup>3</sup> /sec	Instantaneous	Continuously	To be agreed in writing with the Agency
W1 on site plan in schedule 2	Temperature	Main cooling water purge to the River Dee	25°C	Instantaneous	Continuously	To be agreed in writing with the Agency
W1 on site plan in schedule 2	Temperature difference April - October	Main cooling water purge to the River Dee	13°C	Instantaneous	Continuously	To be agreed in writing with the Agency
W1 on site plan in schedule 2	Temperature difference November- March	Main cooling water purge to the River Dee	13°C	Instantaneous	Continuously	To be agreed in writing with the Agency
	95 percentile Maximum (°C)		20°C			
W1 on site plan in schedule 2	Salinity	Main cooling water purge to the River Dee	60g/l	Instantaneous	Continuously	To be agreed in writing with the Agency
W1 on site plan in schedule 2	pH Maximum	Main cooling water purge to the River Dee	9	Instantaneous	Continuously	To be agreed in writing with the Agency
W1 on site plan in schedule 2	pH Minimum	Main cooling water purge to the River Dee	6	Instantaneous	Continuously	To be agreed in writing with the Agency
W1 on site plan in schedule 2	Total Residual Oxidant (TRO)	Main cooling water purge to the River Dee	0.2mg/l	Instantaneous	Continuously	To be agreed in writing with the Agency
W1 on site plan in schedule 2	Oil and grease	Main cooling water purge to the River Dee	20mg/l	Instantaneous	Continuously	To be agreed in writing with the Agency
W2 on site plan in schedule 2	pH Maximum	Surface water drain	9	Instantaneous	Continuously	To be agreed in writing with the Agency
W2 on site plan in schedule 2	pH Minimum	Surface water drain	6	Instantaneous	Continuously	To be agreed in writing with the Agency
W2 on site plan in schedule 2	Oil and grease	Surface water drain	20mg/l	Instantaneous	Continuously	To be agreed in writing with the Agency

**Table S4.3 Point source emissions to sewer, effluent treatment plant or other transfers off-site- emission limits and monitoring requirements**

<b>Emission point ref. &amp; location</b>	<b>Parameter</b>	<b>Source</b>	<b>Limit (incl. Unit)</b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
-	-	-	-	-	-	-

**Table S4.4 Annual limits(Excluding start up and shut down except where otherwise stated).**

<b>Substance</b>	<b>Medium</b>	<b>Limit (including unit)</b>	<b>Release Points</b>
-	-	-	-

**Table S4.5 Surface water monitoring requirements**

<b>Location or description of point of measurement</b>	<b>Parameter</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>	<b>Other specifications</b>
-	-	-	-	-

**Table S4.6 Noise monitoring requirements**

<b>Location or description of point of measurement</b>	<b>Parameter</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>	<b>Other specifications</b>
-	-	-	-	-

**Table S4.7 Ambient air monitoring requirements**

<b>Location or description of point of measurement</b>	<b>Parameter</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>	<b>Other specifications</b>
-	-	-	-	-

**Table S4.8 Process monitoring requirements**

<b>Emission point reference or source or description of point of measurement</b>	<b>Parameter</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>	<b>Other specifications</b>
Outlet from cooling towers	Assessment of visible plume	Daily	Visual	In accordance with H1 or other method as agreed in writing with the Agency

## Schedule 5 - Reporting

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

**Table S5.1 Reporting of monitoring data**

Parameter	Emission or monitoring point/reference	Reporting period	Period begins
Oxides of nitrogen Parameters as required by condition 3.6.1.	A1, A2, A3, A4, A11	Every 3 months	01/01/07
Carbon Monoxide Parameters as required by condition 3.6.1	A1,A2, A3, A4, A11	Every 3 months	01/01/07
Oxides of nitrogen Parameters as required by condition 3.6.1.	A12	Every 12 months	01/01/07
Carbon Monoxide Parameters as required by condition 3.6.1	A12	Every 12 months	01/01/07
Sulphur dioxide Parameters as required by condition 3.6.1	A11	Every 3 months	01/01/07
Invalidation of Continuous monitoring	A1, A2, A3, A4	Every 3 months	01/01/07
Flow Parameters as required by condition 3.6.1	W1	Every 3 months	01/01/07
pH maximum Parameters as required by condition 3.6.1	W1, W2	Every 3 months	01/01/07
pH minimum Parameters as required by condition 3.6.1	W1, W2	Every 3 months	01/01/07
Oil (or grease) Parameters as required by condition 3.6.1	W1, W2	Every 3 months	01/01/07
Temperature difference between discharge and receiving waters Parameters as required by condition 3.6.1	W1	Every 3 months	01/01/07
Temperature maximum Parameters as required by condition 3.6.1	W1	Every 3 months	01/01/07
Salinity Parameters as required by condition 3.6.1	W1	Every 3 months	01/01/07
Total Residual Oxidant (TRO) Parameters as required by condition 3.6.1	W1	Every 3 months	01/01/07

**Table S5.2: Annual production/treatment**

Parameter	Units
Energy Output (power generated)	GWHrs

**Table S5.3 Performance parameters**

Parameter	Frequency of assessment	Units
Energy usage	Annually	MJ
River water usage	Annually	M <sup>3</sup>
Mains Water usage	Annually	M <sup>3</sup>



Table S5.4 Reporting forms				
Media/ parameter	Reporting format	Starting Point	Agency recipient	Date of form
Air	Form Air – 2 continuous monitoring or other form as agreed in writing by the Agency	01/01/2007	Site Inspector	01/12/06
Air	Form Air – 3 continuous measurement systems invalidation log or other form as agreed in writing by the Agency	01/01/2007	Site Inspector & Central office	01/12/06
Air	Form Air 1 or other form as agreed in writing by the Agency	01/01/2007	Site Inspector	01/12/06
Water	Form water 1 or other form as agreed in writing by the Agency	01/01/2007	Site Inspector	01/12/06
Water usage	Form water usage 1 or other form as agreed in writing by the Agency	01/01/2007	Site Inspector	01/12/06
Annual Energy Output	Form Air 7 Energy Usage Summary or other form as agreed in writing by the Agency	01/01/2007	Site Inspector	01/12/06
Energy Usage (GTP)	Form Energy 1 or other form as agreed in writing by the Agency	01/01/2007	Site inspector	01/12/06

## Schedule 6 - 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 PPC Regulations.

### Part A

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

<b>(a) Notification requirements for any malfunction, breakdown or failure of equipment or techniques, accident, or fugitive emission 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	
Measures taken, or intended to be taken, to stop the emission	

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

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

**Part B - to be submitted as soon as practicable**

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

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

\* authorised to sign on behalf of E.ON UK plc

## Schedule 7 - Interpretation

"*accident*" means an accident that may result in pollution.

"*annually*" means once every 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 4 to the PPC Regulations.

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

"*background concentration*" means such concentration of that substance as is present in:

- for emissions to surface water, the surface water quality up-gradient of the site; or
- for emissions to sewer, the surface water quality up-gradient of the sewage treatment works discharge.

"*calendar monthly mean*" means the value across a calendar month of all validated hourly means.

"*Combustion Technical Guidance Note*" means IPPC Sector Guidance Note Combustion Activities, version 2.03 dated 27<sup>th</sup> July 2005 published by Environment Agency.

"*DLN*" means dry, low NO<sub>x</sub> burners.

"*emissions to land*", includes emissions to groundwater.

"*fugitive emission*" means an emission to air, water or land from the activities which is not controlled by an emission or background concentration limit.

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

"*land protection guidance*", means Agency guidance "H7 - Guidance on the protection of land under the PPC Regime: application site report and site protection monitoring programme".

"*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<sub>th</sub> or more, based on gross calorific value.

"*Large Combustion Plant Directive*" means Directive 2001/80/EC of the European Parliament and of the Council of 23 October 2001 on the limitation of emissions of certain pollutants into the air from large combustion plants.

"*MCERTS*" means the Environment Agency's Monitoring Certification Scheme.

"*mcr*" means maximum continuous rating.

"*Natural gas*" means naturally occurring methane with no more than 20% by volume of inert or other constituents.

"*ncv*" means net calorific value.

"*notify without delay*" / "*notified without delay*" means that a telephone call can be used, whereas all other reports and notifications must be supplied in writing, either electronically or on paper.

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

"PPC Regulations" means the Pollution, Prevention and Control (England and Wales) Regulations SI 2000 No.1973 and words and expressions used in this permit which are also used in the Regulations have the same meanings as in those Regulations.

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

"reference conditions" means:

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.

"SI" means site inspector

"site protection and monitoring programme" means a document which meets the requirements for site protection and monitoring programmes described in the Land Protection Guidance.

"start up" means that period during which the gas turbines are being brought up to normal operating conditions and low NOx combustion conditions have not been established.

"shut down" means that period when the gas turbines are being taken out of operation and low NOx combustion has ceased.

"year" means calendar year ending 31 December.

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

- (a) 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.
- (b) 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.
- (c) in relation to gas turbines or compression ignition engines; an oxygen content of 15%, dry, the concentration at a temperature of 273K and at a pressure of 101.3 kPa, for liquid and gaseous fuels.
- (d) In relation to spark ignition engines; an oxygen content of 5%, dry, the concentration at a temperature of 273K and at a pressure of 101.3 kPa, for liquid and gaseous fuels.
- (e) In relation to the thermal oxidiser; an oxygen content of 3% dry, the concentration at a temperature of 273K and at a pressure of 101.3kPa, for liquid and gaseous fuels.

END OF PERMIT