Notice of variation and consolidation with introductory note

The Environmental Permitting (England & Wales) Regulations 2010

VPI Immingham LLP

Immingham CHP Power Plant
Rosper Road
Immingham
North Lincolnshire
DN40 3DZ

Variation application number

EPR/BJ8022IZ/V007

Permit number

EPR/BJ8022IZ

Immingham CHP Power Plant
Permit number EPR/BJ8022IZ

Introductory note

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

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

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

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

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

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

The Operator has chosen to operate this LCP under the ELV compliance route.

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

- LCP 199 is changed to LCP 188; and
- LCP 415 is added.

The improvement condition numbering has been updated from 9.1, 9.2 etc to IC1, IC2 etc.

The dissolved oxygen limit on emission point M3 has been removed from table S3.2.

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

The installation is operated as a combined heat and power plant (CHP), to supply steam to two adjacent oil refineries with the option for future potential local industries, and electricity to one of the adjacent refineries and to the National Grid.

The CHP is capable of producing 1240 MW of electricity and 930 tonnes of steam.

The CHP comprises three sets of gas turbine (GT) (700, 700 & 800 MWth nominal) with associated heat recovery steam generators (HRSG) (150, 150 & 200 MWth nominal) and a steam turbine; two auxiliary boilers (300 & 300 MWth nominal) for backup steam supplies, if any of the other CHP capacity are unavailable.

Electricity is generated by the electrical generator of the gas turbine combusting fuel gas. The hot exhaust gas then passes through an associated HRSG to raise steam which can then be passed through a steam turbine with generator attached to generate additional electricity. Additional fuel can be burned in the HRSG supplementary burners to supply steam to customers in excess of that resulting from electricity generation.

Two of the gas turbines normally burn natural gas; if this is unavailable distillate fuel will be used in these gas turbines. The third gas turbine uses natural gas or natural gas blended with Refinery Off Gas (ROG). All three HRSG supplementary burners use natural gas and ROG. The auxiliary boilers are normally on hot standby using natural gas or ROG. The auxiliary boilers are kept in hot standby ready to ramp up to maintain the steam demand in the event of loss of operating steam generating units. Distillate oil can be used as a fuel in the auxiliary boilers if there is a natural gas interruption once CEMS for dust are installed.

Emissions to air from the combustion process of oxides of nitrogen (NO_x) are minimised using low NO_x combustion technology. Emissions of sulphur dioxide (SO_2) are controlled by setting a sulphur specification of the fuel. Emissions of carbon monoxide (CO) are minimised by efficient fuel use in excess air (oxygen (O_2)). These emissions are released to atmosphere via four flues in a 90m high windshield for one of the large combustion plants (LCP188) and a single 90m high stack for the other (LCP415). Releases to air by these stacks ensure compliance with Air Quality Standards.

LCP415 steam turbine is cooled using an air cooled condenser to minimise water use.

Raw water is required to produce demineralised water to replace condensate that cannot be recovered. Waste water from one of the refineries is processed in the water treatment plant and used in the cooling water circuit. The water discharged from the process is predominantly blowdown from the cooling water circuit to prevent a build-up of dissolved solids, which result from evaporative losses from the hybrid cooling towers which serve LCP188.

Releases to water from the process are discharged via one outfall (W1) into the South Killingholme drain. The discharge comprises process water and surface water arising during rainfall.

VPI Immingham LLP has an Environmental Management System externally certified to ISO 14001, which is also regularly internally audited as per the ISO 14001 standard.

The schedules specify the changes made to the permit.

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

Status log of the permit		
Description	**Date**	**Comments**
Application BJ8022 received	Received 08/02/01	
Request to extend determination	Request dated 16/05/01	Request accepted 23/05/01.
Permit determined EPR/BJ8022IZ (PAS Billing ref. BJ8022)	Determined 16/08/01	
Transfer application BU6140	Determined 01/05/03	Transfer issued.
Standard variation application (PAS Billing ref. NP3130BP)	Determined 28/10/04	Variation issued. Detailed design changes and LCPD conditions.
Substantial variation application (PAS Billing ref. NP3339LK)	Determined 30/04/07	Variation issued.
Simple standard variation application (EPR/BJ8022IZ/V005)	Received 31/03/09	
Additional information received	29/05/09	
Variation determined EPR/BJ8022IZ/V005 (PAS Billing ref. YP3837GD)	Determined 04/06/09	
Notified of change of company name and registered office address	12/11/14	Name changed to VIP Immingham LLP

Status log of the permit		
Description	**Date**	**Comments**
Variation determined EPR/BJ8022IZ/V006 (PAS Billing ref. PP3432WT)	Determined 14/11/14	Varied permit issued to VPI Immingham LLP.
Regulation 60 Notice sent to the Operator	17/12/14	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	27/03/15	Response received from the Operator dated 27/03/15.
Regulation 60 Notice, request for additional information	Requested 05/06/15	Letter requesting further information sent.
Additional information received	Response dated 29/06/15	Response to request for further information (RFI).
Additional information received	Received 04/08/15	Further information received.
Additional information received	Received 27/11/15	Information received relating to the net rated thermal input.
Variation determined EPR/BJ8022IZ/V007 (PAS Billing ref: XP3732RA)	29/12/15	Varied and consolidated permit issued in modern condition format. Variation effective from 01/01/16.

End of introductory note

Notice of variation and consolidation

The Environmental Permitting (England and Wales) Regulations 2010

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

Permit number

EPR/BJ8022IZ

Issued to

VPI Immingham LLP ("the operator")

whose registered office is

Belgrave House
76 Buckingham Palace Road
London
SW1W 9TQ

limited liability partnership number OC300980

to operate a regulated facility at

Immingham CHP Power Plant
Rosper Road
Immingham
North Lincolnshire
DN40 3DZ

to the extent set out in the schedules.

The notice shall take effect from 01/01/2016

Name	Date
Mike Jenkins	**29/12/2015**

Authorised on behalf of the Environment Agency

Schedule 1

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

Schedule 2 – consolidated permit

Consolidated permit issued as a separate document.

Permit

The Environmental Permitting (England and Wales) Regulations 2010

Permit number

EPR/BJ8022IZ

This is the consolidated permit referred to in the variation and consolidation notice for application EPR/BJ8022IZ/V007 authorising,

VPI Immingham LLP ("the operator"),

whose registered office is

Belgrave House
76 Buckingham Palace Road
London
SW1W 9TQ

limited liability partnership number OC300980

to operate an installation at

Immingham CHP Power Plant
Rosper Road
Immingham
North Lincolnshire
DN40 3DZ

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

Name	Date
Mike Jenkins	**29/12/2015**

Authorised on behalf of the Environment Agency

Conditions

1 Management

1.1 General management

1.1.1 The operator shall manage and operate the activities:

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

(b) using sufficient competent persons and resources.

1.1.2 Records demonstrating compliance with condition 1.1.1 shall be maintained.

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

1.2 Energy efficiency

1.2.1 The operator shall:

(a) take appropriate measures to ensure that energy is used efficiently in the activities;

(b) take appropriate measures to ensure the efficiency of energy generation at the permitted installation is maximised;

(c) review and record at least every four years whether there are suitable opportunities to improve the energy efficiency of the activities; and

(d) take any further appropriate measures identified by a review.

1.3 Efficient use of raw materials

1.3.1 The operator shall:

(a) take appropriate measures to ensure that raw materials and water are used efficiently in the activities;

(b) maintain records of raw materials and water used in the activities;

(c) review and record at least every four years whether there are suitable alternative materials that could reduce environmental impact or opportunities to improve the efficiency of raw material and water use; and

(d) take any further appropriate measures identified by a review.

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

1.4.1 The operator shall take appropriate measures to ensure that:

(a) the waste hierarchy referred to in Article 4 of the Waste Framework Directive is applied to the generation of waste by the activities;

(b) any waste generated by the activities is treated in accordance with the waste hierarchy referred to in Article 4 of the Waste Framework Directive; and

(c) where disposal is necessary, this is undertaken in a manner which minimises its impact on the environment.

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

2 Operations

2.1 Permitted activities

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

2.2 The site

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

2.3 Operating techniques

2.3.1 The activities shall, subject to the conditions of this permit, be operated using the techniques and in the manner described in the documentation specified in schedule 1, table S1.2, unless otherwise agreed in writing by the Environment Agency.

2.3.2 Without prejudice to condition 2.3.1, the activities shall be operated in accordance with the "Electricity Supply Industry IED Compliance Protocol for Utility Boilers and Gas Turbines" revision 1 dated February 2015 or any later version unless otherwise agreed in writing by the Environment Agency.

2.3.3 If notified by the Environment Agency that the activities are giving rise to pollution, the operator shall submit to the Environment Agency for approval within the period specified, a revision of any plan or other documentation ("plan") specified in schedule 1, table S1.2 or otherwise required under this permit which identifies and minimises the risks of pollution relevant to that plan, and shall implement the approved revised plan in place of the original from the date of approval, unless otherwise agreed in writing by the Environment Agency.

2.3.4 Any raw materials or fuels listed in schedule 2 table S2.1 shall conform to the specifications set out in that table.

2.3.5 The end of the start up period and the start of the shutdown period shall conform to the specifications set out in Schedule 1, tables S1.2 and S1.4.

2.3.6 Standby fuel gas oil may be used for periods of up to 10 days during times of interruption to the gas supply.

2.3.7 Standby fuel, gas oil, may be used but for no more than 500 hours per year.

2.3.8 The operator shall ensure that where waste produced by the activities is sent to a relevant waste operation, that operation is provided with the following information, prior to the receipt of the waste:

(a) the nature of the process producing the waste;

(b) the composition of the waste;

(c) the handling requirements of the waste;

(d) the hazardous property associated with the waste, if applicable; and

(e) the waste code of the waste.

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

2.4 Improvement programme

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

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

3 Emissions and monitoring

3.1 Emissions to water, air or land

3.1.1 There shall be no point source emissions to water, air or land except from the sources and emission points listed in schedule 3 tables S3.1 and S3.2.

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

3.1.3 The emission values from emission point(s) A1, A2, A3, A4 and A5 listed in schedule 3 table S3.1, measured during periods of abatement equipment malfunction and breakdown shall be disregarded for the purposes of compliance with Table S3.1 emission limit values.

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

3.2 Emissions of substances not controlled by emission limits

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

3.2.2 The operator shall:

(a) if notified by the Environment Agency that the activities are giving rise to pollution, submit to the Environment Agency for approval within the period specified, an emissions management plan which identifies and minimises the risks of pollution from emissions of substances not controlled by emission limits;

(b) implement the approved emissions management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

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

3.3 Odour

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

3.3.2 The operator shall:

(a) if notified by the Environment Agency that the activities are giving rise to pollution outside the site due to odour, submit to the Environment Agency for approval within the period specified, an odour management plan which identifies and minimises the risks of pollution from odour;

(b) implement the approved odour management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

3.4 Noise and vibration

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

3.4.2 The operator shall:

(a) if notified by the Environment Agency that the activities are giving rise to pollution outside the site due to noise and vibration, submit to the Environment Agency for approval within the period specified, a noise and vibration management plan which identifies and minimises the risks of pollution from noise and vibration;

(b) implement the approved noise and vibration management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

3.5 Monitoring

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

(a) point source emissions specified in tables S3.1 and S3.2.

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

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

3.6.1 All monitoring required by this permit shall be carried out in accordance with the provisions of Annex V of the Industrial Emissions Directive.

3.6.2 If the monitoring results for more than 10 days a year are invalidated within the meaning set out in condition 3.6.7, the operator shall:

(a) within 28 days of becoming aware of this fact, review the causes of the invalidations and submit to the Environment Agency for approval, proposals for measures to improve the reliability of the continuous measurement systems, including a timetable for the implementation of those measures; and

(b) implement the approved proposals.

3.6.3 Continuous measurement systems on emission points from the LCP shall be subject to quality control by means of parallel measurements with reference methods at least once every calendar year.

3.6.4 Unless otherwise agreed in writing by the Environment Agency in accordance with condition 3.6.5 below, the operator shall carry out the methods, including the reference measurement methods, to use and calibrate continuous measurement systems in accordance with the appropriate CEN standards.

3.6.5 If CEN standards are not available, ISO standards, national or international standards which will ensure the provision of data of an equivalent scientific quality shall be used, as agreed in writing with the Environment Agency.

3.6.6 Where required by a condition of this permit to check the measurement equipment, the operator shall submit a report to the Environment Agency in writing, within 28 days of the completion of the check.

3.6.7 Where Continuous Emission Monitors are installed to comply with the monitoring requirements in schedule 3, table S3.1; the Continuous Emission Monitors shall be used such that:

(a) for the continuous measurement systems fitted to the LCP release points defined in Table S3.1 the validated hourly, monthly and daily averages shall be determined from the measured valid hourly average values after having subtracted the value of the 95% confidence interval;

(b) the 95% confidence interval for nitrogen oxides and sulphur dioxide of a single measured result shall be taken to be 20%;

(c) the 95% confidence interval for dust releases of a single measured result shall be taken to be 30%;

(d) the 95% confidence interval for carbon monoxide releases of a single measured result shall be taken to be 10%;

(e) an invalid hourly average means an hourly average period invalidated due to malfunction of, or maintenance work being carried out on, the continuous measurement system. However, to allow some discretion for zero and span gas checking, or cleaning (by flushing), an hourly average period will count as valid as long as data has been accumulated for at least two thirds of the period (40 minutes). Such discretionary periods are not to exceed more than 5 in any one 24-hour period unless agreed in writing. Where plant may be operating for less than the 24-hour period, such discretionary periods are not to exceed more than one quarter of the overall valid hourly average periods unless agreed in writing; and

(f) any day, in which more than three hourly average values are invalid shall be invalidated.

4 Information

4.1 Records

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

(a) be legible;

(b) be made as soon as reasonably practicable;

(c) if amended, be amended in such a way that the original and any subsequent amendments remain legible, or are capable of retrieval; and

(d) be retained, unless otherwise agreed in writing by the Environment Agency, for at least 6 years from the date when the records were made, or in the case of the following records until permit surrender:

(i) off-site environmental effects; and

(ii) matters which affect the condition of the land and groundwater.

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

4.2 Reporting

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

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

(a) a review of the results of the monitoring and assessment carried out in accordance with the permit including an interpretive review of that data;

(b) the 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 and

(d) where condition 2.3.6 applies, the start date and time, and the days and hours of operation for each period of standby fuel operation;

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) or 4.3.1 (b)(i) where the information relates to the breach of a condition specified in the permit, 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

Table S1.1 activities			
Activity reference	**Activity listed in Schedule 1 of the EP Regulations**	**Description of specified activity**	**Limits of specified activity**
A1	Section 1.1 A(1) (a): Burning any fuel in an appliance with a rated thermal input of 50 megawatts or more.	LCP188: Production of electrical power and steam in a Combined Heat and Power plant comprising two gas fired turbines Nos. 1 & 2 and associated heat recovery steam generating (HRSG) boilers (CCGT). Two auxiliary Boilers No's.1 & 2 for production of steam. LCP415: Production of electrical power and steam in a Combined Heat and Power plant comprising one gas fired turbines No. 3 and associated heat recovery steam generating (HRSG) boiler. (CCGT).	From receipt of natural gas, refinery off-gas (ROG) or gas oil to discharge of exhaust gases and wastes, and the generation of electricity and steam for export.
	Directly Associated Activity		
A2	Directly associated activity	Raw water being processed to produce water of quality fit to use in LCP188 cooling tower system and process waters from the refineries being demineralised for demineralised water production.	Treatment of water supplied from the adjacent oil refinery for use in the LCP's.
A3	Directly associated activity	Oil storage	From receipt of raw materials to dispatch for use.
A4	Directly associated activity	Surface water drainage	Handling and storage of site drainage until discharge to the site surface water system, and discharge to the South Killingholme Drain.
A5	Directly associated activity	Water treatment	From receipt of raw materials to dispatch to chemical effluent and waste water system.

Table S1.2 Operating techniques		
Description	**Parts**	**Date Received**
Application	The response to questions 2.3 given in pages 19-27 of the application.	08/02/01
Variation application	Ref. Psm274V2	July 04
Variation application	Ref. 221924	Jan 06
Supplementary information	Ref. 221490	Oct 06
Supplementary information	Ref. 221490	Jan 07
Variation application	Ref. Immingham CHP SSV01	Mar 09
Supplementary information	Ref. Immingham CHP SSV01 rev B and CHP/SH/017	May 09
Response to regulation 60(1) Notice – request for information dated 17/12/14	Compliance route(s) and operating techniques identified in response to questions 1 (the DEFRA LCP identifier for each LCP plant and it's date of operational commencement), 2 (for each LCP state which compliance route you have selected), 3 (provide evidence of any notification you have already made in relation to the TNP or LLD), 5 (the net rated thermal input of the LCP and the method by which it was derived), 6 (details of the derivation of minimum start-up load and minimum shut-down load), 7 (provide your proposed emission limit values), 8 (do you wish to apply for the derogation not to undertake monitoring when on standby fuels).	Received 27/03/15
Receipt of additional information to the regulation 60(1) Notice. requested by letter dated 05/06/15	Compliance route(s) and operating techniques identified in response to questions 1 (date of operational commencement of each LCP), 2 (rated thermal input), 6 (details of the derivation of minimum start-up load and minimum shut-down load), 7 (provide justification for the emission limit values requested), 8 (provide justification for the Article 30(6) derogation).	Received 29/06/15
Receipt of additional information to the regulation 60(1) Notice.	An update to the introductory note describing the installation. An update to waste stored on site. A new definition of raw materials and fuels. Details of the fuel option for the combustion units. Start-up and shut-down thresholds. IED emission limit values and monitoring requirements.	Received 04/08/15

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IC1	The Operator shall commission the gas turbines, having regard for the implied condition to use the best available techniques (BAT) for preventing or, where that is not practicable, reducing emissions from the installation. The Operator shall submit a report providing details of commissioning of the gas turbines to the Environment Agency. The report shall provide	Completed

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
	details and a justification where commissioning operations depart from those provided in the Application or where emission levels are in excess of the base load limits provided in Table 6.1.2 of this permit.	
IC2	The Operator shall submit to the Environment Agency a detailed report to demonstrate that the activities covered by this permit are carried on in such a way that energy is used efficiently. The report shall provide details, as appropriate, of all indicative energy efficiency requirements in accordance with Environment Agency guidance note IPPC Technical Guidance for Energy Efficiency including details of the energy efficiency plan.	Completed
IC3	The Operator shall establish charts of actual emissions for oxides of nitrogen (NO_x as NO_2) and carbon monoxide over the full range of gas turbine generator loads when using natural gas as fuel and when using distillate fuel oil. The relationship shall be established between emissions for both increasing and decreasing loads. The Operator shall submit a report of the findings (including the charts) to the Environment Agency.	Completed
IC4	The Operator shall submit a report to the Environment Agency on the progress to establish an appropriately registered or certified Environmental Management System having regard to section 2.1 of the relevant IPPC Sectoral or other Technical Guidance. The report shall include timescales to implement such a system.	Completed
IC5	The Operator shall include procedures in the Environmental Management System to ensure that fugitive emissions are reviewed on an annual basis and summary reports on the reviews are submitted to the Environment Agency detailing such releases and the measures taken or proposed to be taken to reduce them.	Completed
IC6	The Operator shall submit a report to the Environment Agency on potential environmental improvements to the Permitted Installation. For each of the subject areas identified in Section 2 of the appropriate technical guidance, the report shall assess the costs and benefits of alternative techniques that may provide environmental improvement. This shall include, but not be limited to, those techniques listed in the guidance. The methodologies used should be based on those given in the relevant Environment Agency guidance as available and should justify, against the BAT criteria, where potential improvements are not planned to be implemented. As part of the environmental management system, the Operator shall submit an updated report every 36 months.	Completed
IC7	The Operator shall submit a report to the Environment Agency on the measures necessary to enable HOR process effluent to be used on site. The report should include an implementation timetable associated with the measures.	Completed
IC8	The Operator shall submit a gap analysis to the Environment Agency on the measures necessary to obtain MCERTs accreditation for the continuous emissions monitors on release points A1-A4 for NO_x. The report should provide an indicative timetable for achieving MCERTs.	Completed
IC9	The Operator shall report, to the Environment Agency for approval, a detailed programme for monitoring noise, to demonstrate compliance with Condition 6.6.1	Completed
IC10	The Operator shall report, the findings of an assessment, to address the potential for increasing noise levels in the 125 Hz ⅓ octave band.	Completed
IC11	The Operator shall submit a report to the Environment Agency identifying the standards proposed to comply with the requirements of the Large Combustion Plant (EC) Directive for discontinuous and parallel reference	Completed

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
	testing.	
IC12	The Operator shall commission the gas turbines, having regard for the implied condition to use the best available techniques (BAT) for preventing or, where that is not practicable, reducing emissions from the installation. The Operator shall submit a report providing details of commissioning of the gas turbines to the Environment Agency. The report shall provide details and a justification where commissioning operations depart from those provided in the Application or where emission levels are in excess of the base load limits provided in Table 6.1.2 of this permit.	Completed
IC13	The Operator shall establish charts of actual emissions for oxides of nitrogen (NO_x as NO_2) and carbon monoxide over the full range of gas turbine generator loads when using natural gas as fuel and when using refinery fuel gas. The relationship shall be established between emissions for both increasing and decreasing loads. The Operator shall submit a report of the findings (including the charts) to the Environment Agency.	Completed
IC14	The Operator shall report, to the Environment Agency for approval, a detailed programme for monitoring noise, to demonstrate compliance with Condition 6.6.1	Completed
IC15	The Operator shall report, the findings of an assessment, to address the potential for increasing noise levels in the 125 Hz ⅓ octave band.	Completed
IC16	The operator shall provide a report in writing to the Environment Agency for acceptance which provides the net rated thermal input for LCP188 and LCP415. The net rated thermal input is the 'as built' value unless the plant has been modified significantly resulting in an improvement of the plant efficiency or output that increases the rated thermal input (which typically requires a performance test to demonstrate that guaranteed improvements have been realised). Evidence to support this figure, in order of preference, shall be in the form of:- a) Performance test results* during contractual guarantee testing or at commissioning (quoting the specified standards or test codes), b) Performance test results after a significant modification (quoting the specified standards or test codes), c) Manufacturer's contractual guarantee value, d) Published reference data, e.g., Gas Turbine World Performance Specifications (published annually); e) Design data, e.g., nameplate rating of a boiler or design documentation for a burner system; f) Operational efficiency data as verified and used for heat accountancy purposes, g) Data provided as part of Due Diligence during acquisition, *Performance test results shall be used if these are available.	31/12/16
IC17	For LCPD LCP199 (now LCP188 and newly added LCP415 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	31/01/16

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
	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.	

Table S1.4 Start-up and Shut-down thresholds		
Emission Point and Unit Reference	**"Minimum Start-Up Load"** **Load in MW and as percent of rated power output (%)**	**"Minimum Shut-Down Load"** **Load in MW and as percent of rated power output (%)**
A1, LCP188 GT1	Load 151MW, percent of rated power output (57.9% MCR)	Load 117MW, percent of rated power output (44.8% MCR)
A2, LCP188 GT2	Load 148MW, percent of rated power output (56.9% MCR)	Load 110MW, percent of rated power output (42.3% MCR)
A3, LCP188 AB1	Load 46MW, percent of rated power output (16% MCR)	Load 46MW, percent of rated power output (16% MCR)
A4, LCP188 AB2	Load 46MW, percent of rated power output (16% MCR)	Load 46MW, percent of rated power output (16% MCR)
A5, LCP415 GT3	Load 115MW, percent of rated power output (40.2% MCR)	Load 97MW, percent of rated power output (33.9% MCR)

Start-up is defined for gas turbines as the point at which the combustion mode switches to full pre-mixed steady rate combustion mode. Shutdown is defined for gas turbines as the point at which the combustion mode switches out of pre-mixed mode. As permitted by the combustion implementing decision document (2012/249/EU) Article 9, at least two or more of the criteria must be met to determine the end of start-up and start of shut-down.

Start-up is defined for auxiliary boilers as the point at which the required burners are operating with sufficient airflow and a steam output mode of 16% and a minimum steam outlet temperature of 525^{o}C at a pressure of 103 bara. Shutdown is defined for auxiliary boilers as the point at which steam output drops below 16% and steam outlet temperature drops below 525^{o}C at a pressure of 103 bara.

Schedule 2 – Waste types, raw materials and fuels

Table S2.1 Raw materials and fuels	
Raw materials and fuel description	**Specification**
Refinery Off-Gas (ROG)	Not exceeding 0.02% w/w max sulphur content
Gas Oil	Not exceeding 0.1% w/w sulphur content
Natural Gas	-

Schedule 3 – Emissions and monitoring

Table S3.1 Point source emissions to air, emission limits and monitoring requirements for LCP emission points from GT's >100MWth and auxiliary boilers 100 to 300MWth.								
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit) - these limits do not apply during start up or shut down.** **Natural gas firing**	**Limit (including unit) - these limits do not apply during start up or shut down.** **Refinery Off Gas (ROG)** **Other gas firing**	**Limit (including unit) - these limits do not apply during start up or shut down.** **Distillate fuel oil firing**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A1 [No.1 Gas Turbine/HRSG. Point A1 on site plan in Schedule 7]	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	LCP No.188 GT/HRSG No.1	50 mg/m^3 70% load and above	120 mg/m^3 70% load and above	90 mg/m^3 70% load and above	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A1 [No.1 Gas Turbine/HRSG. Point A1 on site plan in Schedule 7]	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	LCP No.188 GT/HRSG No.1	55 mg/m^3 70% load and above 55 mg/m^3 MSUL/MSDL to base load	132 mg/m^3 70% load and above 132 mg/m^3 MSUL/MSDL to base load	99 mg/m^3 70% load and above 99 mg/m^3 MSUL/MSDL to base load	Daily mean of validated hourly averages	Continuous	BS EN 14181
A1 [No.1 Gas Turbine/HRSG. Point A1 on site plan in Schedule 7]	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	LCP No.188 GT/HRSG No.1	100 mg/m^3 70% load and above	240 mg/m^3 70% load and above	180 mg/m^3 70% load and above	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A1 [No.1 Gas Turbine/HRSG. Point A1 on site plan in Schedule 7]	Carbon Monoxide	LCP No.188 GT/HRSG No.1	100 mg/m^3 70% load and above	No ELV specified in IED	100 mg/m^3 70% load and above	Monthly mean of validated hourly averages	Continuous	BS EN 14181

Table S3.1 Point source emissions to air, emission limits and monitoring requirements for LCP emission points from GT's >100MWth and auxiliary boilers 100 to 300MWth.								
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit) - these limits do not apply during start up or shut down.** **Natural gas firing**	**Limit (including unit) - these limits do not apply during start up or shut down.** **Refinery Off Gas (ROG)** **Other gas firing**	**Limit (including unit) - these limits do not apply during start up or shut down.** **Distillate fuel oil firing**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A1 [No.1 Gas Turbine/HRSG. Point A1 on site plan in Schedule 7]	Carbon Monoxide	LCP No.188 GT/HRSG No.1	110 mg/m^3 70% load an above 110 mg/m^3 MSUL/MSDL to base load	No ELV specified in IED	110 mg/m^3 70% load an above 110 mg/m^3 MSUL/MSDL to base load	Daily mean of validated hourly averages	Continuous	BS EN 14181
A1 [No.1 Gas Turbine/HRSG. Point A1 on site plan in Schedule 7]	Carbon Monoxide	LCP No.188 GT/HRSG No.1	200 mg/m^3 70% load and above	No ELV specified in IED	200 mg/m^3 70% load and above	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A1 [No.1 Gas Turbine/HRSG. Point A1 on site plan in Schedule 7]	Sulphur Dioxide	LCP No.188 GT/HRSG No.1	35 mg/m^3 70% load and above	35 mg/m^3 70% load and above	See Note 1	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A1 [No.1 Gas Turbine/HRSG. Point A1 on site plan in Schedule 7]	Sulphur Dioxide	LCP No.188 GT/HRSG No.1	39 mg/m^3 70% load and above	39 mg/m^3 70% load and above	See Note 1	Daily mean of validated hourly averages	Continuous	BS EN 14181

Table S3.1 Point source emissions to air, emission limits and monitoring requirements for LCP emission points from GT's >100MWth and auxiliary boilers 100 to 300MWth.								
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit) - these limits do not apply during start up or shut down.** **Natural gas firing**	**Limit (including unit) - these limits do not apply during start up or shut down.** **Refinery Off Gas (ROG)** **Other gas firing**	**Limit (including unit) - these limits do not apply during start up or shut down.** **Distillate fuel oil firing**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A1 [No.1 Gas Turbine/HRSG. Point A1 on site plan in Schedule 7]	Sulphur Dioxide	LCP No.188 GT/HRSG No.1	70 mg/m^3 70% load and above	70 mg/m^3 70% load and above	See Note 1	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A1 [No.1 Gas Turbine/HRSG. Point A1 on site plan in Schedule 7]	Dust	LCP No.188 GT/HRSG No.1	No ELV specified in IED	No ELV specified in IED	No ELV specified in IED	-	-	-
A2 [No.2 Gas Turbine/HRSG. Point A2 on site plan in Schedule 7]	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	LCP No.188 GT/HRSG No.2	50 mg/m^3 70% load and above	120 mg/m^3 70% load and above	90 mg/m^3 70% load and above	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A2 [No.2 Gas Turbine/HRSG. Point A2 on site plan in Schedule 7]	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	LCP No.188 GT/HRSG No.2	55 mg/m^3 70% load and above 55 mg/m^3 MSUL/MSDL to base load	132 mg/m^3 70% load and above 132 mg/m^3 MSUL/MSDL to base load	99 mg/m^3 70% load and above 99 mg/m^3 MSUL/MSDL to base load	Daily mean of validated hourly averages	Continuous	BS EN 14181

Table S3.1 Point source emissions to air, emission limits and monitoring requirements for LCP emission points from GT's >100MWth and auxiliary boilers 100 to 300MWth.								
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit) - these limits do not apply during start up or shut down.** **Natural gas firing**	**Limit (including unit) - these limits do not apply during start up or shut down.** **Refinery Off Gas (ROG)** **Other gas firing**	**Limit (including unit) - these limits do not apply during start up or shut down.** **Distillate fuel oil firing**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A2 [No.2 Gas Turbine/HRSG. Point A2 on site plan in Schedule 7]	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	LCP No.188 GT/HRSG No.2	100 mg/m^3 70% load and above	240 mg/m^3 70% load and above	180 mg/m^3 70% load and above	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A2 [No.2 Gas Turbine/HRSG. Point A2 on site plan in Schedule 7]	Carbon Monoxide	LCP No.188 GT/HRSG No.2	100 mg/m^3 70% load and above	No ELV specified in IED	100 mg/m^3 70% load and above	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A2 [No.2 Gas Turbine/HRSG. Point A2 on site plan in Schedule 7]	Carbon Monoxide	LCP No.188 GT/HRSG No.2	110 mg/m^3 70% to load and above 110 mg/m^3 MSUL/MSDL to base load		110 mg/m^3 70% to load and above 110 mg/m^3 MSUL/MSDL to base load	Daily mean of validated hourly averages	Continuous	BS EN 14181
A2 [No.2 Gas Turbine/HRSG. Point A2 on site plan in Schedule 7]	Carbon Monoxide	LCP No.188 GT/HRSG No.2	200 mg/m^3 70% load and above		200 mg/m^3 70% load and above	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A2 [No.2 Gas Turbine/HRSG. Point A2 on site plan in Schedule 7]	Sulphur Dioxide	LCP No.188 GT/HRSG No.2	35 mg/m^3 70% load and above	35 mg/m^3 70% load and above	See Note 1	Monthly mean of validated hourly averages	Continuous	BS EN 14181

Table S3.1 Point source emissions to air, emission limits and monitoring requirements for LCP emission points from GT's >100MWth and auxiliary boilers 100 to 300MWth.								
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit) - these limits do not apply during start up or shut down.** **Natural gas firing**	**Limit (including unit) - these limits do not apply during start up or shut down.** **Refinery Off Gas (ROG)** **Other gas firing**	**Limit (including unit) - these limits do not apply during start up or shut down.** **Distillate fuel oil firing**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A2 [No.2 Gas Turbine/HRSG. Point A2 on site plan in Schedule 7]	Sulphur Dioxide	LCP No.188 GT/HRSG No.2	39 mg/m^3 70% load and above	39 mg/m^3 70% load and above	See Note 1	Daily mean of validated hourly averages	Continuous	BS EN 14181
A2 [No.2 Gas Turbine/HRSG. Point A2 on site plan in Schedule 7]	Sulphur Dioxide	LCP No.188 GT/HRSG No.2	70 mg/m^3 70% load and above	70 mg/m^3 70% load and above	See Note 1	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A2 [No.2 Gas Turbine/HRSG. Point A2 on site plan in Schedule 7]	Dust	LCP No.188 GT/HRSG No.2	No ELV specified in IED	No ELV specified in IED	No ELV specified in IED	-	-	-
A5 [No.3 Gas Turbine/HRSG. Point A5 on site plan in Schedule 7]	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	LCP No. 415 GT/HRSG No.3	50 mg/m^3 70% load and above	120 mg/m^3 70% load and above	No gas oil firing	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A5 [No.3 Gas Turbine/HRSG. Point A5 on site plan in Schedule 7]	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	LCP No. 415 GT/HRSG No.3	55 mg/m^3 70% load and above 55 mg/m^3 MSUL/MSDL to base load	132 mg/m^3 70% load and above 132 mg/m^3 MSUL/MSDL to base load	No gas oil firing	Daily mean of validated hourly averages	Continuous	BS EN 14181

Table S3.1 Point source emissions to air, emission limits and monitoring requirements for LCP emission points from GT's >100MWth and auxiliary boilers 100 to 300MWth.								
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit) - these limits do not apply during start up or shut down.** **Natural gas firing**	**Limit (including unit) - these limits do not apply during start up or shut down.** **Refinery Off Gas (ROG)** **Other gas firing**	**Limit (including unit) - these limits do not apply during start up or shut down.** **Distillate fuel oil firing**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A5 [No.3 Gas Turbine/HRSG. Point A5 on site plan in Schedule 7]	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	LCP No. 415 GT/HRSG No.3	100 mg/m^3 70% load and above	240 mg/m^3 70% load and above	No gas oil firing	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A5 [No.3 Gas Turbine/HRSG. Point A5 on site plan in Schedule 7]	Carbon Monoxide	LCP No. 415 GT/HRSG No.3	100 mg/m^3 70% load and above	No ELV specified in IED	No gas oil firing	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A5 [No.3 Gas Turbine/HRSG. Point A5 on site plan in Schedule 7]	Carbon Monoxide	LCP No. 415 GT/HRSG No.3	110 mg/m^3 70% load and above 110mg/m^3 MSUL/MSDL to base load	No ELV specified in IED	No gas oil firing	Daily mean of validated hourly averages	Continuous	BS EN 14181
A5 [No.3 Gas Turbine/HRSG. Point A5 on site plan in Schedule 7]	Carbon Monoxide	LCP No. 415 GT/HRSG No.3	200 mg/m^3 70% load and above	No ELV specified in IED	No gas oil firing	95% of validated hourly averages within a calendar `year	Continuous	BS EN 14181

Table S3.1 Point source emissions to air, emission limits and monitoring requirements for LCP emission points from GT's >100MWth and auxiliary boilers 100 to 300MWth.								
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit) - these limits do not apply during start up or shut down.** **Natural gas firing**	**Limit (including unit) - these limits do not apply during start up or shut down.** **Refinery Off Gas (ROG)** **Other gas firing**	**Limit (including unit) - these limits do not apply during start up or shut down.** **Distillate fuel oil firing**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A5 [No.3 Gas Turbine/HRSG. Point A5 on site plan in Schedule 7]	Sulphur Dioxide	LCP No.415 GT/HRSG No.3	35 mg/m^3 70% load and above	35 mg/m^3 70% load and above	No gas oil firing	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A5 [No.3 Gas Turbine/HRSG. Point A5 on site plan in Schedule 7]	Sulphur Dioxide	LCP No.415 GT/HRSG No.3	39 mg/m^3 70% load and above	39 mg/m^3 70% load and above	No gas oil firing	Daily mean of validated hourly averages	Continuous	BS EN 14181
A5 [No.3 Gas Turbine/HRSG. Point A5 on site plan in Schedule 7]	Sulphur Dioxide	LCP No.415 GT/HRSG No.3	70 mg/m^3 70% load and above	70 mg/m^3 70% load and above	No gas oil firing	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A5 [No.3 Gas Turbine/HRSG. Point A5 on site plan in Schedule 7]	Dust	LCP No. 415 GT/HRSG No.3	No ELV specified in IED	No ELV specified in IED	No gas oil firing	-	-	-
A3 [Auxiliary Boiler No.1. Point A3 on site plan in Schedule 7]	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	LCP No. 188 AB1	100 mg/m^3 16% load and above	200 mg/m^3 16% load and above	200 mg/m^3 16% load and above	Monthly mean of validated hourly averages	Continuous	BS EN 14181

Table S3.1 Point source emissions to air, emission limits and monitoring requirements for LCP emission points from GT's >100MWth and auxiliary boilers 100 to 300MWth.								
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit) - these limits do not apply during start up or shut down.** **Natural gas firing**	**Limit (including unit) - these limits do not apply during start up or shut down.** **Refinery Off Gas (ROG)** **Other gas firing**	**Limit (including unit) - these limits do not apply during start up or shut down.** **Distillate fuel oil firing**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A3 [Auxiliary Boiler No.1. Point A3 on site plan in Schedule 7]	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	LCP No. 188 AB1	110 mg/m^3 16% load and above 110 mg/m^3 MSUL/MSDL to base load	220 mg/m^3 16% load and above 220 mg/m^3 MSUL/MSDL to base load	220 mg/m^3 16% load and above 220 mg/m^3 MSUL/MSDL to base load	Daily mean of validated hourly averages	Continuous	BS EN 14181
A3 [Auxiliary Boiler No.1. Point A3 on site plan in Schedule 7]	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	LCP No. 188 AB1	200 mg/m^3 16% load and above	400 mg/m^3 16% load and above	400 mg/m^3 16% load and above	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A3 [Auxiliary Boiler No.1. Point A3 on site plan in Schedule 7]	Carbon Monoxide	LCP No. 188 AB1	100 mg/m^3 16% load and above	No ELV specified in IED	No ELV specified in IED	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A3 [Auxiliary Boiler No.1. Point A3 on site plan in Schedule 7]	Carbon Monoxide	LCP No. 188 AB1	110 mg/m^3 16% load and above 110 mg/m^3 MSUL/MSDL to base load	No ELV specified in IED	No ELV specified in IED	Daily mean of validated hourly averages	Continuous	BS EN 14181

Table S3.1 Point source emissions to air, emission limits and monitoring requirements for LCP emission points from GT's >100MWth and auxiliary boilers 100 to 300MWth.								
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit) - these limits do not apply during start up or shut down.** **Natural gas firing**	**Limit (including unit) - these limits do not apply during start up or shut down.** **Refinery Off Gas (ROG)** **Other gas firing**	**Limit (including unit) - these limits do not apply during start up or shut down.** **Distillate fuel oil firing**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A3 [Auxiliary Boiler No.1. Point A3 on site plan in Schedule 7]	Carbon Monoxide	LCP No. 188 AB1	200 mg/m^3 16% load and above	No ELV specified in IED	No ELV specified in IED	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A3 [Auxiliary Boiler No.1. Point A3 on site plan in Schedule 7]	Sulphur Dioxide	LCP No. 188 AB1	35 mg/m^3 16% load and above	35 mg/m^3 16% load and above	250 mg/m^3 16% load and above	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A3 [Auxiliary Boiler No.1. Point A3 on site plan in Schedule 7]	Sulphur Dioxide	LCP No. 188 AB1	39 mg/m^3 16% load and above	39 mg/m^3 16% load and above	275 mg/m^3 16% load and above	Daily mean of validated hourly averages	Continuous	BS EN 14181
A3 [Auxiliary Boiler No.1. Point A3 on site plan in Schedule 7]	Sulphur Dioxide	LCP No. 188 AB1	70 mg/m^3 16% load and above	70 mg/m^3 16% load and above	500 mg/m^3 16% load and above	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A3 [Auxiliary Boiler No.1. Point A3 on site plan in Schedule 7]	Dust	LCP No. 188 AB1	5 mg/m^3 16% load and above	5 mg/m^3 16% load and above	-	-	At least every 6 months	BS EN 13284-1

Table S3.1 Point source emissions to air, emission limits and monitoring requirements for LCP emission points from GT's >100MWth and auxiliary boilers 100 to 300MWth.								
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit) - these limits do not apply during start up or shut down.** **Natural gas firing**	**Limit (including unit) - these limits do not apply during start up or shut down.** **Refinery Off Gas (ROG)** **Other gas firing**	**Limit (including unit) - these limits do not apply during start up or shut down.** **Distillate fuel oil firing**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A3 [Auxiliary Boiler No.1. Point A3 on site plan in Schedule 7]	Dust	LCP No. 188 AB1	-	-	No more than 500 hours per calendar year with a maximum period of 240 hours	-	-	-
A4 [Auxiliary Boiler No.2. Point A4 on site plan in Schedule 7]	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	LCP No. 188 AB2	100 mg/m^3 16% load and above	200 mg/m^3 16% load and above	200 mg/m^3 16% load and above	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A4 [Auxiliary Boiler No.2. Point A4 on site plan in Schedule 7]	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	LCP No. 188 AB2	110 mg/m^3 16% load and above 110 mg/m^3 MSUL/MSDL to base load	220 mg/m^3 16% load and above 220 mg/m^3 MSUL/MSDL to base load	220 mg/m^3 16% load and above 220 mg/m^3 MSUL/MSDL to base load	Daily mean of validated hourly averages	Continuous	BS EN 14181
A4 [Auxiliary Boiler No.2. Point A4 on site plan in Schedule 7]	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	LCP No. 188 AB2	200 mg/m^3 16% load and above	400 mg/m^3 16% load and above	400 mg/m^3 70% load and above	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A4 [Auxiliary Boiler No.2. Point A4 on site plan in Schedule 7]	Carbon Monoxide	LCP No. 188 AB2	100 mg/m^3 16% load and above	No ELV specified in IED	No ELV specified in IED	Monthly mean of validated hourly averages	Continuous	BS EN 14181

Table S3.1 Point source emissions to air, emission limits and monitoring requirements for LCP emission points from GT's >100MWth and auxiliary boilers 100 to 300MWth.								
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit) - these limits do not apply during start up or shut down.** **Natural gas firing**	**Limit (including unit) - these limits do not apply during start up or shut down.** **Refinery Off Gas (ROG)** **Other gas firing**	**Limit (including unit) - these limits do not apply during start up or shut down.** **Distillate fuel oil firing**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A4 [Auxiliary Boiler No.2. Point A4 on site plan in Schedule 7]	Carbon Monoxide	LCP No. 188 AB2	110 mg/m^3 16% load and above 110 mg/m^3 MSUL/MSDL to base load	No ELV specified in IED	No ELV specified in IED	Daily mean of validated hourly averages	Continuous	BS EN 14181
A4 [Auxiliary Boiler No.2. Point A4 on site plan in Schedule 7]	Carbon Monoxide	LCP No. 188 AB2	200 mg/m^3 16% load and above	No ELV specified in IED	No ELV specified in IED	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A4 [Auxiliary Boiler No.2. Point A4 on site plan in Schedule 7]	Sulphur Dioxide	LCP No. 188 AB2	35 mg/m^3 16% load and above	35 mg/m^3 16% load and above	250 mg/m^3 16% load and above	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A4 [Auxiliary Boiler No.2. Point A4 on site plan in Schedule 7]	Sulphur Dioxide	LCP No. 188 AB2	39 mg/m^3 16% load and above	39 mg/m^3 16% load and above	275 mg/m^3 16% load and above	Daily mean of validated hourly averages	Continuous	BS EN 14181
A4 [Auxiliary Boiler No.2. Point A4 on site plan in Schedule 7]	Sulphur Dioxide	LCP No. 188 AB2	70 mg/m^3 16% load and above	70 mg/m^3 16% load and above	500 mg/m^3 16% load and above	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181

Table S3.1 Point source emissions to air, emission limits and monitoring requirements for LCP emission points from GT's >100MWth and auxiliary boilers 100 to 300MWth.								
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit) - these limits do not apply during start up or shut down.** **Natural gas firing**	**Limit (including unit) - these limits do not apply during start up or shut down.** **Refinery Off Gas (ROG)** **Other gas firing**	**Limit (including unit) - these limits do not apply during start up or shut down.** **Distillate fuel oil firing**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A4 [Auxiliary Boiler No.2. Point A4 on site plan in Schedule 7]	Dust	LCP No. 188 AB2	5 mg/m^3 16% load and above	5 mg/m^3 16% load and above	-	-	At least every 6 months	BS EN 13284-1
A4 [Auxiliary Boiler No.2. Point A4 on site plan in Schedule 7]	Dust	LCP No. 188 AB2	-	-	No more than 500 hours per calendar year with a maximum period of 240 hours	-	-	-
A1 to A5 [Points A1 to A5 on site plan in Schedule 7]	Oxygen	LCP No. 188 LCP No. 415	-	-	-	-	Continuous as appropriate to reference	BS EN 14181
A1 to A5 [Points A1 to A5 on site plan in Schedule 7]	Water Vapour	LCP No. 188 LCP No. 415	-	-	-	-	Continuous as appropriate to reference	BS EN 14181
A1 to A5 [Points A1 to A5 on site plan in Schedule 7]	Stack gas temperature	LCP No. 188 LCP No. 415	-	-	-	-	Continuous as appropriate to reference	Traceable to national standards
A1 to A5 [Points A1 to A5 on site plan in Schedule 7]	Stack gas pressure	LCP No. 188 LCP No. 415	-	-	-	-	Continuous as appropriate to reference	Traceable to national standards

Table S3.1 Point source emissions to air, emission limits and monitoring requirements for LCP emission points from GT's >100MWth and auxiliary boilers 100 to 300MWth.								
Emission point ref. & location	**Parameter**	**Source**	**Limit (including unit) - these limits do not apply during start up or shut down.** **Natural gas firing**	**Limit (including unit) - these limits do not apply during start up or shut down.** **Refinery Off Gas (ROG)** **Other gas firing**	**Limit (including unit) - these limits do not apply during start up or shut down.** **Distillate fuel oil firing**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A1 to A5 [Points A1 to A5 on site plan in Schedule 7]	As required by the Method Implementation Document for BS EN 15259	LCP No. 188 LCP No. 415	-	-	-	-	Pre-operation and when there is a significant operational change	BS EN 15259
Note 1: Emission of sulphur dioxide when firing distillate fuel oil is determined by calculation based on the limits in the sulphur in fuels regulations. (SI 2007. No.79) See Table S2.1.								

Table S3.2 Point Source emissions to water (other than sewer) – emission limits and monitoring requirements								
Emission point ref. & location	**Parameter**	**Source**	**M1 Limit (incl. unit)**	**M3 Limit (incl. unit)**	**M2 Limit (incl. unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
W1 Discharge to South Killingholme drain [NGR 51713 41701]	Flow	Site process effluent and surface water drainage	10,000 m^3 per day		-	-	Continuous	-
W1 Discharge to South Killingholme drain [NGR 51713 41701]	PH	Site process effluent and surface water drainage	6.5 – 8.5[1]	6.5 – 8.5[1]	6 - 9	-	Continuous	-
W1 Discharge to South Killingholme drain [NGR 51713 41701]	Temperature	Site process effluent and surface water drainage	30°C[1]	30°C[1]	30°C	-	Continuous	-
W1 Discharge to South Killingholme drain [NGR 51713 41701]	Oil	Site process effluent and surface water drainage	5 mg/l	5 mg/l	-	-	Weekly	-
W1 Discharge to South Killingholme drain [NGR 51713 41701]	Ammoniacal Nitrogen	Site process effluent and surface water drainage	10 mg/l	10 mg/l	-	-	Weekly	-
W1 Discharge to South Killingholme drain [NGR 51713 41701]	Total suspended solids	Site process effluent and surface water drainage	50 mg/l	50 mg/l	50 mg/l	-	Weekly	-

Table S3.2 Point Source emissions to water (other than sewer) – emission limits and monitoring requirements								
Emission point ref. & location	**Parameter**	**Source**	**M1 Limit (incl. unit)**	**M3 Limit (incl. unit)**	**M2 Limit (incl. unit)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
W1 Discharge to South Killingholme drain [NGR 51713 41701]	COD	Site process effluent and surface water drainage	200 mg/l	200 mg/l	-	-	Weekly	-
W1 Discharge to South Killingholme drain [NGR 51713 41701]	Dissolved oxygen	Site process effluent and surface water drainage	>50%	-	-	-	Weekly	-
Note 1. A target for typical operation, but not subject to notification requirements.								

Schedule 4 – Reporting

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

Table S4.1 Reporting of monitoring data			
Parameter	**Emission or monitoring point/reference**	**Reporting period**	**Period begins**
Emissions to air Parameters as required by condition 3.5.1	A1, A2, A3, A4, A5	Every 3 months	1 January, 1 April, 1 July, 1 October
Emissions to water Parameters as required by condition 3.5.1	W1/M1, W1/M2, W1/M3	Every 3 months	1 January, 1 April, 1 July, 1 October
CEMS invalidation log	A1, A2, A3, A4, A5	Every 3 months	1 January, 1 April, 1 July, 1 October

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

Table S4.3 Performance parameters		
Parameter	**Frequency of assessment**	**Units**
Thermal Input Capacity for each LCP	Annually	MW

Table S4.3 Performance parameters		
Parameter	**Frequency of assessment**	**Units**
Annual Fuel Usage for each LCP	Annually	TJ
Total Emissions to Air of NO_x for each LCP	Annually	t
Total Emissions to Air of SO_2 for each LCP	Annually	t
Total Emissions to Air of CO for each LCP	Annually	t
Total Emissions to Air of dust for each LCP	Annually	t

Table S4.4 Reporting forms				
Media/ parameter	**Reporting format**	**Starting Point**	**Agency recipient**	**Date of form**
	Form IED HR1 – operating hours	01/01/16	National & Area Office	31/12/15
Air	Form IED AR1 – SO_2, NO_x and dust mass emission and energy For all LCPs	01/01/16	National & Area Office	31/12/15
Air	Form IED PM1 - discontinuous monitoring for SO2, NOx, Dust and load.	01/01/16	Area Office	31/12/15
Air	Form IED CON1 - SO_2, NO_x and dust concentration emissions, CEMS reporting for utility boilers only	01/01/16	Area Office	31/12/15
Air	Form IED CON2 – SO_2, NO_x and dust concentration emissions, CEMS reporting for GTs only	01/01/16	Area Office	31/12/15
Air	Form CEMS invalidation log	01/01/16	Area Office	31/12/15
Water	Form Water 1 or other form as agreed in writing by the Environment Agency	01/01/16	Area Office	31/12/15
Resource Efficiency	Form REM1 – resource efficiency annual report	01/01/16	National & Area Office	31/12/15
Other performance indicators	Form performance 1 or other form as agreed in writing by the Environment Agency	01/01/16	Area Office	31/12/15

Schedule 5 – Notification

These pages outline the information that the operator must provide.

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

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

Part A

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

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

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

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

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

Part B – to be submitted as soon as practicable

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

Name*	
Post	
Signature	
Date	

* authorised to sign on behalf of the operator

Schedule 6 – Interpretation

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

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

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

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

“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;

“base load” means: (i) as a mode of operation, operating for >4000hrs pa; and (ii) as a load, the maximum load under ISO conditions that can be sustained continuously, i.e. maximum continuous rating.

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

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

“CEN” means Commité Européen de Normalisation.

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

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

“DLN” means dry, low NO_x burners.

“dynamic emission limit value” (DELV) means an emission limit that varies in accordance with Article 40 of the Industrial Emissions Directive.

“emissions to land” includes emissions to groundwater.

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

“EP Regulations” means The Environmental Permitting (England and Wales) Regulations SI 2010 No.675 and words and expressions used in this permit which are also used in the Regulations have the same meanings as in those Regulations.

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

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

“Industrial Emissions Directive” means DIRECTIVE 2010/75/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 24 November 2010 on industrial emissions.

“large combustion plant” or “LCP” is a combustion plant or group of combustion plants discharging waste gases through a common windshield or stack, where the total thermal input is 50 MW or more, based on net calorific value. The calculation of thermal input, excludes individual combustion plants with a rated thermal input below 15MW.

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

“MCERTS” means the Environment Agency’s Monitoring Certification Scheme.

“MCR” means maximum continuous rating.

“MSDL” means minimum shut-down load as defined in Implementing Decision 2012/249/EU.

“MSUL” means minimum start-up load as defined in Implementing Decision 2012/249/EU.

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

“ncv” means net calorific value.

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

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

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

“Standby fuel” means alternative liquid fuels that are used in emergency situations when the gas fuel which is normally used, is not available.

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.

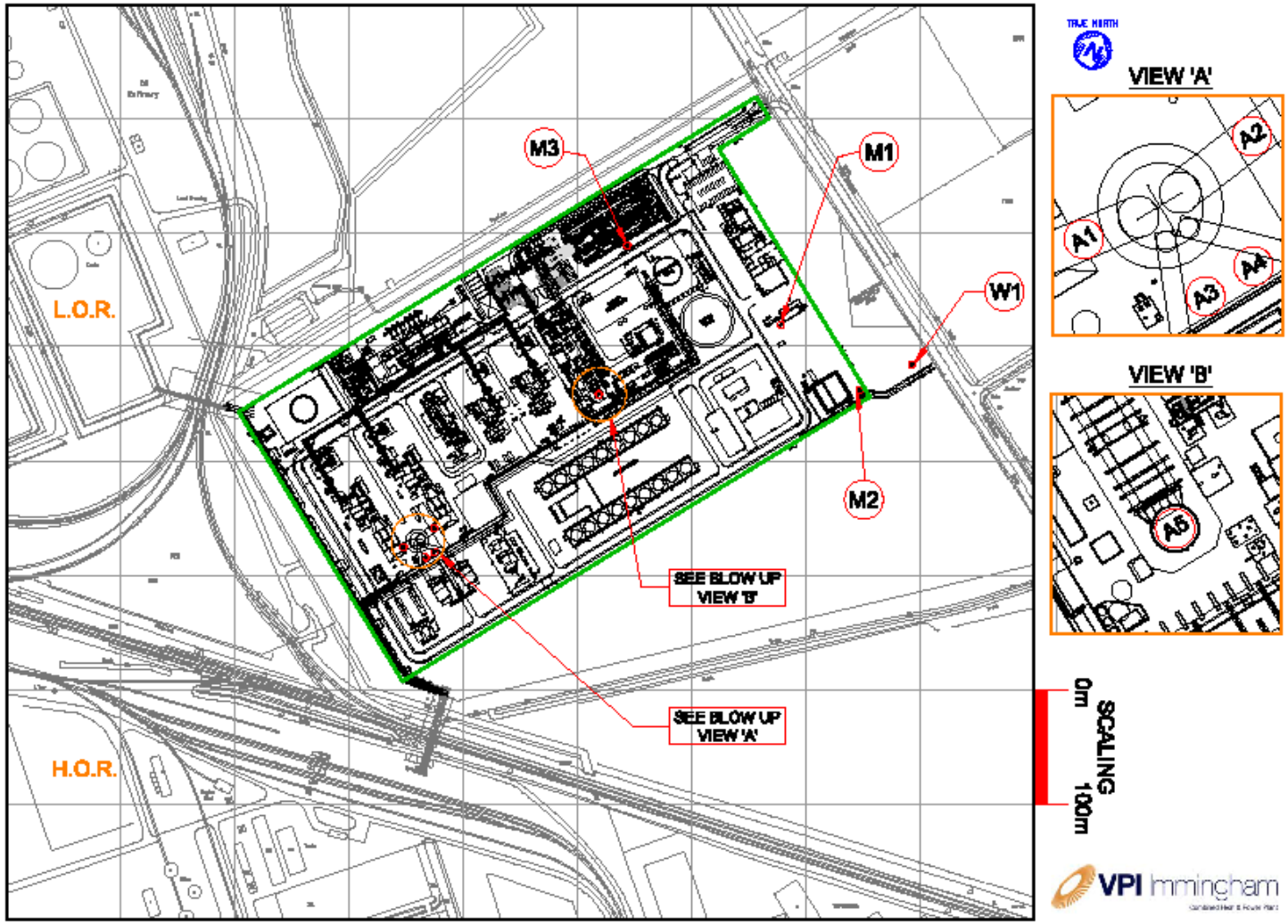
Unless otherwise stated, any references in this permit to concentrations of substances in emissions into air means:

- 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.

‘hazardous substance’ means a substance classified as hazardous as a consequence of fulfilling the criteria laid down in parts 2 to 5 of Annex I to Regulation (EC) No 1272/2008

Schedule 7 – Site plan



END OF PERMIT