

Notice of variation and consolidation with introductory note

Environmental Permitting (England & Wales) Regulations 2010

Cofely Industrial Energy Services Limited

Barry Cogeneration Plant
Barry Silicon Based Manufacturing Installation
Winbourne Road
Dock No2
Barry
CF63 3DH

Variation application number
EPR/JP3632ZH/V002

Permit number
EPR/JP3632ZH

Barry Cogeneration Plant

Permit number EPR/JP3632ZH

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 Wales 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 Natural Resources Wales 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 Transitional National Plan (TNP) compliance route. This is a change from the previous operating regime which was Large Combustion Plant Directive ELV compliance.

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

- LCP235 is changed to LCP60.

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

Cofely Industrial Energy Services Limited operate a CHP cogeneration facility providing steam and electricity to Dow Corning and also exporting electricity to the National Grid. The Barry Cogeneration CHP Plant installation consists of seven combustion plant using natural gas as the primary fuel with distillate fuel oil as the standby fuel, with a total thermal input of 236MW. There are two cogeneration units, each consisting of a 21 MWth Siemens SGT-200 gas turbine, with associated 6 MWe generator, and a 38.5 MWth High Pressure (HP) heat recovery steam generator (HRSG) with supplementary firing, which use waste heat from the gas turbines.

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 BX4135IJ	Received 17/08/05	
Request to extend determination date	13/12/05	20/12/05
RFI response	27/01/06	13/03/06

Status log of the permit		
Description	Date	Comments
RFI	26/06/06	26/06/06
Permit Issued	30/06/06	
Application for Variation EA/EPR/BX4135IJ/V002	Duly made 06/07/09	Application to change the monitoring arrangements for the medium pressure boilers (A4 and A5)
Variation determined EA/EPR/BX4135IJ/V002	31/11/2009	
Application EPR/JP3632ZH/T001 (full transfer of permit EPR/BX4135IJ)	Duly made 25/01/13	Application to transfer the permit in full to Cofely Industrial Energy Services Limited.
Transfer determined EPR/JP3632ZH	28/02/13	Full transfer of permit complete.
Regulation 60 Notice sent to the Operator	14/11/14	Issue of a Notice under Regulation 60(1) of the EPR. Natural Resources Wales 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	30/03/15	Response received from the Operator.
Additional information received	15/07/15	Response to request for further information (RFI) dated 09/06/15.
Additional information received	22/11/15	Additional information received from the Operator.
Variation determined EPR/JP3632ZH/V002	30/12/15	Varied and consolidated permit issued in modern condition format. Variation effective from 01/01/2016.

Other Part A installation permits relating to this installation		
Operator	Permit number	Date of issue
Dow Corning Limited	BR9685IX	06/06/06
Cabot Carbon Limited	BU2110IS	31/03/06
Vopak Terminal Windmill Limited	KP3734SH	01/06/06

End of introductory note

Notice of variation and consolidation

The Environmental Permitting (England and Wales) Regulations 2010

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

Permit number

EPR/JP3632ZH

Issued to

Cofely Industrial Energy Services Limited ("the operator")

whose registered office is

Shared Services Centre Q3 Office

Quorum Business Park

Benton Lane

Newcastle Upon Tyne

NE12 8EX

company registration number **01732859**

to operate part of a regulated facility at

Barry Cogeneration Plant

Barry Silicon Based Manufacturing Installation

Winbourne Road

Dock No2

Barry

CF63 3DH

to the extent set out in the schedules.

The notice shall take effect from 01/01/2016

Name	Date
	30/12/2015

Kevin Ashcroft – Senior Permitting Officer

Authorised on behalf of Natural Resources Wales

Schedule 1

All conditions have been varied by the consolidated permit as a result of a Natural Resources Wales initiated variation.

Schedule 2 – consolidated permit

Consolidated permit issued as a separate document.

Permit with introductory note

The Environmental Permitting (England & Wales) Regulations 2010

Cofely Industrial Energy Services Limited

Barry Cogeneration Plant
Barry Silicon Based Manufacturing Installation
Winbourne Road
Dock No2
Barry
CF63 3DH

Permit number
EPR/JP3632ZH

Barry Cogeneration Plant

Permit number EPR/JP3632ZH

Introductory note

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

This permit controls the operation of a large combustion plant. The relevant listed activity is Section 1.1 A(1)(a): Burning any fuel in an appliance with a rated thermal input of 50 megawatts or more. The permit implements the Chapter III requirements for large combustion plant (LCP) of the EU Directive on Industrial Emissions.

The permit relates to a listed, directly associated activity to the Barry Silicon Based Manufacturing Installation. Cofely Industrial Energy Services Limited operate a CHP cogeneration facility providing steam and electricity to Dow Corning and also exporting electricity to the National Grid.

The CHP plant consists of seven combustion plant using natural gas as the primary fuel with distillate fuel oil as the standby fuel. There are two cogeneration units, each consisting of a 21 MWth gas turbine, with associated 6 MWe generator, and a 38.5 MWth High Pressure (HP) heat recovery steam generator (HRSG) with supplementary firing, which use waste heat from the gas turbines. The two HRSGs can also operate in auxiliary mode (cold air firing) and are rated at 70MWth. The third HP fired boiler is rated at 69MWth and normally operates at a low steam load. The steam from the HP boilers is directed to the high pressure (HP) steam main and passes through a steam turbine (14.5 MWe) to generate electricity. The exhaust steam from the steam turbine then passes into the medium pressure (MP) steam main for the use of the Dow Corning plant, where it is used for process heating. Alternatively the HP steam can be passed through a pressure reducing valve, de-superheated by water injection and then join the MP steam main, for example if the steam turbine is undergoing maintenance. The reduction of load on the HP boiler allows for more efficient steam raising by using the HRSGs in preference. A variable speed drive is installed on the fired boiler draught fan. Two 24 MWth medium pressure (MP) boilers provide steam security to Dow Corning, for instance during maintenance of one of the HP boilers. The MP boilers are only infrequently used. Emission reduction techniques include the use of natural gas as the primary fuel, steam injection to reduce oxides of nitrogen from the gas turbines and staged low NOx burners on the MP boilers.

Directly associated activities include a water treatment plant, natural gas compressors, high voltage electrical substations, distillate fuel oil storage and waste water pre-treatment. Raw water to the water treatment plant is obtained by demineralising a supply from the Biglis well (provided by Dow Corning). The water treatment plant uses cation/anion exchange and high efficiency reverse osmosis (HERO) to provide high purity water for boiler feed- make-up and process use. The water treatment plant is also the main area of waste generation, which consumes hydrochloric acid and sodium hydroxide for regeneration of the ion exchange resins. After regeneration the resulting effluent is collected in a storage tank for neutralisation prior to discharge to effluent system. Effluent also arises from boiler blowdown. Process effluent is discharged to the Dow Corning chemical effluent and oily water sewer, receives further treatment by Dow Corning and is discharged to the Cadoxton River. Uncontaminated surface water run-off is discharged to the Dow Corning surface water system and then to the Cadoxton River. Uncontaminated roof water is discharged to soakaway. There are two SSSIs within 2 km of the site, specifically the Severn Estuary and Sully Island, and a European site within 10 km of the site, being the Severn Estuary SPC/RAMSAR (<100 m). Assessment during the application determination has indicated that emissions from the installation are unlikely to have a significant impact on any of the designated sites.

The Operator supplies energy to operators who are members of a Climate Change Levy Agreement (CCLA) and is partially certified as Good Quality CHP. The Operator's environmental management system is externally accredited to ISO 14001.

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Other Part A installation permits relating to this installation		
Operator	Permit number	Date of issue
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Cabot Carbon Limited	BU2110IS	31/03/06
Vopak Terminal Windmill Limited	KP3734SH	01/06/06

End of introductory note

Permit

The Environmental Permitting (England and Wales) Regulations 2010

Permit number

EPR/JP3632ZH

This is the consolidated permit referred to in the variation and consolidation notice for application EPR/JP3632ZH/V002 authorising,

Cofely Industrial Energy Services Limited ("the operator"),

whose registered office is

**Shared Services Centre Q3 Office
Quorum Business Park
Benton Lane
Newcastle Upon Tyne
NE12 8EX**

company registration number **01732859**

to operate part of a regulated facility at

**Barry Cogeneration Plant
Barry Silicon Based Manufacturing Installation
Winbourne Road
Dock No2
Barry
CF63 3DH**

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

Name	Date
	15/12/2015

Kevin Ashcroft – Senior Permitting Officer

Authorised on behalf of Natural Resources Wales

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, which is within the area edged in red on the site plan that represents the extent of the installation covered by this permit and those of the other operators of the installation.

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 Natural Resources Wales.
- 2.3.2 For the following activities referenced in schedule 1, table S1.1: LCP60. 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 Natural Resources Wales.
- 2.3.3 If notified by Natural Resources Wales that the activities are giving rise to pollution, the operator shall submit to Natural Resources Wales 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 Natural Resources Wales.
- 2.3.4 Any raw materials or fuels listed in schedule 2 table S2.1 shall conform to the specifications set out in that table.
- 2.3.5 For the following activities referenced in schedule 1, table S1.1: LCP60. 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 For the following activities referenced in schedule 1, table S1.1: LCP60. The following conditions apply where there is a malfunction or breakdown of any abatement equipment:
Unless otherwise agreed in writing by Natural Resources Wales:
- (i) if a return to normal operations is not achieved within 24 hours, the operator shall reduce or close down operations, or shall operate the activities using low polluting fuels;
 - (ii) the cumulative duration of breakdown in any 12-month period shall not exceed 120 hours; and
 - (iii) the cumulative duration of malfunction in any 12-month period shall not exceed 120 hours.
- 2.3.7 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.

2.3.8 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 Natural Resources Wales.

2.4.2 Except in the case of an improvement which consists only of a submission to Natural Resources Wales, the operator shall notify Natural Resources Wales 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(a), S3.1(b), S3.1(c), S3.1(d), S3.1(e) and S3.2.

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

3.1.3 Total annual emissions from the LCP emission points set out in schedule 3 tables S3.1(a), S3.1(b), S3.1(c), S3.1(d), S3.1(e) and S3.2 of a substance listed in schedule 3 table S3.3 shall not exceed the relevant limit in table S3.3.

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 Natural Resources Wales that the activities are giving rise to pollution, submit to Natural Resources Wales 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 Natural Resources Wales.

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 Natural Resources Wales, 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 Natural Resources Wales that the activities are giving rise to pollution outside the site due to odour, submit to Natural Resources Wales 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 Natural Resources Wales.

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 Natural Resources Wales, 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.

The operator shall:

- (a) if notified by Natural Resources Wales that the activities are giving rise to pollution outside the site due to noise and vibration, submit to Natural Resources Wales 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 Natural Resources Wales.

3.5 Monitoring

- 3.5.1 The operator shall, unless otherwise agreed in writing by Natural Resources Wales, undertake the monitoring specified in the following tables in schedule 3 to this permit:
 - (a) point source emissions specified in tables S3.1(a), S3.1(b), S3.1(c), S3.1(d), S3.1(e), S3.2 and S3.3.
- 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 Natural Resources Wales.
- 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(a), S3.1(b), S3.1(c), S3.1(d), S3.1(e), S3.2 and S3.3 unless otherwise agreed in writing by Natural Resources Wales.

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 Natural Resources Wales 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 Natural Resources Wales 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 Natural Resources Wales.
- 3.6.6 Where required by a condition of this permit to check the measurement equipment, the operator shall submit a report to Natural Resources Wales 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, tables S3.1(a), S3.1(b), S3.1(c), S3.1(d) and S3.1(e); the Continuous Emission Monitors shall be used such that:
- a) for the continuous measurement systems fitted to the LCP release points defined in tables S3.1(a), S3.1(b), S3.1(c), S3.1(d) and S3.1(e) 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 Natural Resources Wales, 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 Natural Resources Wales.

4.2 Reporting

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

4.2.2 A report or reports on the performance of the activities over the previous year shall be submitted to Natural Resources Wales by 31 January (or other date agreed in writing by Natural Resources Wales) 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 annual production /treatment data set out in schedule 4 table S4.2; and
- (c) the performance parameters set out in schedule 4 table S4.3 using the forms specified in table S4.4 of that schedule.

4.2.3 Within 28 days of the end of the reporting period the operator shall, unless otherwise agreed in writing by Natural Resources Wales, 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 Natural Resources Wales, 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.

4.2.5 Within 10 days of the notification of abatement equipment malfunction or breakdown (condition 2.3.6) the operator shall submit an Air Quality Risk Assessment as outlined in the IED Compliance Protocol (condition 2.3.2).

4.2.6 For the following activities referenced in schedule 1, table S1.1: LCP60. Unless otherwise agreed in writing with Natural Resources Wales, within 1 month of the end of each quarter, the operator shall submit to the TNP Register and Natural Resources Wales using the form IED RTA1, listed in table S4.4, the information specified on the form relating to the site's mass emissions.

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 Natural Resources Wales,
 - (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 Natural Resources Wales, 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.
 - (d) of any malfunction or breakdown of abatement equipment relating to condition 2.3.6, the operator shall notify Natural Resources Wales within 48 hours unless notification has already been made under (a) to (c) above.
- 4.3.2 Any information provided under condition 4.3.1 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 Natural Resources Wales has requested in writing that it shall be notified when the operator is to undertake monitoring and/or spot sampling, the operator shall inform Natural Resources Wales when the relevant monitoring and/or spot sampling is to take place. The operator shall provide this information to Natural Resources Wales at least 14 days before the date the monitoring is to be undertaken.
- 4.3.4 Natural Resources Wales 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) Natural Resources Wales 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 Natural Resources Wales 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, Natural Resources Wales 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 Natural Resources Wales 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
AR1	Section 1.1 A(1) (a): Burning any fuel in an appliance with a rated thermal input of 50 megawatts or more.	LCP60: Combined heat and power (CHP) production of steam and electricity.	From receipt of raw materials to despatch of products and waste.
Directly Associated Activity			
AR2	Directly associated activity	Oil storage	From receipt of raw materials to dispatch for use.
AR3	Directly associated activity	Water treatment	From receipt of raw materials to demineralisation to storage for neutralisation prior to dispatch to an offsite chemical effluent and oily water system.

Table S1.2 Operating techniques		
Description	Parts	Date Received
Application	The response to questions 2.1 and 2.2 and 2.10 given in sections 1, 2.3, and 2.10 of the application.	17/08/05
Response to regulation 60(1) Notice – request for information dated 14/11/14	Compliance route and operating techniques identified in response to questions 2 (LCP compliance route), 3 (TNP evidence of notification), 4 (LCP configuration), 5 (LCP net rated thermal input), 6 (MSUL/MSDL) and 7 (Sector compliance for coal fired power stations entering into the TNP).	30/03/15
Receipt of additional information to the regulation 60(1) Notice. requested by letter dated 09/06/15	Further information received in response to questions 5(LCP net rated thermal input), 6 (MSUL/MSDL) and 7 (Sector compliance for coal fired power stations entering into the TNP).	15/07/15 and 22/11/15

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
IC1	The Operator shall propose in writing a method for monitoring effluent flow via release point S1. The method shall be submitted in writing to the Agency for approval including a programme for implementation.	Completed
IC2	The Operator shall review in writing the continuous emissions monitoring on release points A4 and A5 with respect to the requirements of the Large Combustion Plant Directive. The review shall be submitted to the Environment Agency along with a timetable for implementation of any improvements.	Completed
IC3	The Operator shall undertake a noise survey to determine background noise levels during plant shut down and ambient noise levels during normal operation at day and night. The survey shall satisfy the requirements of the Environment Agency's Horizontal Guidance Note IPPC H3 and BS4142: 1997. The scope of the survey and measurement locations shall be agreed with Natural Resources Wales beforehand. A report that details the findings, any necessary improvements and an agreed timetable to meet the Inorganic Chemicals Sector Guidance Note IPPC S4.03 and Combustion Sector Guidance Note IPPC S2.03 standards, shall be submitted to the Environment Agency.	Completed
IC4	The Operator shall submit a report in writing to Natural Resources Wales for approval. The report shall define and provide a written justification of the "minimum start up load" and "minimum shut-down load", for each unit within the LCP as required by the Implementing Decision 2012/249/EU in terms of: i. The output load (i.e. electricity, heat or power generated) (MW); and ii. This output load as a percentage of the rated thermal output of the combustion plant (%). And / Or iii. At least three criteria (operational parameters and / or discrete processes as detailed in the Annex) or equivalent operational parameters that suit the technical characteristics of the plant, which can be met at the end of start-up or start of shut-down as detailed in Article (9) 2012/249/EU.	30 June 2016
IC5	The Operator shall submit a report in writing to Natural Resources Wales for approval. The report shall review BAT options for achievement of the IED Chapter III Annex V ELVs for CO emissions from the gas-fired high pressure boiler (A2) and provide proposals and timescales for implementation of an option that represents BAT.	30 June 2016
IC6	The Operator shall submit two reports in writing to Natural Resources Wales for approval. The first report shall provide proposals for interim reporting of emissions in accordance with IED Chapter III Annex V, Parts 3 and 4 as far as practicable using existing data logging supplemented with manual data processing. The second report shall provide details of a programme to fully implement IED Chapter III Annex V reporting, reference periods and conditions and start up and shut down criteria by 30 June 2016.	31 January 2016 31 March 2016

Table S1.4 Start-up and Shut-down thresholds		
Emission Point and Unit Reference	“Minimum start-up load” discrete processes*	“Minimum shut-down load” discrete processes*
A1 and A3 LCP60 - gas turbines 1A and 1B in turbine exhaust gas (TEG) mode	Shaft speed >11,000 rpm and/or NOx control steam injection commissioned; and/or power output = or >6.2 MWe; 100%	Power output <6.2 MWe; 100% and/or NOx control steam injection deactivated; and/or shaft speed <11,000 rpm
A1 and A3 LCP60 - gas turbines 1A and 1B in supplementary-firing (SF) mode	Steam temperature >480°C and/or Steam pressure >60 barg; and/or Boiler steam flow rate >32 tonnes/hour	Steam temperature <480°C and/or Steam pressure <60 barg; and/or Boiler steam flow rate <32 tonnes/hour
A1, A2 and A3 LCP60 – boilers HRSG-001A, HP boiler and HRSG-001B in auxiliary-firing/fresh/ambient air/forced draft (FD) mode	Boiler steam flow rate >25 tonnes/hour; 31%	Boiler steam flow rate <25 tonnes/hour; 31%

*or alternative loads and/or processes agreed upon completion of improvement condition IC4.

Schedule 2 – Waste types, raw materials and fuels

Table S2.1 Raw materials and fuels	
Raw materials and fuel description	Specification
Sulphur content of fuel oil used in gas turbines and boilers at the Installation.	Not exceeding 0.1% w/w sulphur content
Use of distillate fuel oil in gas turbines and boilers at the Installation.	Use shall be minimised and not exceed 100 days per year.

Schedule 3 – Emissions and monitoring

Table S3.1(a) Point source emissions to air from Gas Turbines >100MWth						
Emission point ref. & location	Parameter	Source	Limit (including unit)-these limits do not apply during start up or shut down.	Reference period	Monitoring frequency	Monitoring standard or method
A1 and A3/GT-HRSG at 15% oxygen, gas fired	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	LCP60 Gas turbine fired on natural gas	125 mg/m ³ 70% to base load ¹	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A1 and A3/GT-HRSG at 15% oxygen, gas fired	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	LCP60 Gas turbine fired on natural gas	125 mg/m ³ 70% to base load ¹ and MSUL/MSDL to base load ²	Daily mean of validated hourly averages	Continuous	BS EN 14181
A1 and A3/GT-HRSG at 15% oxygen, gas fired	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	LCP60 Gas turbine fired on natural gas	125 mg/m ³ 70% to base load ¹	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A1 and A3/GT-HRSG at 15% oxygen, gas fired	Carbon monoxide	LCP60 Gas turbine fired on natural gas	80 mg/m ³ 70% to base load ¹	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A1 and A3/GT-HRSG at 15% oxygen, gas fired	Carbon monoxide	LCP60 Gas turbine fired on natural gas	80 mg/m ³ 70% to base load ¹ and MSUL/MSDL to base load ²	Daily mean of validated hourly averages	Continuous	BS EN 14181
A1 and A3/GT-HRSG at 15% oxygen, gas fired	Carbon monoxide	LCP60 Gas turbine fired on natural gas	80 mg/m ³ 70% to base load ¹	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A1 and A3/GT-HRSG at 15% oxygen, gas fired	Sulphur dioxide	LCP60 Gas turbine fired on natural gas	-	-	6 monthly by calculation	Agreed in writing with NRW

Table S3.1(a) Point source emissions to air from Gas Turbines >100MWth						
Emission point ref. & location	Parameter	Source	Limit (including unit)-these limits do not apply during start up or shut down.	Reference period	Monitoring frequency	Monitoring standard or method
A1 and A3/GT-HRSG at 15% oxygen, gas fired	Dust	LCP60 Gas turbine fired on natural gas	-	-	6 monthly by calculation	Agreed in writing with NRW
A1 and A3/GT-HRSG at 15% oxygen, gas fired	Oxygen	LCP60 Gas turbine fired on natural gas	-	-	Continuous As appropriate to reference	BS EN 14181
A1 and A3/GT-HRSG at 15% oxygen, gas fired	Water Vapour	LCP60 Gas turbine fired on natural gas	-	-	Continuous As appropriate to reference	BS EN 14181
A1 and A3/GT-HRSG at 15% oxygen, gas fired	Stack gas temperature	LCP60 Gas turbine fired on natural gas	-	-	Continuous As appropriate to reference	Traceable to national standards
A1 and A3/GT-HRSG at 15% oxygen, gas fired	Stack gas pressure	LCP60 Gas turbine fired on natural gas	-	-	Continuous As appropriate to reference	Traceable to national standards
A1 and A3/GT-HRSG at 15% oxygen, gas fired	As required by the Method Implementation Document for BS EN 15259	LCP60 Gas turbine fired on natural gas	-	-	Pre-operation and when there is a significant operational change	BS EN 15259

Note 1: This ELV applies when the load is >70% throughout the reference period.

Note 2: This ELV applies at all loads between MSUL/MSDL and base load. MSUL and MSDL are defined in table S1.4.

Table S3.1(b) Point source emissions to air from Oil fired Gas Turbines >100MWth						
Emission point ref. & location	Parameter	Source	Limit (including unit)-these limits do not apply during start up or shut down.	Reference period	Monitoring frequency	Monitoring standard or method
A1 and A3/GT-HRSG at 15% oxygen, oil fired	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	LCP60 Gas turbine fired on oil	160 mg/m ³ 70% to base load ¹	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A1 and A3/GT-HRSG at 15% oxygen, oil fired	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	LCP60 Gas turbine fired on oil	160 mg/m ³ 70% to base load ¹ and MSUL/MSDL to base load ²	Daily mean of validated hourly averages	Continuous	BS EN 14181
A1 and A3/GT-HRSG at 15% oxygen, oil fired	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	LCP60 Gas turbine fired on oil	160 mg/m ³ 70% to base load ¹	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A1 and A3/GT-HRSG at 15% oxygen, oil fired	Carbon monoxide	LCP60 Gas turbine fired on oil	80 mg/m ³ 70% to base load ¹	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A1 and A3/GT-HRSG at 15% oxygen, oil fired	Carbon monoxide	LCP60 Gas turbine fired on oil	80 mg/m ³ 70% to base load ¹ and MSUL/MSDL to base load ²	Daily mean of validated hourly averages	Continuous	BS EN 14181
A1 and A3/GT-HRSG at 15% oxygen, oil fired	Carbon monoxide	LCP60 Gas turbine fired on oil	80 mg/m ³ 70% to base load ¹	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A1 and A3/GT-HRSG at 15% oxygen, oil fired	Sulphur dioxide	LCP60 Gas turbine fired on oil	-	-	6 monthly by calculation	Agreed in writing with NRW

Table S3.1(b) Point source emissions to air from Oil fired Gas Turbines >100MWth						
Emission point ref. & location	Parameter	Source	Limit (including unit)-these limits do not apply during start up or shut down.	Reference period	Monitoring frequency	Monitoring standard or method
A1 and A3/GT-HRSG at 15% oxygen, oil fired	Dust	LCP60 Gas turbine fired on oil	-	-	6 monthly by calculation	Agreed in writing with NRW
A1 and A3/GT-HRSG at 15% oxygen, oil fired	Oxygen	LCP60 Gas turbine fired on oil	-	-	Continuous As appropriate to reference	BS EN 14181
A1 and A3/GT-HRSG at 15% oxygen, oil fired	Water Vapour	LCP60 Gas turbine fired on oil	-	-	Continuous As appropriate to reference	BS EN 14181
A1 and A3/GT-HRSG at 15% oxygen, oil fired	Stack gas temperature	LCP60 Gas turbine fired on oil	-	-	Continuous As appropriate to reference	Traceable to national standards
A1 and A3/GT-HRSG at 15% oxygen, oil fired	Stack gas pressure	LCP60 Gas turbine fired on oil	-	-	Continuous As appropriate to reference	Traceable to national standards
A1 and A3/GT-HRSG at 15% oxygen, oil fired	As required by the Method Implementation Document for BS EN 15259	LCP60 Gas turbine fired on oil	-	-	Pre-operation and when there is a significant operational change	BS EN 15259

Note 1: This ELV applies when the load is >70% throughout the reference period.

Note 2: This ELV applies at all loads between MSUL/MSDL and base load. MSUL and MSDL are defined in table S1.4.

Table S3.1(c) Point source emissions to air from existing or new boiler plant ≥ 50 <100MWth

Emission point ref. & location	Parameter	Source	Limit (including unit)-these limits do not apply during start up or shut down.	Reference period	Monitoring frequency	Monitoring standard or method
A2/HP boiler at 3% oxygen, gas fired	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	LCP60 Boiler plant fired on natural gas	250 mg/m ³	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A2/HP boiler at 3% oxygen, gas fired	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	LCP60 Boiler plant fired on natural gas	250 mg/m ³	Daily mean of validated hourly averages	Continuous	BS EN 14181
A2/HP boiler at 3% oxygen, gas fired	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	LCP60 Boiler plant fired on natural gas	250 mg/m ³	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A2/HP boiler at 3% oxygen, gas fired	Carbon monoxide	LCP60 Boiler plant fired on natural gas	100 mg/m ³	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A2/HP boiler at 3% oxygen, gas fired	Carbon monoxide	LCP60 Boiler plant fired on natural gas	110 mg/m ³	Daily mean of validated hourly averages	Continuous	BS EN 14181
A2/HP boiler at 3% oxygen, gas fired	Carbon monoxide	LCP60 Boiler plant fired on natural gas	200 mg/m ³	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A2/HP boiler at 3% oxygen, gas fired	Sulphur dioxide	LCP60 Boiler plant fired on natural gas	38.5 mg/m ³	-	At least every 6 months	Agreed in writing with NRW

Table S3.1(c) Point source emissions to air from existing or new boiler plant $\geq 50 < 100$ MWth

Emission point ref. & location	Parameter	Source	Limit (including unit)-these limits do not apply during start up or shut down.	Reference period	Monitoring frequency	Monitoring standard or method
A2/HP boiler at 3% oxygen, gas fired	Dust	LCP60 Boiler plant fired on natural gas	5.5 mg/m ³	-	At least every 6 months	Agreed in writing with NRW
A2/HP boiler at 3% oxygen, gas fired	Oxygen	LCP60 Boiler plant fired on natural gas	-	-	Continuous As appropriate to reference	BS EN 14181
A2/HP boiler at 3% oxygen, gas fired	Water Vapour	LCP60 Boiler plant fired on natural gas	-	-	Continuous As appropriate to reference	BS EN 14181
A2/HP boiler at 3% oxygen, gas fired	Stack gas temperature	LCP60 Boiler plant fired on natural gas	-	-	Continuous As appropriate to reference	Traceable to national standards
A2/HP boiler at 3% oxygen, gas fired	Stack gas pressure	LCP60 Boiler plant fired on natural gas	-	-	Continuous As appropriate to reference	Traceable to national standards
A2/HP boiler at 3% oxygen, gas fired	As required by the Method Implementation Document for BS EN 15259	LCP60 Boiler plant fired on natural gas	-	-	Pre-operation and when there is a significant operational change	BS EN 15259

Table S3.1(d) Point source emissions to air from oil fired LCP boiler plant $\geq 50 < 100$ MWth, permitted before 07/01/14

Emission point ref. & location	Parameter	Source	Limit (including unit)-these limits do not apply during start up or shut down.	Reference period	Monitoring frequency	Monitoring standard or method
A2/HP boiler at 3% oxygen, oil fired	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	LCP60 boiler plant fired on oil	480 mg/m ³	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A2/HP boiler at 3% oxygen, oil fired	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	LCP60 boiler plant fired on oil	480 mg/m ³	Daily mean of validated hourly averages	Continuous	BS EN 14181
A2/HP boiler at 3% oxygen, oil fired	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	LCP60 boiler plant fired on oil	480 mg/m ³	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A2/HP boiler at 3% oxygen, oil fired	Carbon monoxide	LCP60 boiler plant fired on oil	100 mg/m ³	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A2/HP boiler at 3% oxygen, oil fired	Carbon monoxide	LCP60 boiler plant fired on oil	110 mg/m ³	Daily mean of validated hourly averages	Continuous	BS EN 14181
A2/HP boiler at 3% oxygen, oil fired	Carbon monoxide	LCP60 boiler plant fired on oil	200 mg/m ³	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A2/HP boiler at 3% oxygen, oil fired	Sulphur dioxide	LCP60 boiler plant fired on oil	385 mg/m ³	-	At least every 6 months	Agreed in writing with NRW
A2/HP boiler at 3% oxygen, oil fired	Dust	LCP60 boiler plant fired on oil	33 mg/m ³	-	At least every 6 months	Agreed in writing with NRW

Table S3.1(d) Point source emissions to air from oil fired LCP boiler plant $\geq 50 < 100$ MWth, permitted before 07/01/14

Emission point ref. & location	Parameter	Source	Limit (including unit)-these limits do not apply during start up or shut down.	Reference period	Monitoring frequency	Monitoring standard or method
A2/HP boiler at 3% oxygen, oil fired	Oxygen	LCP60 boiler plant fired on oil	-	-	Periodic As appropriate to reference	BS EN 14789
A2/HP boiler at 3% oxygen, oil fired	Water Vapour	LCP60 boiler plant fired on oil	-	-	Periodic As appropriate to reference	BS EN 14790
A2/HP boiler at 3% oxygen, oil fired	Stack gas temperature	LCP60 boiler plant fired on oil	-	-	Continuous As appropriate to reference	Traceable to national standards
A2/HP boiler at 3% oxygen, oil fired	Stack gas pressure	LCP60 boiler plant fired on oil	-	-	Continuous As appropriate to reference	Traceable to national standards
A2/HP boiler at 3% oxygen, oil fired	As required by the Method Implementation Document for BS EN 15259	LCP60 boiler plant fired on oil	-	-	Pre-operation and when there is a significant operational change	BS EN 15259

Table S3.1(e) Point source emissions to air from existing or new boiler plant $\geq 50 < 100$ MWth

Emission point ref. & location	Parameter	Source	Limit (including unit)-these limits do not apply during start up or shut down.	Reference period	Monitoring frequency	Monitoring standard or method
A4 and A5/MP boilers at 3% oxygen, gas fired	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	LCP60 Boiler plant fired on natural gas	135 mg/m ³	-	At least every 6 months	Agreed in writing with NRW
A4 and A5/MP boilers at 3% oxygen, oil fired	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	LCP60 Boiler plant fired on oil	196 mg/m ³	-	At least every 6 months	Agreed in writing with NRW
A4 and A5/MP boilers at 3% oxygen, gas and oil fired	Carbon monoxide	LCP60 Boiler plant fired on oil and gas	200 mg/m ³	-	At least every 6 months	Agreed in writing with NRW
A4 and A5/MP boilers at 3% oxygen, oil fired	Sulphur dioxide	LCP60 boiler plant fired on oil	38.5 mg/m ³	-	At least every 6 months	Agreed in writing with NRW
A4 and A5/MP boilers at 3% oxygen, gas fired	Dust	LCP60 boiler plant fired on natural gas	5.5 mg/m ³	-	At least every 6 months	Agreed in writing with NRW
A4 and A5/MP boilers at 3% oxygen, oil fired	Sulphur dioxide	LCP60 boiler plant fired on oil	385 mg/m ³	-	At least every 6 months	Agreed in writing with NRW
A4 and A5/MP boilers at 3% oxygen, oil fired	Dust	LCP60 boiler plant fired on oil	33 mg/m ³	-	At least every 6 months	Agreed in writing with NRW

Table S3.1(e) Point source emissions to air from existing or new boiler plant $\geq 50 < 100$ MWth

Emission point ref. & location	Parameter	Source	Limit (including unit)-these limits do not apply during start up or shut down.	Reference period	Monitoring frequency	Monitoring standard or method
A4 and A5/MP boilers at 3% oxygen, oil and gas fired	Oxygen	LCP60 Boiler plant fired on natural gas and oil	-	-	Periodic As appropriate to reference	BS EN 14789
A4 and A5/MP boilers at 3% oxygen, oil and gas fired	Water Vapour	LCP60 Boiler plant fired on natural gas and oil	-	-	Periodic As appropriate to reference	BS EN 14790
A4 and A5/MP boilers at 3% oxygen, oil and gas fired	Stack gas temperature	LCP60 Gas turbine fired on natural gas and oil	-	-	Periodic As appropriate to reference	Traceable to national standards
A4 and A5/MP boilers at 3% oxygen, oil and gas fired	Stack gas pressure	LCP60 Gas turbine fired on natural gas and oil	-	-	Periodic As appropriate to reference	Traceable to national standards
A4 and A5/MP boilers at 3% oxygen, oil and gas fired	As required by the Method Implementation Document for BS EN 15259	LCP60 Boiler plant fired on natural gas and oil	-	-	Pre-operation and when there is a significant operational change	BS EN 15259

Table S3.2 Point source emissions to sewer, effluent treatment plant or other transfers off-site– emission limits and monitoring requirements

Emission point ref. & location	Parameter	Source	Limit (incl. Unit)	Reference period	Monitoring frequency	Monitoring standard or method
S1 referred to as “S1” in the revised figure 3 provided in the further information dated 13/03/06 emission to Dow Corning Limited chemical effluent and oily water sewer	-	Pre-treated process effluent comprised of; water treatment effluent, boiler blowdown and oily water drains only.	-	-	-	-
S2 referred to as “S2” in the revised figure 3 provided in the further information dated 13/03/06 emission to Dow Corning Limited surface water system which ultimately feeds to the River Cadoxton	-	Uncontaminated surface water run-off	-	-	-	-

Table S3.3 Annual limits (excluding start up and shut down except where otherwise stated).

Substance	Medium	Limit (including unit)		Emission Points
Oxides of nitrogen	Air	Assessment year	LCP TNP Limit	A1, A2, A3, A4 and A5 – LCP60
		01/01/16 and subsequent years until 31/12/19	Emission allowance figure shown in the TNP Register as at 30 April the following year	
		01/01/20-30/06/20	Emission allowance figure shown in the TNP Register as at 31 October 2020	

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
Oxides of nitrogen	A1, A2, A3	Every 3 months for continuous monitoring	1 January, 1 April, 1 July, 1 October
Carbon monoxide	A1, A2, A3	Every 3 months for continuous monitoring	1 January, 1 April, 1 July, 1 October
Oxides of nitrogen	A4 and A5	Every 6 months for periodic monitoring	1 January, 1 July
Carbon monoxide	A4 and A5	Every 6 months for periodic monitoring	1 January, 1 July
Sulphur dioxide	A1, A2, A3, A4 and A5	Every 6 months for periodic monitoring	1 January, 1 July
Dust	A1, A2, A3, A4 and A5	Every 6 months for periodic monitoring	1 January, 1 July
Waste disposal and/or recovery.	Installation	Every 12 months	1 January

Table S4.2: Annual production/treatment	
Parameter	Units
Power generated	GWh
Heat exported	GWh

Table S4.3 Chapter III Performance parameters for reporting to DEFRA		
Parameter	Frequency of assessment	Units
Thermal Input Capacity for each LCP	Annually	MW
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 dust for each LCP	Annually	t
Operating Hours for each LCP (Load Factor)	Annually	h

Table S4.4 Reporting forms				
Media/ parameter	Reporting format	Starting Point	NRW recipient	Date of form
Air & Energy	Form IED AR1 – SO ₂ , NO _x and dust mass emission and energy	01/01/16	SI	31/12/15
Air	Form IED RTA1 – TNP quarterly emissions summary log	01/01/16	SI & TNP Register	31/12/15
LCP	Form IED HR1 – operating hours	01/01/16	SI	31/12/15
Air	Form IED CON 2 – continuous monitoring	01/01/16	SI	31/12/15
CEMs	Form IED CEM – Invalidation Log	01/01/16	SI	31/12/15
LCP	Form IED BD1 – Cumulative annual rolling malfunction and breakdown hours	01/01/16	SI	31/12/15
Air	Form IED MF1 – Pollutant concentrations during any day with malfunction or breakdown of abatement plant	01/01/16	SI	31/12/15
Air	Form IED PM1 – discontinuous monitoring and load.	01/01/16	SI	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 immediately	
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 immediately unless otherwise specified below	
Emission point reference/ source	
Parameter(s)	
Limit	
Measured value and uncertainty	
Date and time of monitoring	

(b) Notification requirements for the breach of a limit	
To be notified immediately unless otherwise specified below	
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 immediately	
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

Part C Malfunction or Breakdown of LCP abatement equipment

Permit Number	
Name of operator	
Location of Facility	
LCP Number	
Malfunction or breakdown	
Date of malfunction or breakdown	

(a) Notification requirements for any malfunction and breakdown of abatement equipment as defined by the Industrial Emission Directive*.	
To be notified within 48 hours of abatement equipment malfunction and breakdown	
Time at which malfunction or breakdown commenced	
Time at which malfunction or breakdown ceased	
Duration of the breakdown event in hours and minutes	
Reasons for malfunction or breakdown	
Where the abatement plant has failed, give the hourly average concentration of all measured pollutants.	
Cumulative breakdown operation in current year (at end of present event)	
Cumulative malfunction operation in current year (at end of present event)	
Name**	
Post	
Signature **	
Date	

* See section 3.6 and Appendix E of ESI Compliance Protocol for guidance

** authorised to sign on behalf of the operator

Schedule 6 – Interpretation

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

“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 Natural Resources Wales under section 108(1) of The Environment Act 1995 to exercise, in accordance with the terms of any such authorisation, any power specified in section 108(4) of that Act.

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

“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 Comité Européen de Normalisation.

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

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

“DLN” means dry, low NO_x burners.

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

“EP Regulations” means The Environmental Permitting (England and Wales) Regulations SI 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 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.

“hazardous property” has the meaning given in Schedule 3 of the Hazardous Waste (England and Wales) Regulations 2005 No.894 and the Hazardous Waste (Wales) Regulations 2005 No. 1806 (W.138).

“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.

“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.

“SI” means site inspector.

“TNP Register” means the register maintained by the Environment Agency in accordance with regulation 4 of The Large Combustion Plant (Transitional National Plan) Regulations 2015 SI2015 No.1973.

“Waste code” means the six digit code referable to a type of waste in accordance with the List of Wastes (England) Regulations 2005, or List of Wastes (Wales) Regulations 2005, as appropriate, and in relation to hazardous waste, includes the asterisk.

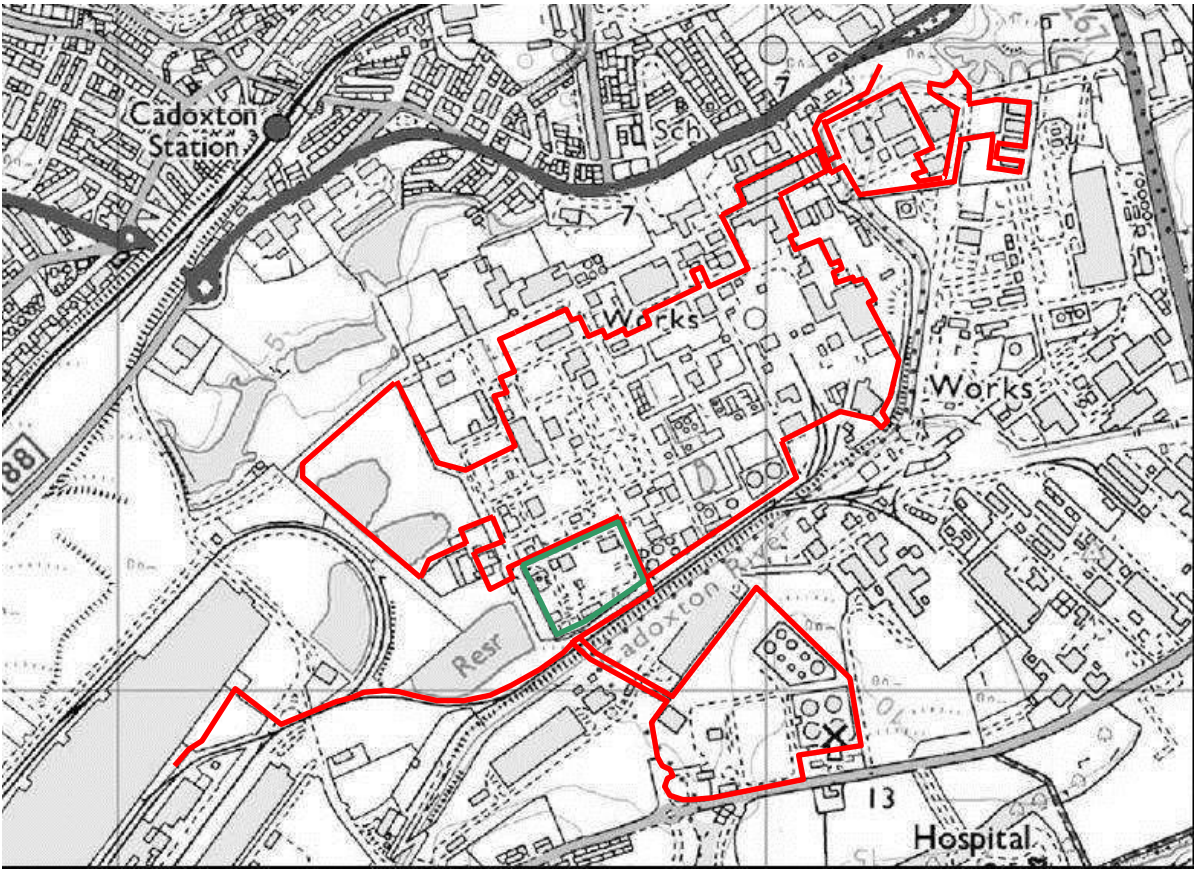
Where a minimum limit is set for any emission parameter, for example pH, reference to exceeding the limit shall mean that the parameter shall not be less than that limit.

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

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

“year” means calendar year ending 31 December.

Schedule 7 – Site plan



Key

Cofely Industrial Energy Limited Boundary

Remaining Installation Boundary

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END OF PERMIT