

Compliance Assessment Report

Report ID:
CAR_NRW0020584

This form will report compliance with your permit as determined by an NRW officer

Site	Bridgend Engine Works EPR/BL2548IF		Permit Ref	BL2548IF	
Operator/Permit holder	Ford Motor Company Ltd				
Regime	Installations				
Date of assessment	10/05/2016	Time in	11:00	Out	13:30
Assessment type	Audit				
Parts of the permit assessed	See Below				
Lead officer's name	Dunn, Karen				
Accompanied by	Antony Leakey				
Recipient's name/position	Brett James / Environmental Control Engineer		Date issued	17/10/2016	

Section 1 – Compliance Assessment Summary

This is based on the requirements of the permit under the Environmental Permitting Regulations. A detailed explanation is captured in "Compliance Assessment Report Detail" (Section 2) and any actions you may need to take are given in the "Action(s)" (section 4). This summary details where we believe any non-compliance with the permit has occurred, the relevant condition and how the non-compliance has been categorised using our Compliance Classification Scheme (CCS). CCS Scores can be consolidated or suspended where appropriate, to reflect the impact of some non-compliances more accurately. For more details of our CCS scheme, contact your local office.

Permit conditions and compliance summary	CCS Category	Condition(s) breached
A1 - Specified by permit	A	

KEY: See Section 5 for breach categories, suspended scores will be indicated as such.

A = Assessed or assessed in part (no evidence of non-compliance), **X** = Action only,
O = Ongoing non-compliance, not scored.

Number of breaches recorded	0	Total compliance score (see section 5 for scoring scheme)	0
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If the Number of breaches recorded is greater than zero, please see Section 3 for our proposed enforcement response

Section 2 – Compliance Assessment Report Detail

This section contains a report of our findings and will usually include information on:

- The part(s) of the permit that were assessed (eg. Maintenance, training, combustion plant, etc)
- Where the type of assessment was 'Data Review' details of the report/results triggering the assessment
- Any non-compliances identified
- Any non-compliances with directly applicable legislation
- Details of any multiple non-compliances
- Information on the compliance score accrued inc.
- Details of advice given
- Any other areas of concern
- Any actions requested
- Any examples of good practice
- A reference to photos taken

Ford representatives present:

Mark Thomas (MT) – Plant Manager

Brian Vicker (BV) – Plant Engineer

Brett James (BJ) – Environmental Control Engineer

Dean Harris (DH) – Boiler Operator

This was a pre-planned visit and the main objective was to verify the installation of the low NOx burners in two of the on-site boilers. In undertaking this work it also saw a de-ration in the overall capacity of the boilers to a single stack/windshield and therefore fell below the threshold as defined by the Industrial Emissions Directive (IED) Chapter III (Large Combustion Plant Directive (LCPD)). This visit also acted as a handover visit from Karen Dunn to the new NRW site inspector Richard Taylor for the permitted combustion activity located within the Ford engine plant. All future correspondence concerning the permitted installation should now be directed to Richard.taylor@cyfiethnaturiolcymru.gov.uk. (Direct line 03000 653139).

The following agenda was provided just prior to the visit

1. Introductions
2. Site Overview
3. Verification of boiler de-ration
4. Site tour
5. AOB

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Introductions and Overview

The visit began with introductions and overview from Mark Thomas (MT) the Plant Manager at the Ford Engine plant in Bridgend. MT gave the inspecting officers and the NRW combustion sector lead Antony Leahey an overview of operations at the engine manufacturing site. The development of the Ford engine plant in Waterston Bridgend began in 1977 and it specialises in the manufacture of petrol engines for both the European and North American market. The engine plants sister site is based in Dagenham Essex where the assemblage of Ford's diesel engines takes place.

MT explained how the boilers are required for the supply and circulation of high pressure hot water (HPHW) at the manufacturing plant for heating and air handling located on the roof of the building. Coolant is heated using the boilers and this is used for the testing of certain engines assembled on site. In making the change to low NOx burners on boilers 4 and 5 economisers were also installed, variable speed drives (VSD) and new controls to help with the efficiency of the boilers moving from summer to winter mode. This replaced the pumping system that was previously used within these boilers.

Changes in the type of engine manufactured at the Bridgend plant as well as weather conditions directly impacts on the amount of work required of the on-site boilers. The outlook for the company is expected to change in 2020 when a different type of engine is being assembled at the plant which will result in a change to the air handling units. There are currently 130 units on the roof of the main building. The previously considered plan for the rolling programme of low NOx burner installations is therefore on hold as it is likely that there will be a lower demand on the boiler house in the future.

The lighting for the engine plant is controlled by the boiler house and MT explained that the amount of energy used on site and by Ford as a whole is carefully tracked for reporting against their environmental scorecard. Evidence of this was demonstrated during the site tour where there was an environment section within the communications area of the building. From the information on the notice board the amount of energy in kilowatts per unit per year was shown in a bar chart format. This was also done for other resources on site such as water usage etc. MT advised that the forecast for energy usage across the site is + or – 3%. Manufacturing across the plant directly impacts on the amount of energy required and this also depends on the type of engine being assembled.

Brian Vicker (BV) advised that the operation and maintenance of the boilers outside of the Ford engine plant is managed by a third party. The operator is currently using ENGIE (formally Cofley and EDF) for this work. This was also the company that installed the low NOx burners which come with their own bespoke software on the micro-processor. The officers explored how Ford documents the de-rating within the sites management systems and 'management of change' procedures. From this discussion Ford considered that the best place to 'flag' it would possibly be in MAXIMO which is the system used for scheduling the servicing, maintenance and inspection of the boilers by their third party engineers. This would then flag the change to those responsible for the boilers. It is important that the change is considered in the future operation of the installation as it would provide a safeguard to ensure the site remains below 50MW thermal input to a single stack or a permit variation for an Industrial Emissions Directive (IED) Chapter III permit would be required (please refer to previous CAR 5712 NB. all actions on CAR5712 have been completed.)

Unfortunately the third party software engineers were unable to make it to site for this visit, it is expected that this along with the MAXIMO system will be re-visited at a later date. A discussion was also had on the

frequency of the inspections and non-destructive testing of the boilers by their contractors. It was advised that Ford usually undertake the preparation for this work. As part of the low NOx burner installation new meters and temperature probes were added to the system so the operator now has better control especially over the temperature of the HPHW and can assess the return water to the boiler house. During the summer the site generally uses boiler number 5 only which has its own stack. Due to current weather conditions boiler number 4 is also in operation and this was viewed during the site tour. Since the change boilers number 4 and 5 can only operate on gas only boilers 1 to 3 still have the ability to burn oil but this no longer takes place at the site.

Verification of boiler de-ration and Site Tour

Through discussions with the regulator the operator opted for verification / demonstration of the boiler de-ration through a third party and software set point. Rather than through a physical change to the system such as the installation of an orifice plate on the gas intake. As a consequence this could not be verified during the site tour by visual means with Ford.

The site tour began with a walk through the main building by BJ to the boiler house so that the NRW staff who hadn't been to site before could see the scale of the manufacturing plant served by the permitted installation. From the main manufacturing building the officers met up with BV and Dean Harris (DH) the boiler operator. BV outlined the layout of the boiler configuration and explained how boilers 1 to 3 were not in operation and the doors on boiler number 3 were currently off while the hinges were being realigned. The main focus of the boiler house visit was around boiler number 4 which was in operation at the time of the visit. Readings were taken from the newly installed meter (CPT-01 Quantometer) on the gas intake that measures instantaneous flow in an attempt to calculate the thermal input however this will need to be done by demonstration of the software.

The new temperature probes and digital control system was evident and viewed by the officers. The update of the control system aims to deliver a number of improvements to the system such as better fuel efficiency, prolong the life of the boiler, flame safeguard and fuel ratio in turn this not only provides associated cost savings but also reduction in emissions which is welcomed by NRW.

At the time of the visit boiler number 4 was operating as follows:

Firing rate of the burner varied at 51 to 54%

Oxygen 2-5%

Carbon Dioxide 0.4%

Flue temperature 173 °C

Trim -4%

From inside the boiler house the visit extended outside briefly to show the new inspector the 2 boiler stacks. The stacks had scaffolding in place for access to the emission testing points. BJ advised that emissions testing was undertaken the week prior to the visit and when the reports become available outlining the emissions monitoring they will be submitted to NRW for review in line with the permit.

Conclusion.

Ford has invested in the boilers at the Bridgend engine plant and this was evident during the site tour. The improvements to boilers number 4 &5 and associated digital controls will give the operator greater control over the HPHW system. There were a number of positives in making this change which have been documented on this report form but it also saw the de-rating of boiler number 4. The installation no longer falls under the Industrial Emissions Directive Large Combustion plant definition. However complete verification of the software interlock has been postponed and is dependent on the availability of Fords third party engineers. As discussed above this will be re-visited with the operator at a later date. NRW welcomes the improvements made and the reduction of greenhouse gas emissions from the installation.

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EPR Compliance Assessment Report

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Site	Bridgend Engine Works EPR/BL2548IF	Permit Ref	BL2548IF
Operator/Permit holder	Ford Motor Company Ltd	Date	10/05/2016

Section 3 – Enforcement Response

You must take immediate action to rectify any non-compliance and prevent repetition.

Non-compliance with your permit conditions constitutes an offence and can result in criminal prosecutions and/or suspension or revocation of a permit. Please read the detailed assessment in Section 2 and the steps you need to take in Section 4 below.

Section 4 – Action(s)

This section summarises the actions identified during the assessment along with the timescales for when they will need to be completed.

Criteria Ref.	CCS Category	Action required/advised	Due Date
See Section 1 above			

Section 5 – Compliance notes for the Operator

To ensure you correct actual or potential non-compliance we may

- Advise on corrective actions verbally or in writing
- Require you to take specific actions verbally or in writing
- Issue a notice
- Require you to review your procedures or management system
- Change some of the conditions of your permit
- Decide to undertake a full review of your permit

Any breach of a permit condition is an offence and we may take legal action against you

- We will normally provide advice and guidance to assist you to come back into compliance either after an offence is committed or where we consider that an offence is likely to be committed. This is without prejudice to any other enforcement response that we consider may be required.
- Enforcement action can include the issue of a formal caution, prosecution, the service of a notice and/or suspension or revocation of the permit.

See our Enforcement and Civil Sanctions guidance for further information

This report does not relieve the site operator of the responsibility to

- Ensure you comply with the conditions of the permit at all times and prevent pollution of the environment
- Ensure you comply with other legislative provisions which may apply

Non-compliance scores and categories

CCS category	Description	Score
C1	A non-compliance that could have a major environmental effect	60
C2	A non-compliance which could have a significant environmental effect	31
C3	A non-compliance which could have a minor environmental effect	4
C4	A non-compliance which has no potential environmental effect	0.1

Operational Risk Appraisal (Opra) - Compliance assessment findings may affect your Opra score and/or your charges. This score influences the resource we use to assess permit compliance.

Section 6 – General information

Data protection notice

The information on this form will be processed by the Natural Resources Wales (NRW) to fulfil its regulatory and monitoring functions and to maintain the relevant public register(s). The NRW may also use and/or disclose it in connection with:

- Offering/providing you with its literature/services relating to environmental matters
- Consulting with the public, public bodies and other organisations (eg. Health and Safety Executive, local authorities) on environmental issues
- Carrying out statistical analysis, research and development on environmental issues
- Providing public register information to enquirers
- Investigating possible breaches of environmental law
- Assessing customer service satisfaction and improving its service
- Freedom of Information Act/Environmental Regulations request

The NRW may pass it on to its agents/representatives to do these things on its behalf. You should ensure that any persons named on this form are informed of the contents of this data protection notice.

Disclosure of information

The NRW will provide a copy of this report to the public register(s). However, if you consider that any information contained in this reports should not be released to the public register(s) on the grounds of commercial confidentiality, you must write to your local area office within twenty working days of receipt of this form indicating which information it concerns and why it should not be released, giving your reasons in full.

Customer charter

What can I do if I disagree with this compliance assessment report?

If you are unable to resolve the issue with your site officer, you should firstly discuss the matter with officer's line managers using the informal appeals procedure. If you wish to raise your dispute further through our official Complaints and Commendations procedure, phone our general enquiry number 0300 065 3000 (Mon to Fri 08.00 – 18.00) and ask for the Customer Contact team or send an email to enquiries@naturalresourceswales.gov.uk. If you are still dissatisfied you can make a complaint to the Public Services Ombudsman for Wales. For advice on how to complain to the Ombudsman phone their helpline on 0845 607 0987.

Welsh Language

If you would like this form in Welsh please contact your Regulatory Officer.