

## Compliance Assessment Report CAR\_NRW0043551

**Permit being assessed:** JP3632ZH.

**For:** Barry CHP , **held by:** Dow Silicones UK Limited

**At:** Wimborne Road - Dock 2, Barry, Vale of Glamorgan, CF63 3DH.

**Type of assessment:** Report/Data Review,

**Reason:** Routine.

**On:** 31/12/2023.

**Parts of permit assessed:** Monitoring Returns.

**NRW Lead Officer:** Geraint Harris.

**Report sent to:** Jude Sartor, Environmental Specialist , on 21/02/2024.

### 1. Summary of our findings (full details in section 4)

Part of permitted activity assessed (compliance criteria)	Assessment result	Permit condition
IR4B - Information - Reporting	C4 No impact	Permit Condition 4.2.3
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IR4B - Information - Reporting	C4 No impact	Permit Condition 4.2.3
IR4B - Information - Reporting	C4 No impact	Permit condition 4.2.3
IR3A - Emissions and monitoring - Emissions to water, air or land	C4 No impact	Permit Condition 3.1.2

Result types are explained in more detail in the 'Important Information' section below.

Total non-compliances recorded	Total non-compliance score
7	0.7

How we use the non-compliance score to calculate your annual fee is explained in the 'Important Information' section below.

### 2. What action is required?

Criteria	Action needed	Complete by
IR4B	Respond to action 2 in the text	02/04/2024
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IR4B	Respond to Action 2 in the text	02/04/2024
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IR4B	Respond to Action 2 in the text	02/04/2024
IR3A	Bring the CO emissions back into compliance	Already completed

Compliance criteria codes are listed in the 'Important information' section below.

### 3. What will happen next?

Any non-compliance we have identified and recorded on this form is an offence. It can result in criminal prosecution and/or suspension or revocation of your permit.

**You are non-compliant with your permit.**

**We are currently considering taking enforcement action against you for the non-compliance recorded above. We will contact you in due course.**

### 4. Details of our assessment

Dow CHP

EPR JP3632ZH

**Ripped Bellows**

During an onsite meeting on the 26<sup>th</sup> of August Dow reported that the bellows within HRSG-A were recently ripped. The following action was issued, and no response provided.

**Action1:** Please provide detailed information explaining the cause and consequence of the ripped bellows?  
**Due 23rd of December 2023.**

**Please respond to this action by the 18<sup>th</sup> of March 2024.**

**Quarterly Monitoring Returns**

**Q4**

**Emission Point A1**

Emission point A1 saw an improvement in both the daily and monthly NOx emissions, with December showing the lowest NOx levels for 2023. The maximum daily mean NOx for October and November as well as the monthly mean NOx for October for emission point A1 were above the permitted NOx ELV's. However, these permit emission limits are linked to the operation of the dry low NOx technology within the gas turbines. Since the turbines were not functioning during October and only operational for 66% of November these emission limits don't apply. However, as explained in the two previous CAR Forms (CAR\_NRW0042792 and CAR\_NRW0041255) and explained within the JEP protocol, the original boiler ELV's do apply. These higher limits apply due to higher emissions being associated with forced draft (auxiliary mode) operations. These emissions are:

- 100 mg/Nm3 monthly mean of validated hourly averages
- 110 mg/Nm3 Daily mean of validated hourly averages

- 200 mg/Nm<sup>3</sup> 95% of validated hourly averages within a calendar year

The results for the monthly mean and daily mean within the Q4 monitoring returns for October are within these limits and so are considered compliant. However, in November the turbine was brought back online and operated 66% of the time and in December operated 99%, which means a separate set of ELV'S are applicable. According to the BAT conclusions of the LCP Bref, page 784, footnote 3, the annual and daily LCP BREF ELV's do not apply to any plant operating < 1,500 hours per year (h/yr) in any calendar year. Therefore, if the GT was run under 1500 h/yr the original IED emission limits apply since mandatory Annex V ELVs cannot be exceeded. If the turbine only operated 66% in November and 99% in December, then this 1500h/yr limit wouldn't have been exceeded therefore the following ELV's apply when the GT was operating:

- 75 mg/Nm<sup>3</sup> monthly mean of validated hourly averages
- 82.5 mg/Nm<sup>3</sup> Daily mean of validated hourly averages
- 125 mg/Nm<sup>3</sup> 95% of validated hourly averages within a calendar year. (It's 125 and not 150 due to the backsliding rule).

Therefore, the results for December are within compliance. However, for November there is a split in operations with 66% turbine use and 44% FD mode. Therefore, Dow will have to split the data up for this month and compare it with the applicable limits.

The annual mean of validated hourly averages in table S3.1(a) of Dow's permit is a BREF related ELV and only applies when the dry low NOx technology is effective and when any existing plants operate for more than 1500 hours per year. Therefore, for 2023 the annual permit limit of 55 mg/Nm<sup>3</sup> is not applicable. However, because the predominate mode of operation throughout the year has been forced draft mode the plant has operated as a boiler, therefore, we must consider the LCP Bref for the HRSG, if the HRSG has operated above 1500h/yr then an additional limit is added which is 100 mg/Nm<sup>3</sup> annual mean of validated hourly averages. Therefore, Dow will need to report against the following emission limits when operating the HRSG over 1500 hours per year:

- 100 mg/Nm<sup>3</sup> annual mean of validated hourly averages
- 100 mg/Nm<sup>3</sup> monthly mean of validated hourly averages
- 110 mg/Nm<sup>3</sup> Daily mean of validated hourly averages
- 200 mg/Nm<sup>3</sup> 95% of validated hourly averages within a calendar year

Dow have reported the daily and monthly means but haven't provided any annual or any 95% of validated hourly average data within their report.

### CO Exceedance

Dow have an exceedance of the carbon monoxide ELV in November 2023 from emission point A1 with a maximum daily mean of 88.9 mg/m<sup>3</sup> vs an ELV of 80 mg/m<sup>3</sup>. This is considered to be a no impact, **category 4, breach of permit condition 3.1.2** because the CO levels were not sufficiently high to result in significant levels of partial combustion product emissions or exceedance of the CO air quality standard.

### Emission Point A2

The emissions from emission point A2 were within the permitted ELV's. The annual mean of validated hourly averages limit of 100mg/Nm<sup>3</sup> does not apply for 2023 since the permit states "effective from the date approved by NRW upon completion of improvement condition IC8". However, the 95% of validated hourly averages within a calendar year does apply and hasn't been reported.

### Emission Point A3

The emissions from emission point A2 were within the permitted ELV's for 2023. Neither the GT or HRSG were operated in Q4 2023. No annual or any 95% of validated hourly average data has been submitted within this report.

**Missing Data**

For all three emission points no data has been provided for both the NOx and CO annual 95th percentile or annual mean reporting requirements, consequently the following noncompliance scores are being issued:

**Emission point A1:**

1 x Category 4 non-compliance is being issued against permit condition 4.2.3 for failure to report the 95% of validated hourly averages within a calendar year result for NOx.

1 x Category 4 non-compliance is being issued against permit condition 4.2.3 for failure to report against the 95% of validated hourly averages within a calendar year for CO.

**Emission Point A2:**

1 x Category 4 non-compliance is being issued against permit condition 4.2.3 for failure to report against the 95% of validated hourly averages within a calendar year for NOx.

1 x Category 4 non-compliance is being issued against permit condition 4.2.3 for failure to report against the 95% of validated hourly averages within a calendar year for CO.

**Emission Point A3:**

1 x Category 4 non-compliance is being issued against permit condition 4.2.3 for failure to report the 95% of validated hourly averages within a calendar year result for NOx.

1 x Category 4 non-compliance is being issued against permit condition 4.2.3 for failure to report against the 95% of validated hourly averages within a calendar year for CO.

Since the permit is not that clear on what to report when operating in forced draft mode, since this isn't a routinely permitted operation, no noncompliance will be issued for failure to report the annual mean of validated hourly averages for NOx and CO. However, Dow will need to report this data by the **2<sup>nd</sup> of April 2024**.

**Action 2:** Please resubmit **by the 2<sup>nd</sup> of April**, the Q4 monitoring returns with the following information:

Emission points A1 and A3:

- The result of the 95% of validated hourly averages within a calendar year for NOX when operating in FD mode against a permit limit of 200 mg/Nm<sup>3</sup>.
- The result of the 95% of validated hourly averages within a calendar year for NOX when operating in TEG mode against a permit limit of 125mg/Nm<sup>3</sup>.
- The result of the 95% of validated hourly averages within a calendar year for CO when operating in FD mode.
- The result of the 95% of validated hourly averages within a calendar year for CO when operating in TEG mode.
- The annual mean of validated hourly averages for NOx when operating in FD mode against a permit limit of 100 mg/Nm<sup>3</sup>.
- Split the November data up, if possible, and compare with the appropriate limits, i.e. the original boiler limits and the original turbine limits states above.

Emission point A2:

- The result of the 95% of validated hourly averages within a calendar year for NOx.
- The result of the 95% of validated hourly averages within a calendar year for CO.

**Action 3:** where we find non-compliance, we must investigate root cause. Please explain why the results for each of the 95% of validated hourly averages within a calendar year and the annual mean values were not

reported? **Due 2<sup>nd</sup> of April.**

**Improvement Condition 8**

Improvement Condition 8 has been received and accepted. Therefore, the new ELV's and operational conditions linked to IC8 are now considered effective.

**End.**

If you have any queries about this report, or to discuss completion of any actions, please contact the NRW Officer named above.

## Important information

### Legal status of this report

Your permit is issued to you under the Environmental Permitting Regulations. You have a responsibility to comply with the conditions of your permit and prevent pollution/harm of the environment. You must also ensure that you comply with any other relevant legislation that may apply to your site's operations.

This report explains the findings of our assessment and any action you are required to take. We categorise non-compliance using our guidance for assessing non-compliance at regulated sites.

When we find potential non-compliance/s we will normally give you advice on how to maintain compliance.

To correct non-compliance, we may:

- require you to take specific actions
- issue a notice
- review the conditions of your permit.

Any advice and guidance we give will be without prejudice to any other enforcement response that we consider may be required.

### Assessment results and non-compliance categories (used in section 1):

Assessment result	Description
Assessed (A)	Assessed or assessed in part, no evidence of non-compliance found
Action only (X)	Action only relating to the activity assessment
Ongoing (O)	Ongoing non-compliance, not scored

Non-compliance category	Description	Score
C1 Major	Potential to have a major, serious, persistent and/or extensive impact or effect on the environment, people and/or property	60
C2 Significant	Potential to have a significant impact or effect on the environment, people and/or property	31
C3 Minor	Potential to have a minor or minimal impact or effect on the environment, people and/or property	4
C4 No environmental impact	Non-compliance at a regulated site that cannot foreseeably have any impact on the environment, people and/or property	0.1

### How we use assessment scores

The number and severity of non-compliances recorded in a year will affect your annual subsistence fee the following year. A non-compliance factor is added to your site's Operator

Performance Risk Appraisal (OPRA) score when we calculate your fee to reflect the additional resource we use to assess permit compliance.

**If your assessment result in Section 1 is suspended, what does this mean?**

In line with our guidance, we may suspend scores for up to six months to allow time for remedial action to be taken. Suspended scores will be re-instated if the action is not completed.

**Full list of Industry compliance criteria (used in section 1 and 2):**

**1. Management**

- IR1A – General management
- IR1B – Finance (only applicable to Landfill)
- IR1C – Energy efficiency
- IR1D - Efficient use of raw materials
- IR1E - Avoidance, recovery and disposal of wastes produced by the activities
- IR1F - Multiple operator installations

**2. Operations**

- IR2A – Permitted activities
- IR2B – The site
- IR2C – Operating techniques
- IR2D – Technical requirements
- IR2E – Improvement programme
- IR2F – Pre-operational conditions
- IR2G – Landfill engineering (only applicable to Landfill)
- IR2H – Waste acceptance (only applicable to Landfill)
- IR2I – Leachate levels (only applicable to Landfill)
- IR2J – Closure and aftercare (only applicable to Landfill)
- IR2K – Landfill gas management (only applicable to Landfill)

**3. Emission and Monitoring**

- IR3A – Emissions to water, air or land
- IR3B – Emissions of substances not controlled by emission limits
- IR3C – Odour
- IR3D – Noise and vibration
- IR3E – Monitoring
- IR3F – Pests
- IR3G – Air quality management plans
- IR3H – Monitoring for the purposes of the Industrial Emissions Directive (this heading includes Large Combustion Plants)
- IR3I – Fire

**4. Information**

- IR4A – Records
- IR4B – Reporting
- IR4C – Notification

**Enforcement response**

Any non-compliance with a permit condition is an offence and we may take legal action against you. Action we take can include prosecution, serving a notice on you and/or

suspension or revocation of your permit. See our Enforcement and Sanctions Guidance for further information.

### **Data protection notice**

You should make sure that anyone named in this report knows that the information it contains will be processed by Natural Resources Wales to fulfil its regulatory and monitoring functions and to maintain the relevant public register(s).

We may also use and/or disclose the report in connection with:

- offering or providing you with our literature or services relating to environmental matters
- consulting with the public, public bodies and other organisations (e.g. 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 our service
- Freedom of Information Act or Environmental Information Regulations requests.

We may also pass it on to our agents or representatives to do these things on our behalf.

### **Disclosure of information – this report will be available to view on-line**

If you think this report contains commercially confidential information that should not be placed on our public register, you must contact your local Natural Resources Wales office within **fifteen working days** of receiving this report, using the contact details in the accompanying email or letter. You must give a full explanation of why it should not be added to our public register, including specifying which information is commercially confidential. We will assess your request and respond to you within twenty working days to let you know if we agree to your request.

### **What do I do if I disagree with the report or have a complaint?**

If you disagree with this compliance assessment report, you should contact the lead officer without delay to discuss your concerns.

If you are unable to resolve the issue with the lead officer or their line manager you should contact our Customer Contact team on 0300 065 3000 (Monday to Friday 08:00 to 18:00), or email [enquiries@naturalresourceswales.gov.uk](mailto:enquiries@naturalresourceswales.gov.uk) for details of how to raise your dispute further through our Complaints and Commendations procedure.

If you are dissatisfied with our response, you can contact the Public Services Ombudsman for Wales by phone on 0300 7900203 or by email at [ask@ombudsman.wales](mailto:ask@ombudsman.wales)

### **Welsh Language Standards**

We are committed to establishing Natural Resources Wales as a naturally bilingual organisation. We will provide compliance reports in your preferred language.