

Compliance Assessment Report CAR_NRW0045949

Permit being assessed: AB3393CP.

For: Viridis 178 Swansea Power Plant, **held by:** Conrad (Alcoa) Limited

At: Viridis 178 Swansea Power Plant, Westfield Industrial Park, Waunarlwydd, Swansea, Swansea, SA5 4SF.

Type of assessment: Audit,

Reason: Routine.

On: 04/12/2024 between 10:00 and 13:00.

Parts of permit assessed: See Summary, Compliance Criteria Assessed.

NRW Lead Officer: Elliot Jones.

Report sent to: Hannah Powell, Head of Environmental Compliance, on 20/01/2025.

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

Part of permitted activity assessed (compliance criteria)	Assessment result	Permit condition
IR1C - Installations - Management - Energy Efficiency	Action only (X)	
IR2E - Installations - Operations - Improvement programme	Action only (X)	
IR3B - Installations - Emissions and monitoring - Emissions of substances not controlled by emission limits	Action only (X)	
IR3E - Installations - Emissions and monitoring - Monitoring	Action only (X)	
IR4A - Installations - Information - Records	Assessed (A)	

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

Total non-compliances recorded	Total non-compliance score
0	0

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
IR1C	Provide evidence of the updated energy efficiency procedure.	Already completed
IR2E	Submit Noise impact assessment for review in line with outstanding IC2.	Already completed
IR3B	Provide evidence of weekly containment inspections and findings.	Already completed
IR3E	Perform simultaneous emission sampling at the current sampling location and in the vertical stack of a single engine.	01/10/2025

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.

At this time, we do not intend to take any further action.

This statement does not stop us from taking additional enforcement action if further relevant information comes to light or offences continue.

4. Details of our assessment

Attendees

Elliot Jones – Natural Resources Wales Regulatory Officer

Hannah Powell – Conrad Energy, Head of Environmental Compliance

Adrain Samuel – Conrad Energy Waunarlyydd, Site Manager

Introduction

A site visit of the Conrad Energy Waunarlyydd Power Plant was arranged for 4th December 2024. This was the NRW officers first visit to the power plant. Purpose of the visit was to introduce officer to Conrad Energy personnel, gain an understanding of the site and its operations and to discuss permit requirements. Officer provided the operator with an agenda prior to the visit, allowing operator time to gather appropriate documents.

Site Tour

The site consists of 27 natural gas fired engines producing electricity for the grid when required. Engines automatically engage to meet the demands of the grid.

Individual engines are located within a soundproofed and fully contained cab. On arrival to site the engines were operating but did shutdown by the end of the visit. Shut down of the engines allowed for visual inspection within the engine cab. The site is maintained and operated by the site manager; site manager is the sole person working on site.

Officer was required to read the site-specific induction prior to site walk around.

Containment

The operator is required to store coolant and engine lubricants on site for the maintenance of the engines. The required chemicals are stored within appropriate intermediate bulk containers (IBC). Secondary containment is provided by IBC sub-pallet with tarpaulin rain guard. During the inspection, all sub-pallets were dry with no evidence of contamination.

Contaminated rags and waste material stored in containers on an IBC sub -pallet providing secondary containment.



IBC Sub Pallet with Rain Guard



Spill Response Kit

Engines are located within a fully contained cab. Allowing for engine maintenance without the risk of ground contamination. Numerous spill kit stations located around the site. Bunds are visually inspected weekly by the site manager.

Action: Provide evidence of weekly containment inspections.

Whilst complying this Compliance assessment report the operator provided evidence of the weekly routine inspection. Site manager records findings of the weekly inspections on the bespoke Asset Management, ICT system.

Energy Efficiency

Environmental Permit condition 1.2, requires a 4-year review of the energy efficiency of the site. Following discussions during the site visit, the operator informed the officer that the procedure is a companywide procedure, and it had been reviewed within the last 4 years.

Action: Provide evidence of the updated energy efficiency procedure.

Whilst compiling this report, operator provided evidence of the most recent energy efficiency review. ISO50001 Energy management system was implemented by the operator during 2023. Operator has passed their recent surveillance audit in December 2024, with no nonconformities found.

In order to remain compliant with environmental permit the sites energy efficiency must be regularly reviewed in line with advised timescale. Identifying improvement opportunities where possible.

Annual Periodic Monitoring

The shutdown of the engines during the site visit allowed access to the engine cab. The environmental permit requires the annual monitoring of NOx, CO and O2 on the engines. Site Manager identified the sample point used for the annual monitoring.

The sample point allows access to the gas stream by removing a small port plug. Sampling location is estimated to be 0.5meters from the engine and located on a 90° bend. Small diameter of the sample port prevents the insertion of a pitot, recording the stack gas velocity is therefore not possible. Officer raised concern regarding the sample location due to potential flow profile and potential difficulty of obtaining a representative sampling.

Each engine has a vertical stack with appropriate sampling ports, currently the site has no permanent means of access to the vertical stacks and sampling in this location is therefore not possible.



Current Stack Monitoring Location



Sites Vertical Stacks

The sampling contractor outlines in the 2024 sampling report, that the sample locations are compliant with M1 guidance, and sampling was in line with the guidance BS EN 15259.

While the flow profile remains unknown, and with a number of the emissions results nearing the emission limit value set out in Table S3.1 of the Environmental Permit, the officer has set the following action.

Action: During the 2025 emission monitoring campaign, perform simultaneous emission sampling at the currently sample location and in the vertical stack on a

single engine.

As all 27 engines are identical the above action will allow for direct comparison of emission results at the two sampling locations. Comparison of the two data sets will inform future decision on the suitability of the sample location.

Improvement Programme

Improvement Condition 2 of the environmental permit remains outstanding.

Table S1.4 Improvement programme requirements

Reference	Requirement	Date
IC 2	The Operator shall submit to Natural Resources Wales a noise impact assessment using the BS4142:2014 standard. The assessment shall be based on the manufacturer's stated sound power level for all fixed and mobile noise sources from the plant as built. The background noise measurements (LA90, T) and residual noise level (LAeq, T) (including tonal noise) shall be measured over a time period that is sufficiently long enough to obtain typical background noise levels which are representative of the area in which the installation is located.	Deadline of 6 months (on issue).

Discussions with the operator revealed that a Noise impact assessment has been undertaken at the site in 2019 by the previous operator. There have been no significant changes on site i.e. additional engines, location of engines and therefore noise assessment remains relevant.

Action: Submit Noise Impact assessment for review.

Whilst compiling this report, operator has provided the requested noise impact assessment document. NRW to review document and provide comment on the report.

Conclusion

This was the first site visit since the recent change of regulatory site officer, primary purpose of the visit was to familiarise the officer with site operations and establish links with the site management. During the visit, a number of requirements of the environmental permit were discussed (see above) operator provided all the requested information to satisfy NRW officer.

Officer has set numerous actions for the operator; a number of these actions have been completed whilst compiling this report. The periodic emission sampling action has an extended deadline allowing the operator to organise sampling contactor and means of access to the vertical stack.

Noise impact assessment is in the process of being reviewed by NRW and comments to be provided. Completion of IC2 requirements will be met once both parties are satisfied with the noise report.

END

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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 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

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.