

Compliance Assessment Report CAR_NRW0045061

Permit being assessed: DP3333TA.

For: Pembroke Power Station , **held by:** RWE Generation UK plc

At: Pembroke Power Station , Pembroke, PEMBROKE, Dyfed, SA71 5SS.

Type of assessment: Site Inspection,

Reason: Routine.

On: 26/07/2024 between 09:00 and 14:00.

Parts of permit assessed: Site Management, Operations, Emissions and Monitoring, Information.

NRW Lead Officer: Alex Bowder, accompanied by Rhydian Cox.

Report sent to: Daniel McDermott, Regulations Support Engineer, on 28/08/2024.

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

Part of permitted activity assessed (compliance criteria)	Assessment result	Permit condition
IR1A - Installations - Management - General Management	Assessed (A)	
IR2A - Installations - Operations - Permitted activities	Assessed (A)	
IR2B - Installations - Operations - The site	Assessed (A)	
IR3A - Installations - Emissions and monitoring - Emissions to water, air or land	Assessed (A)	
IR3D - Installations - Emissions and monitoring - Noise and vibration	Assessed (A)	
IR4B - Installations - Information - Reporting	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?

No action required.

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

**CAR reissued on 28 August 2024 to amend technical wording.*

This Compliance Assessment Report (CAR) details the comments of Natural Resources Wales (NRW) Officers for the site inspection conducted on 26 July 2024 at Pembroke Power Station, West Pennar, Pembroke, SA71 5SS for activities held by RWE Generation UK plc (the operator) under the environmental permit EPR-DP3333TA.

General compliance comments

The visit purpose was to conduct a general inspection of the operator's environmental permit and associated activities. No non-compliance scores were recorded against the operator's permit conditions on this inspection.

Attendees

- Alex Bowder - Senior Regulatory Officer, NRW
- Rhydian Cox - Senior Regulatory Officer, NRW
- Regulations Support Engineer, RWE
- Operations Manager, RWE
- Chemistry and Regulations Technician, RWE
- Placement Student, RWE
- Placement Student, RWE

Inspection commentary

At 9:00am NRW officers arrived at the site's security station within the vehicle parking area and signed in. Officers were met by the Regulations Support Engineer and taken to the site office for briefing in a meeting room. A meeting agenda was sent in advance by the operator to NRW officers. Introductions were had between attendees which then led onto general discussions and presentations before commencing the site tour.

Discussions were had around the various projects for which RWE are involved; primarily around decarbonation goals, stakeholder engagement, and environmental impact assessments. The operator also touched on the Green Hydrogen production project and Battery Energy Storage Systems - NRW commented on the EPR remit and requirements for such activities.

Officers commenced the site tour around 10:30am. PPE was put on and officers were taken to the site safety building, referred to as 'Safety Street' and highlighted the site's safety objective of 'Mission Zero'. The operator also explained an intention to implement a similar scheme for its environmental responsibility and awareness. Following Safety Street, officers continued passed the site's sewage treatment plant located below ground.

Water Treatment Plant (WTP)

The Heat Recovery Steam Generator's (HRSG) water is sourced from a mains raw water supply and is purified prior to use via reverse osmosis within the plant. Officers headed inside the WTP building where various aspects of the process take place to prepare the water for the process i.e. the demineralisation of the water for optimisation. There were various chemicals stored in IBCs within the area used for balancing the pH of the water. All IBCs were stored on appropriate secondary containment and spill kits were located nearby in the event of a spillage.

After exiting the WTP, officers headed towards the seal pit and viewed the air filters on the side of each unit where air is condensed and used in the process. Back-up generators for each CCGT are located outside of the turbine houses with respective emission points for each unit; these are listed in permit.

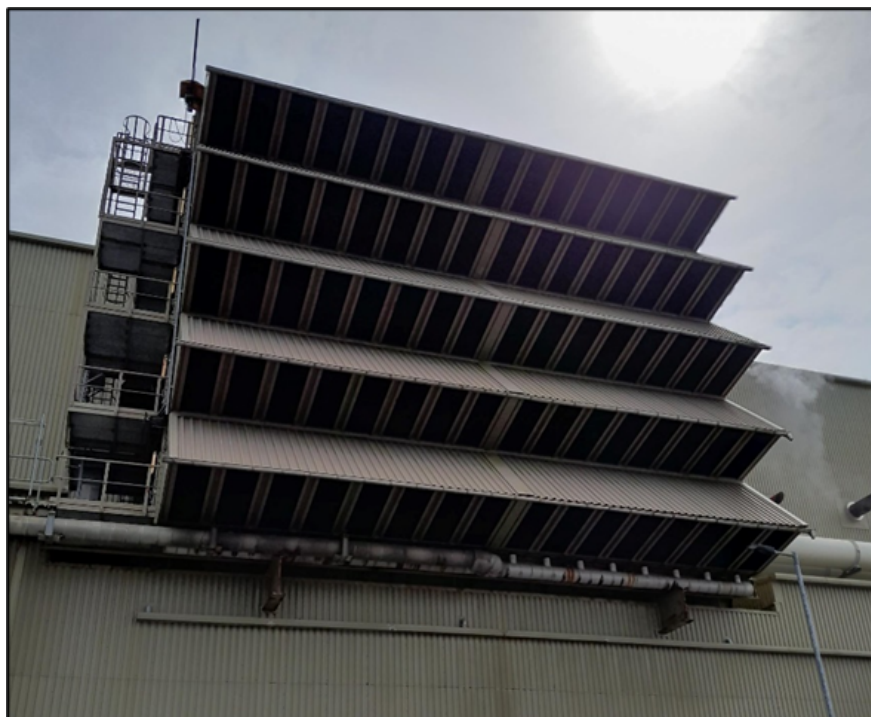


Image 1 – showing Unit 11's air filtration vents, taken on 26 July 2024

Seal pit

Near the seal pit it was observed that the sampling ancillary pipework had become rusted due to spray from the salt water in the pit - the operator commented that it is due to replace affected parts. Many of the metal structures surrounding the seal pit appeared to be rusted. The foam is produced from the aeration of the water as it drops into the pit generating significant turbulence and spray. The operator has begun researching a project that aims to calm the cascading effect of the seal pit water, which looks to reduce the amount of foam produced.

Combined Cycle Gas Turbine (CCGT) - Unit 51

Officers went inside CCGT Unit 51, which was operational at the time of visit. A tour was given showing the pipe network and testing station within the unit and sections around the turbine house. No permit non-compliances were noted at the time of inspection.

Water return chambers

Officers viewed the secondary water return chamber with an oil skimmer present on the surface. Any oil leak from the generators adjacent to the CCGTs is captured within the drainage systems by a belt with the remaining water piped below ground to the secondary return chamber for further treatment. Officers queried how oil from these chambers are removed - this is done manually on an ad hoc basis when further treatment is required as the majority of the oil is removed by the primary treatment.

Officers proceeded past the ground level transformers area, which were afforded with sealed drainage that led to a site interceptor. The IBC collects any residual oil and grease from the area is sent to the designated waste storage area for appropriate removal via a licenced contractor.

Waste storage area

There is a designated area for the segregation, separation, and storage of general waste streams. This is relatively small volume and consists of pallet wood, waste packaging/wrapping, and discarded metal parts. This waste is collected and recycled/disposed of by an external contractor, although managed by the operator daily. The area is afforded with a large working area which makes vehicle manoeuvring easier.

Sampling stations

Measurement instruments are located on each of the five cooling water pipelines between the cooling water pumps and the main power plant area. The operator discussed the reliability of the flow readings and the problems that can arise in certain situations. The pipes are buried making accessibility more difficult any maintenance is required.

Chemical Dosing Plant, MCW

The operator touched on its biological growth maintenance strategy for inorganic chemical compound using Sodium hypochlorite (NaOCl) to prevent the growth of organisms. Such growth can impact site mechanics by choking pipelines and cause surges in releases when dislodged. The operator noted that their recent dose application has been successful in preventing biological growth. Spoke about how a very small dilution is used to ensure the maximum emission limit value prescribed in the permit is not exceeded.

Water Intake - Abstraction Licence 22/61/6/0156

A constant water supply is a vital requirement of the station's energy production process. The operator holds a water abstraction licence for non-evaporative cooling, which was issued in 2014 and expires on 31 March 2025. A MCERTS scheme is required to measure the quantities of water abstracted.

At the time of inspection contactors were maintaining the fish guidance system along the intake from the Pennar Gut. A unit that was lifted out of the water housed several speakers and lighting systems. When in use, the speaker unit is pulsed, and the lights emit a strobing effect to drive fish away from the abstraction point. There are 72 number of these systems, all requiring routine maintenance, cleaning, and replacement of defective parts.



Image – showing the Pennar Gut, taken on 26 July 2024

Further Discussions

Officers concluded the site tour and inspection in the meeting room where summary updates were provided by the operator on the following topics:

- The undertaking of C Inspections and outage maintenance of units:
U11 conducted March - April, U51 conducted May - July, and U41 conducted July – September.
- Operator recently obtained its 5-year MCERTS recertification with all flow meter passing their inspection. Also, ISO 14001 accreditation regained.
- Unit 11 Silencer - touched on the noise impact assessment with modelling and the stripping out of the unit.
- Temperature After Turbine (TAT) – a reduction in the exhaust gas temperature, which can lead to damaging boiler (HRSG) tubes. The operator dropped the temperature to resolve the issue, causing a change in combustion – this is an ongoing process until the root cause can be determined. Comments with regard to the method change affecting overall efficiency levels.
- Continuous Emissions Monitoring Systems (CEMS) - accounting for the invalid days this year to date.
- New internal environmental reporting system.

Pollutant Release and Transfer Register (PRTR) returns

A discussion was had surrounding the recent PRTR data submitted where it was declared by the operator that the total tonnage for the 5 LCPs for NO_x was higher than the submitted PRTR data. Typically, the PRTR tonnage mass will be higher due to the requirement to report the total emissions from all sources on site i.e. < 190MWe.

A presentation was given illustrating that, during the monitoring period, Unit 11's Fuel Gas Flow Meter stopped transmitting data to the servers leaving a gap in statistics. A calculation was performed to interpolate fuel gas flow from the output of the unit, which provided a figure for the missing data. The estimation resulted in a larger uncertainty range.

Following the inspection, a discrepancy in the figures was picked up by the operator and an updated HR1 was sent to NRW with the correct NOx tonnage.



Image – showing three of the five LCP unit stacks, taken on 26 July 2024

Abstraction Renewal - Licence 22/61/6/0156

The operator's abstraction licence is due for renewal on 31 March 2025. Discussions were had surrounding the submitted application and the recently issued Valid Letter from NRW's permitting department, which outlined the determination timescales going forward. NRW will update the operator with regard to the progress of the application in due course.

Officers left site at 14:00.

Alex Bowder and Rhydian Cox

Senior Officers - Southwest Wales Industry Regulation

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Rhydian.Cox@cyfoethnaturiolcymru.gov.uk

END OF REPORT

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.