

Compliance Assessment Report CAR_NRW0040861

Permit being assessed: RP3133LD.

For: Aberthaw Power Station , held by RWE Generation UK plc

At: The Leys , Aberthaw, Vale of Glamorgan, CF62 4ZW.

Type of assessment carried out: Site Inspection, Reason: Routine.

On 23/12/2022 between 10:00 and 15:00.

Parts of permit assessed: Emissions, monitoring, decommissioning, flood defences and reporting

NRW Lead Officer: Antony Leakey.

Report sent to: Chrissie Matthews, Environmental Consenting and Permitting Advisor on 07/02/2023.

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

Part of permitted activity assessed (criteria)	Assessment result	Permit condition
B2 - Infrastructure - Closure and decommissioning	Assessed (A)	
C2 - General Management - Management system and operating procedures	Assessed (A)	
E3 - Emissions - Surface water	Assessed (A)	
E2 - Emissions - Land and groundwater	Assessed (A)	
G1 - Monitoring and Records, Maintenance and Reporting - Monitoring of emissions and environment	Assessed (A)	
G4 - Monitoring and Records, Maintenance and Reporting - Reporting and notification to Natural Resources Wales	Assessed (A)	

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

Total number of 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**Aberthaw Power Station****Report review and site inspection – 26 October 2022**Surface water monitoring and reporting

RWE previously reported loss of availability of the CEMS on the CW outfall (W2). This was due to planned power interruptions for maintenance during the period when a temporary generator was providing site electricity supply.

A permanent power supply is now operational and future instrument communications faults are expected to be infrequent.

The Hach Lange FP360SC oil in water monitor has been returned to service using a pumped sample into an IBC. The monitor is visually checked as part of the ongoing maintenance routine and is calibrated every 3 months. Calibration records have not been examined.

RWE has proposed that reporting against the turbidity action level of 100 FTU (absolute value) will be considered when a variation application for the station permit to incorporate post-decommissioning monitoring and emission limits is submitted by the new owners Cardiff Capital Region Energy (CCR) upon successful determination of the permit transfer.

NRW has reviewed turbidity data, which is variable and may reflect backflow of seawater into the drains suggesting that the instrument location will not be suitable for detecting high suspended solids loading during the demolition phase.

It is also noted that the water continuous monitoring system failed at the end of November and was not able to be reinstated by the end of December. This is unlikely to increase pollution risk now that decommissioning activities have completed, if visual and spot sampling checks continue, and the oil skimmer systems are maintained in good operating condition. However, continuous pH, turbidity and oil in water/hydrocarbon oil index will be required during the demolition and redevelopment phase when mobilisation of residual contamination is more likely.

These issues will need to be communicated to CCR as part of the final handover process.

RWE has confirmed that CCR are aware of the surface water monitoring issues for resolution prior to demolition phase, including the need for a permit variation.

Seawater discharge metals monitoring

RWE confirmed that manual samples of water in the CW system are taken once a week and are refrigerated on site.

Preservation arrangements for some metals may require chemical stabilisation to achieve

reliable results.

Monitoring data was submitted by RWE for the 36" drain that includes influence of western flank run-off from the ash mound (via the western perimeter ditch, settling pond and coal stock drainage "sump").

The data suggest that there is high dilution (as might be expected), particularly since closure of the station with limited discernible influence from the ash run-off.

Hazardous inventory removal

The HFO and gas oil tank farm decommissioning is now understood to be complete, although this has not been verified on site. Plant Area Sign Off Sheet DWS-9-ASO-1110-Fuel Oil Storage Tanks and Rail Supply Line sets out details of the extent of decommissioning and residual inventory needing careful management during demolition.

HFO system low points in the boiler house basement continue to be monitored regularly by opening closed drain valves to assess accumulation of residual oil. This area was seen to contain some tarry HFO residue within the small, curbed pump plinths. These areas are likely to require management as hazardous waste during the demolition phase.

The north and south basement oil skimmers were examined and seen to be in good condition. Very small quantities of oil are being recovered usually following rainfall events when residual oil in the drainage channels is flushed out. The drainage covers are fused in position by corrosion products preventing removal for cleaning the channels. The covers will require breaking out to allow cleaning during the demolition phase.

Details of CCTV or other survey of underground drainage systems/pipework to establish integrity is not recorded in the RPS reports and this will need to be taken into consideration when demonstrating no deterioration at permit surrender (see section below).

Oil filled cables and out of service transformers have been blown clear/drained. Cables on RWE land have been removed, but some remain in situ on adjacent National Grid land.

Some FBA and PFA deposits remain in difficult to access plant areas which will require removal as part of the demolition phase.

RWE has confirmed that all the above issues are included in the handover documentation provided to CCR.

Improvement Condition IC21 – Biota Surveys

The latest biota survey was undertaken on 4-5 April 2022. The report shows a general reduction in metals, and in particular elevated mercury levels in the outfall mixing zone since the last survey in 2017 and this is attributed to significantly reduced load factor up to closure of the power station in 2019. The 2022 analytical data are subject to higher limit of detection which potentially masks the detailed trends, but this does not appear to affect the overall conclusion that the power station discharge influence is reversing following closure.

There is likely to be benefit in at least one further survey in 5 years' time or at surrender of

the permit to confirm this conclusion. This aspect will be kept under review by NRW and will be discussed at the time of proposed permit surrender if not before.

Permit status and pre-demolition phase

The original permit determination did not require baseline data collection, and this was on the basis (following completion of related improvement conditions) that the infrastructure provided good protection of soil and groundwater if it was appropriately maintained and any spills or other events with potential to cause long-term contamination were reported to EA/NRW and remediated at the time to an agreed standard.

RPS reports Phase 1 and 2 Contaminated Land Assessment - Aberthaw Power Station - Interpretative Ground Investigation Report have been reviewed.

NRW notes the identification of areas of contamination, some of which are classed as minor and potentially not requiring further action. However, in the absence of agreed baseline soil and groundwater contaminant data, all contamination may potentially require some form of remediation, even if it is through monitored natural attenuation. It will be necessary to submit remediation and monitoring proposals ahead of the demolition phase as part of the permit variation to allow the transition from decommissioning to demolition.

It is also noted that the historic groundwater monitoring data collected by RWE during the permitted period of operation (BH12 and BH13) has not been used in the assessment. The reasons for this are unclear and this aspect will also need to be addressed ahead of permit surrender.

RWE has confirmed that CCR have been made aware that there is no baseline data through the provision of the Phase 1 and 2 Ground Investigation reports. RWE will provide the BH12 and BH13 data set to CCR as part of the information transfer.

In addition to completion of the recommended actions in the Phase 2 report NRW also recommends the following are carried out before a permit surrender application is made and details of the outcome included in the application:

- During demolition and clean-up of any locations where either contamination or potentially contaminating activities were noted confirm the level of, or absence of, residual contamination in the subsurface using a combination of soil vapour, soil and where applicable, shallow groundwater field testing and sampling.
- Upgrade the groundwater monitoring network (to fill in gaps) so that groundwater can be monitored and sampled around the down-gradient perimeter of the site (where groundwater leaves the site to the SW, S and SE) and at depths of all potential pathways. Discussion of potential areas for improvement and design of the monitoring network with NRW is recommended before installation. Improving the network will also help identify any ongoing sources of contamination that may need to be dealt with.
- Groundwater data on the figure on page 84 of the Phase 2 report indicate an area of groundwater contamination in the centre of the site between BH05 and BH47.
- Vinyl chloride (chloroethene) was detected at one borehole location (BH05), close to the former site garage, at concentrations of 7.33, 10.5 and 11.2 µg/l; which exceed the Environmental Quality Standard (EQS) and Drinking water Standard (DWS) of 0.5 µg/l. Vinyl chloride may pose a risk to current and future site users. Although vinyl

chloride was only detected in one borehole, due to its low EQS/DWS, toxicity, and high volatility, it is important that the distribution of vinyl chloride (and any related chlorinated compounds) is delineated in soil and groundwater in the vicinity of BH05 and a risk assessment completed. Remediation may be required depending upon the results of the risk assessment.

ACTION: RWE to investigate the extent of vinyl chloride and any associated chlorinated compounds contamination in the vicinity of borehole BH05 and undertake a risk assessment based on the results within 3 months of the issue date of this report, or other time scale agreed in writing with NRW.

Any subsequent assessment and remediation, either before or during demolition/construction activities, needs to be conducted using a consistent approach based on the Conceptual Site Model, collecting data as indicated above using field measurements and laboratory-based sample analysis. During demolition and development activities the absence of contamination cannot be assumed and confirmation must be obtained.

Details of inspection and maintenance records for some subterranean infrastructure (e.g., drainage channels and culverts) are not identified in the RPS reports. Any areas for which records do not exist must be clearly identified and described in the site handover file. These areas of the site may also need to be subject to cleaning/remediation prior to or during the demolition phase.

The implications of contamination likely occurring during the operational phase under the IPPC/IED regime (2007 to date) are that remediation will be necessary before the permit can be surrendered and site redevelopment progressed.

RWE has confirmed that CCR were provided with copies of the Phase 1 and 2 Contaminated Land Assessment Reports as part of the information transfer process.

Additionally, the current permit still reflects the pre-LCP Bref review requirements and does not permit demolition activities and implement suitable controls for this phase. A variation application will be required making proposals for the demolition phase in terms of management and control of pollution risks. Previous discussions with RWE have suggested approaches to this application and are outlined in report CAR_NRW0036390 dated 24/2/20.

Flood defence inspection and maintenance

The main power station and ash mound landfill sites are protected from coastal inundation by a concrete sea wall and storm beach. The storm beach is protected on the south facing shore by a series of stone, concrete and timber clad groynes.

RWE undertake regular civil asset surveys, the last formal Engineering Report for the sea flood defence was produced in April 2020. This report, as well as the defect register and current civil asset defect status, has been shared with CCR via the RWE Handover Health and Safety File.

RWE has completed repairs to fire and damaged eroded groynes and replaced corroded beach access ladders in recent years as well as undertaking regular storm beach regrading. Two sea wall defects are identified along the main power station section of the defences.

These defects have been identified since at least 2015 and do not appear to have deteriorated in the last 7 years to date.

The defects are noted in the NRW flood asset register and scheduled for visual inspection every 5 years (next inspection 2025). However, NRW flood asset engineers have advised a precautionary approach to the identified defects, particularly considering the recommendations in the 2020 survey for repair within 2 years, i.e., during 2022.

The NRW current condition assessment for this asset is “fair”, but as the asset is potentially protecting vulnerable locations from flooding impact, e.g. basement infrastructure, the duty holder is advised to consider the need for restoration to “good” status without delay.

RWE has provided CCR with outline repair proposals which have not been reviewed by NRW because the asset maintenance is the responsibility of the landowner. However, the works will require a Flood Risk Activity Permit [Natural Resources Wales / Flood risk activity permits](#) and potentially a Marine Licence [Natural Resources Wales / Marine licensing](#), and NRW will have the opportunity to provide comments on the proposals when the application(s) are received.

A competent civils contractor will need to provide further advice on these repair works.

RWE have provided CCR with the site Civil Asset Survey and Register which includes all of the observations and corrective actions taken on the flood defence assets.

Emissions review

Monitoring data and annual performance indicators for 2022 and the annual report for 2021 (condition 4.2.2 compliance) have been reviewed and no breach of permit conditions was identified with regard to conditions that remain relevant to the post-operational phase of the station.

High deposit gauge results were reported over the 80-100 mg/m²/day guideline value during 2021 and 2022. Analysis of the filter papers has shown that the deposition is predominately mineral and plant matter with very few cenospheres and coal particles observed, indicating limited contribution from pfa and residual coal movements during decommissioning.

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.

What are suspended scores?

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 and Waste action criteria (used in section 1 and 2):

A: Permitted activities

- A1 Specified by permit

B: Infrastructure

- B1 Infrastructure – Engineering for prevention and control of emissions
- B2 Infrastructure – Closure and decommissioning
- B3 Infrastructure – Site drainage engineering (clean and foul)
- B4 Infrastructure – Containment of stored materials
- B5 Infrastructure – Plant and equipment

C: General management

- C1 General management – Staff competency/training
- C2 General management – Management system and operating procedures
- C3 General management – Materials acceptance
- C4 General management – Storage, handling, labelling and segregation

D: Incident management

- D1 Incident management – Site security
- D2 Incident management – Accidents, emergency and incident planning

E: Emissions

- E1 Emissions – Air
- E2 Emissions – Land and groundwater
- E3 Emissions – Surface water
- E4 Emissions – Sewer
- E5 Emissions – Waste

F: Amenity

- F1 Amenity – Odour
- F2 Amenity – Noise
- F3 Amenity – Dust/fibres/particulates and litter
- F4 Amenity – Pests/birds and scavengers
- F5 Amenity – Deposits on road

G: Monitoring and records, maintenance and reporting

- G1 Monitoring and records, maintenance and reporting – Monitoring of emissions and environment
- G2 Monitoring and records, maintenance and reporting – Records of activity, site diary/journal/events
- G3 Monitoring and records, maintenance and reporting – Maintenance records
- G4 Monitoring and records, maintenance and reporting – Reporting and notification to Natural Resources Wales

H: Resources efficiency

- H1 Resource efficiency – Efficient use of raw materials
- H2 Resource efficiency – Energy efficiency

Enforcement response

Any permit condition non-compliance 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 20 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 – 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.