

## Compliance Assessment Report

**Report ID:**  
**CAR\_NRW0031587**

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

|                              |   |             |            |     |       |
|------------------------------|---|-------------|------------|-----|-------|
| Site                         | Aberthaw Power Station  | Permit Ref  | RP3133LD   |     |       |
| Operator/Permit holder       | RWE Generation UK plc   |             |            |     |       |
| Regime                       | Installations   |             |            |     |       |
| Date of assessment           | 02/03/2017  | Time in     | 09:30      | Out | 16:30 |
| Assessment type              | Site Inspection   |             |            |     |       |
| Parts of the permit assessed | Improvement programme, monitoring, resource efficiency, emissions |             |            |     |       |
| Lead officer's name          | Leakey, Antony  |             |            |     |       |
| Accompanied by               |   |             |            |     |       |
| Recipient's name/position    | Amy Lavisher/ Environmental Engineer                              | Date issued | 05/05/2017 |     |       |

### Section 1 – Compliance Assessment Summary

This is based on the requirements of the permit under the Environmental Permitting Regulations or the licence under the Water Resources Act 1991 as amended by the Water Act 2003. 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 |
|--|--------------|-----------------------|
| B1 - Infrastructure - Engineering for prevention and control of emissions                        | A            |                       |
| C2 - General Management - Management system and operating procedures                             | A            |                       |
| E1 - Emissions - Air   | A            |                       |
| E2 - Emissions - Land and groundwater  | A            |                       |
| E3 - Emissions - Surface water   | A            |                       |
| F3 - Amenity - Dust/fibres/particulates and litter   | A            |                       |
| G1 - Monitoring and Records, Maintenance and Reporting - Monitoring of emissions and environment | A            |                       |
| H1 - Resource Efficiency - Efficient use of raw materials  | 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.

|                                    |          |   |          |
|------------------------------------|----------|---|----------|
| <b>Number of breaches recorded</b> | <b>0</b> | <b>Total compliance score</b><br>(see section 5 for scoring scheme) | <b>0</b> |
|------------------------------------|----------|---|----------|

**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

### **Aberthaw Power Station site visit and report review Q1 2017**

#### 2015 Final deposition monitoring report (IC7)

Thank you for submitting the seventh and final report ("Monitoring of acidifying and eutrophying deposition and ecological parameters at seven potentially vulnerable Natura 2000 sites in England and Wales") in respect of the above improvement condition, as required by the Large Combustion Plant Directive permit review undertaken in October 2007.

The 2015 results from this, the seventh and final report, appear consistent with previous years. There is some indication of a gradual decline in sulphur dioxide concentrations and sulphur deposition but the length of the dataset makes it difficult to say whether this is part of a long-term decrease or short-term variability. In contrast, there seems to be little change to nitrogen dioxide levels and nitrogen deposition but it is not possible to identify the likely sources from the data collected.

Adjusted values are higher than those previously reported but these adjusted values remain close to those predicted by JEP when undertaking the appropriate assessment in 2006 [Brooke et al. (2006) Impact of atmospheric emissions from JEP coal- and oil-fired power stations on sites protected by the Habitats Directive. JEP report]. Acid deposition at the monitored habitat sites, as a whole, remains above the acidity critical load but the individual (alone) contribution from the ESI and Refinery plant appears small.

We reviewed the monitoring programme in 2015/16 and reached the following conclusions:

The aim of the monitoring programme was to provide data to increase confidence in the Environment Agency's 2006 permitting conclusion and address Statutory Nature Conservation Body concerns. The monitoring data provides information on pollutant levels and current conditions at each habitat site. This indicates that the habitat sites may be compromised by poor air quality as total acid and nitrogen deposition is higher than the critical load at all the monitored habitat sites. The monitoring data does not provide a means of source attribution. Confounding factors make it difficult to tease out signals from the monitoring data and the most useful information is likely to come from modelling.

Additional modelling carried out by the regulators indicates that while opted-in sites contribute to atmospheric pollutant concentrations and deposition, there are large impacts, particularly from nitrogen deposition, from historical pollution and other non-ESI and Refinery sources.

Little real change was evident between the 2 vegetation surveys and conditions at the monitored habitat sites were found to be similar to those of other habitat sites across the country. There is no evidence of recent deterioration in site condition. This is not unexpected as vegetation response time to air pollution impacts is slow, and can take several years. The timescale on monitoring is not long enough to pick out any real changes. There is some evidence that pH is recovering but it is difficult to say whether or not this represents historical or more current reductions in sulphur emissions. Plant species at the habitat sites will be influenced by changes in both acidity and

nutrient levels and it is hard to tease the causes apart.

Vegetation response time to air pollution impacts is slow, and can take several years. The timescale reported is not long enough to pick out any real changes. Changes are only starting to be observed in the Environmental Change Network after 20 years of monitoring at 3 yearly intervals.

We recognise that the concentration, deposition and vegetation monitoring has been (and would continue to be) a very useful scientific exercise for reporting on site condition. In terms of reporting on potential impacts of ESI and Refinery emissions on the habitat sites involved in the monitoring programme, continued monitoring is unlikely to provide any further insight. The monitoring to date has provided the necessary confidence in, and validation of, the modelling approaches used. On that basis, further monitoring is difficult to justify.

NRW is content with the additional report and data, and has no additional concerns that would change the findings of our 2015/16 review. The submission of the seventh report therefore marks the conclusion of the monitoring condition.

#### Unit 9 LNBo commissioning report (IC37)

A review of FGD inlet dust concentration data was undertaken during a site visit on 2 March 2017. Examination of the data trends does not suggest that U9 performance is significantly different since commissioning of the LNBo modifications or from the other units. Some variability in the unit EP performance is apparent and further work to examine this may prove beneficial in minimising dust carryover into the FGD. In particular the unit 7 peak levels are higher than for the other units.

**ACTION: RWE to consider potential benefits of routine review of FGD inlet dust data in order to improve EP performance and discuss at next site meeting.**

#### Operator Monitoring Assessment (OMA) and QAL2/AST report review

OMA for water emissions was undertaken on 7 December 2016 and resulted in a score of 76%. Several points for potential improvements are recommended:

Completion of in-house monitoring methods review programme

Check W1 location specified in monitoring procedure LP/ENV/1039

Consider update training for relevant staff involved in monitoring management or review of in-house procedures with specialist.

Review lagoon monitoring location and method to ensure that samples are fully representative.

Review composite sample container materials of construction and preservation requirements effects on mercury analytical reliability.

More detailed documentation of in-house procedures and sample preservation requirements.

Consideration of participation in inter-laboratory proficiency schemes and AQC and development of competency and training schedules for in-house analyses.

The U7 AST and U9 QAL2 reports dated 5 October 2016 have been audited and the requirements of the BS EN 14181 specification for the functional tests (BS EN 14181, Annex A) were met.

QAL2 and AST work for 2017 has been delayed due to a flue gas leak within the windshield and subsequent off-load period due to low summer demand and coal diet change modification work.

Unit 7 flow testing using tracer gas technique has been completed and the results will be reviewed at the next site visit.

## Site Visit - 2 March 2017

An overview tour of the **boiler water treatment plant** was undertaken. The key performance parameter used for plant efficiency monitoring is raw: feed water conversion. A target value of 70% is considered to be acceptable. No other measures are employed to ensure that chemical use is optimum, other than the routine control parameters (pH, conductivity and silica levels) that are used to monitor boiler feed water quality.

The sand filters originally installed are not in use as the raw water is from a groundwater source and is sufficiently free from suspended solids. This avoids the use of filter backwash water periodically.

Only the atmospheric degasser is in operation. The vacuum degasser is not in use as it was found to have no impact on carbonate cation levels and the deaerator and LP condenser vacuum provide sufficient oxygen removal.

The oxygen scavenger hydrazine is only dosed during start up and shut down.

96% Sulphuric acid is used for cation resin regeneration as it is easier to handle than the alternative hydrochloric acid. 46% sodium hydroxide solution is used for anion resin regeneration.

Reverse osmosis has been investigated as a higher efficiency option to produce boiler water. However, it is not considered to be viable for hard water supplies such as the Ely Wells groundwater.

Implementation of **environmentally critical training** was discussed. A six month roll out programme is being implemented, including simulator training. The reduced load factor operation anticipated in the future has resulted in restructuring proposals including role mergers on the shift teams. Loss of resilience has potential to increase errors and cause noise or other environmental issues. This aspect will be reviewed at future visits to ensure that performance does not deteriorate.

The black start OCGT flues are to be replaced as they have come to the end of their useful serviceable life. It is proposed that this is done on a like-for-like basis. This is agreed subject to confirmation that there are no air quality improvement benefits to be gained from changing the flue design.

**ACTION: RWE to consider potential benefits of alternative OCGT flue design.**

## Coal diet variation application

The application is now duly made and determination is proceeding. It is noted that stocking of bituminous coals using the modified fuel conveying route is due to commence in May 2017. This is acceptable ahead of determination of the application to vary the coal diet, subject to satisfactory demonstration of system improvements at the next site visit on 7 June 2017.

## Emissions review

**Elevated FGD seawater discharges** associated with the composite sampling regime are considered to be approaches to limit due to the current uncertainty in the measurements.

It is noted that lead and zinc concentrations were elevated in October 2016, rather than mercury. In order to resolve the continuing uncertainty associated with this monitoring ahead of the LCP Bref permit review, which may introduce changes to water discharge monitoring, NRW recommends consideration of modifications to the monitoring arrangements arising from the recent water OMA and/or review of compliance period taking into account likely changes arising from the LCP Bref review.

**ACTION: RWE to consider options for addressing FGD absorber outlet monitoring issues**

**for review at next site meeting.**

The unusually high deposition data around Aberthaw for the period 4/1-2/2/17 are noted.

**ACTION: RWE to confirm composition analysis associated with these unusual results.**

The dissolved oxygen measurements not reported for January and February 2017 requires follow up and the implications for control of seawater discharge conditions requires review.

**ACTION: RWE to provide details of DO probe failure, implications and corrective action taken.**

All other emissions are within permit limits and there are no current trends that require review.

The annual report is noted.

END

## EPR Compliance Assessment Report

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|                        |                        |            |            |
|------------------------|------------------------|------------|------------|
| Site                   | Aberthaw Power Station | Permit Ref | RP3133LD   |
| Operator/Permit holder | RWE Generation UK plc  | Date       | 02/03/2017 |

### 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.

Other than the provision of advice and guidance, at present we do not intend to take further enforcement action in respect of the non-compliance identified above. This does not preclude us from taking enforcement action if further relevant information comes to light or advice isn't followed.

### 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 report should not be released to the public register(s) on the grounds of commercial confidentiality, you must write to your local area office within fifteen 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](mailto: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.