

# Notice of variation with introductory note

Environmental Permitting (England & Wales) Regulations 2010

---

RWE npower plc

Aberthaw Power Station  
Aberthaw  
Near Barry  
Vale of Glamorgan  
CF62 4ZW

Variation application number

EPR/RP3133LD/V004

Permit number

EPR/RP3133LD

# Aberthaw Power Station

## Permit number EPR/RP3133LD

### Introductory note

**This introductory note does not form a part of the notice.**

The following notice gives notice of the variation of an environmental permit.

This minor technical variation is to install and operate (on a temporary basis) a pilot plant for testing carbon capture techniques on emissions to air from the power station. The pilot plant will comprise two amine gas cleaning systems in series, the first to remove sulphur dioxide (SO<sub>2</sub>) and the second to remove carbon dioxide (CO<sub>2</sub>) from a stream drawn from the exhaust gas cleaning system. The stream will be taken off after the Electro Static Precipitators (ESP) but before the Flue Gas Desulphurisation (FGD) plant. All gases will be returned into the stack downstream of the FGD plant. Any carbon dioxide captured would not be stored, the purpose of the trial is only to demonstrate the viability of its capture.

The pilot plant is sized to remove approximately 50 tonnes /day of CO<sub>2</sub>, which is equivalent to a combustion plant producing approximately 3 MW of electricity, compared to the power station total output of 1,586 MW. The plant is expected to operate for up to 2 years. Steam to strip the recovered SO<sub>2</sub> and CO<sub>2</sub> from the amine absorbents will be provided from a small stand alone gas-oil fired boiler, of approximately 3MW rated thermal input.

The Schedules specify the changes made to the original permit as previously varied.

Schedule 1 of the notice lists any conditions that have been deleted, Schedule 2 of the notice lists any amended conditions and Schedule 3 of the notice lists any conditions that have been added. Schedule 4 of the notice identifies any changes to the site plan.

The status log of a permit sets out the permitting history, including any changes to the permit reference number.

#### Status Log of permit

Detail	Date	Response Date
Application EPR/RP3133LD	Duly made 31/03/06	
Schedule 4 Notice / Additional information received	Notice issued 26/07/06	4/10/06, 01/11/06, 10/11/06, 05/12/06, 01/03/07, 16/03/07, 08/08/07, 10/08/07, 22/08/07, 05/09/07 & 11/09/07
Public Participation Directive Consultation	31/10/07 to 27/11/07	
Permit determined	21/12/07	
Variation Notice GP3635XF	Issued 09/01/08	
Variation application EPR/RP3133LD/V003	Duly made 05/03/10	
Variation determined EPR/RP3133LD/V003	13/05/10	
Variation application EPR/RP3133LD/V004	Duly made 31/01/11	

**Status Log of permit**

<b>Detail</b>	<b>Date</b>	<b>Response Date</b>
Additional Information received – addendum to variation application EPR/RP3133LD/V004	23/03/11	
Variation determined EPR/RP3133LD/V004	20/06/11	

**Other Part A installation permits relating to this installation**

<b>Operator</b>	<b>Permit number</b>	<b>Date of issue</b>
RWE npower plc	DP3432SW	30/03/07
RWE npower plc	BP3339BH	04/05/07

**Other existing Licences / Authorisations / Registrations relating to this site**

<b>Operator</b>	<b>Reference number</b>	<b>Date of issue</b>
RWE npower plc	21/57/31/0040	30/03/07

End of Introductory note.

**Notice of variation**

Environmental Permitting (England and Wales) Regulations 2010

**Permit number**  
**EPR/RP3133LD**

The Environment Agency in exercise of its powers under regulation 20 of the Environmental Permitting (England and Wales) Regulations 2010 varies the environmental permit issued to

**RWE npower plc** ("the operator")

whose registered office is  
**Windmill Hill Business Park,**  
**Whitehill Way,**  
**Swindon,**  
**Wiltshire.**  
**SN5 6PB**

company registration number **3892782**

to operate a regulated facility at

**Aberthaw Power Station,**  
**Aberthaw,**  
**Near Barry,**  
**Vale of Glamorgan.**  
**CF62 4ZW**

to the extent set out in the schedules.

The notice shall take effect from 20th June 2011

Name	Date
	20 <sup>th</sup> June 2011

Authorised on behalf of the Environment Agency.

**Schedule 1 – conditions to be deleted**

No conditions are deleted.

## Schedule 2 – conditions to be amended

The following conditions are amended as a result of the application made by the operator:-

- Condition 2.1.1 is amended through the addition to table S1.1 in Schedule 1 of the following directly associated activities.

**Table S1.1 activities**

Activity listed in Schedule 1 of the EP Regulations	Description of specified activity	Limits of specified activity
<b>Directly Associated Activities</b>		
Carbon Capture (<10 MW) Pilot Plant	Removal and recovery of SO <sub>2</sub> and CO <sub>2</sub> from power station flue gas.	From flue gas tap off point to return of treated and recovered gases to power station flue gas system, including the storage, use and regeneration of amine absorbents.
Gas-oil fired combustion plant	Supply of steam to the Carbon Capture (<10 MW) Pilot Plant.	Includes storage of gas-oil.

- Condition 2.3.1 is amended through the addition to table S1.2 in Schedule 1 of the following operating techniques.

**Table S1.2 Operating techniques**

Description	Parts	Date Received
Variation Application EPR/RP3133LD/V004	Section 2.1, 2.5.2, 2.16, Appendix A and Appendix B of the supporting information	31/01/2011 (Duly Made)

- Condition 2.5.1 is amended through the addition to table S1.3 in Schedule 1 of the following improvement conditions.

**Table S1.3 Improvement programme requirements**

Reference	Requirement	Date
IC26	The Operator shall submit a written report to the Environment Agency on the commissioning of the Carbon Capture Plant. The report shall summarise the environmental performance of the plant as installed against the design parameters set out in the Application. The report shall also include a review of the performance of the plant against the conditions of this permit as varied and details of procedures developed during commissioning for achieving and demonstrating compliance with permit conditions.	Within 3 months of the completion of commissioning
IC27	The Operator shall submit a written report to the Environment Agency on the operation and performance of the Carbon Capture Plant during its first year of operation. This report shall include monitoring information on releases to the environment and their environmental impact. Specifically, the report shall include but not be limited to the evaluation of emissions of residual amines and their reaction products, including nitramines and nitrosamines, from the installation.	15 months from completion of commissioning

**Table S1.3 Improvement programme requirements**

Reference	Requirement	Date
IC28	The Operator shall submit a written report to the Environment Agency at the conclusion of the trials on the operation and performance of the Carbon Capture Plant. This report shall include monitoring information on releases to the environment and their environmental impact. The report shall also include an assessment of the potential future application of the carbon capture technology tested on full scale combustion plant for power generation, including the environmental impact of emissions and the impact of the technology on energy recovery.	30 months from completion of commissioning or 6 months from closure whichever comes first.

- Condition 2.6.1 is amended through the addition to table S1.4 in Schedule 1 of the following pre-operational measures.

**Table S1.4 Pre-operational measures for future development**

Reference	Pre-operational measures
PM4	Prior to the commencement of commissioning of the Carbon Capture Plant, the Operator shall send a written report to the Environment Agency setting out the details of, including any minor amendments to, the proposed design and operation of the Carbon Capture Plant as set out in the application. The report shall include confirmation that such details and amendments are in conformity with the information given in the application.
PM5	Prior to the commencement of commissioning of the Carbon Capture Plant, the Operator shall send a summary of the amendments to the site Environment Management System (EMS) to the Environment Agency and make available for inspection all new documents and procedures which form part of the revised EMS. This shall include but not be limited to updates to the Accident Management Plan, the Site Protection and Monitoring Plan, and the Site Closure and Decommissioning Plan.
PM6	Prior to the commencement of commissioning of the Carbon Capture Plant; the Operator shall provide a written commissioning plan, including timelines for completion, for approval by the Environment Agency. The commissioning plan shall include the expected emissions to the environment during the different stages of commissioning, the expected durations of commissioning activities and the actions to be taken to protect the environment and report to the Environment Agency in the event that actual emissions exceed expected emissions. Commissioning shall be carried out in accordance with the commissioning plan as approved.
PM7	Prior to the commencement of commissioning, the Operator shall submit to the Environment Agency for approval, a written protocol setting out detailed proposals for the monitoring of emissions to air and to water of the solvents used in the carbon capture plant and their decomposition / reaction products. The proposals shall include, equipment used, sample point locations and methods of analysis to fully characterise emissions. Sampling and testing shall be carried out in accordance with the protocol as approved.

- Condition 3.1.1 is amended through the addition to table S4.1 in Schedule 4 of the following emission points.

**Table S4.1 Point source emissions to air – emission limits and monitoring requirements**

Emission point ref. & location	Parameter	Source	Limit (including unit)	Reference period	Monitoring frequency	Monitoring standard or method
A16 – Carbon Capture Plant	–	Package Boiler	–	–	–	–

### **Schedule 3 – conditions to be added**

The following condition is to be added:

- Condition 3.4.2 is added to incorporate some odour control conditions.

3.4.2 The operator shall:

- (a) if notified by the Environment Agency that the activities are giving rise to pollution outside the site due to odour, submit to the Environment Agency for approval within the period specified, an odour management plan;
- (b) implement the approved odour management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

**Schedule 4 – amended plan**

No plans are amended.