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**Natural Resources Wales permitting decisions**

# UK Power Reserve Ltd (Aberdare PS) Decision Document

Rev No1

## Bespoke permit

**The application number is: PAN-005340**

**The Applicant / Operator is: UK Power Reserve Limited**

**The Facility is located at: Aberdare Power Station, C1 Trade Park, Aberamen  
Park Industrial Estate, Aberdare, CF44 6DA**

We have decided to grant the permit for Aberdare Power Station operated by UK Power Reserve Limited.

We consider in reaching that decision we have taken into account all relevant considerations and legal requirements and that the permit will ensure that the appropriate level of environmental protection is provided.

## Purpose of this document

This decision document:

- explains how the application has been determined
- provides a record of the decision-making process
- shows how all relevant factors have been taken into account
- justifies the specific conditions in the permit other than those in our generic permit template.

Unless the decision document specifies otherwise we have accepted the applicant's proposals.

## Structure of this document

- Table of contents
- Key issues

## Table of Contents

### Contents

Bespoke permit .....	2
Purpose of this document .....	3
Structure of this document .....	4
Table of Contents .....	5
Contents .....	5
Key issues of the decision .....	6
1 Our decision .....	6
2 How we reached our decision .....	7
2.1 Receipt of Application .....	7
2.2 Consultation on the Application .....	7
2.3 Requests for Further Information .....	7
3 The Legal Framework.....	7
4 The Facility .....	8
4.1 Description of the Facility and related issues .....	8
4.2 Operation of the Facility – general issues .....	13
5 Minimising the Facility’s environmental impact.....	15
5.1 Assessment of Impact on Air Quality .....	15
5.2 Impact on Habitats sites, SSSIs, non-statutory conservation sites etc.....	16
5.3 European Sites.....	17
Assessment of Likely Significant Effect: .....	17
Appropriate assessment: .....	17
HRA Overall conclusion: .....	17
<b>SSSI Assessment .....</b>	<b>17</b>
6 Setting ELVs and other Permit conditions .....	17
6.1 Monitoring .....	18
6.2 Other Permit Conditions.....	19
6.3 Reporting .....	20
7 MCPD/SG Charges and Subsistence Fees .....	20

## Key issues of the decision

### 1 Our decision

We have decided to grant a permit for Aberdare Power Station.

We consider that, in reaching that decision, we have taken into account all relevant considerations and legal requirements and that the permit will ensure that a high level of protection is provided for the environment and human health.

This Application is to operate a regulated facility which is subject principally to the Medium Combustion Plant Directive (MCPD) and Specified Generator (SG) regulations.

The permit contains many conditions taken from our standard Environmental Permit template including the relevant Annexes. We developed these conditions in consultation with industry, having regard to the legal requirements of the Environmental Permitting Regulations (EPR) and other relevant legislation. This document does not therefore include an explanation for these standard conditions. Where they are included in the permit, we have considered the Application and accepted the details are sufficient and satisfactory to make the standard conditions appropriate.

## 2 How we reached our decision

### 2.1 Receipt of Application

The Application was accepted as duly made on 13/09/2019. This means we considered it was in the correct form and contained sufficient information for us to begin our determination, but not that it necessarily contained all the information we would need to complete that determination.

The Applicant made **no claim for commercial confidentiality**. We **have not** received information in relation to the Application that appears to be confidential in relation to any party.

### 2.2 Consultation on the Application

There was no requirement to carry out a consultation on the application.

### 2.3 Requests for Further Information

No further information was requested or required.

## 3 The Legal Framework

The Permit will be granted, under Regulation **13** of the EPR. The Environmental Permitting regime is a legal vehicle which delivers most of the relevant legal requirements for activities falling within its scope. In particular, the regulated facility is:

- plant as described by Schedule 25A and Schedule 25B covering the Medium Combustion Plant Directive (MCPD) and Specified Generator (SG) regulations respectively;
- subject to aspects of the Well-Being of Future Generations (Wales) Act 2015 and the Environment (Wales) Act 2016 which also have to be addressed.

We address the legal requirements directly where relevant in the body of this document. NRW is satisfied that this decision is consistent with its general purpose of pursuing the sustainable management of natural resources (SMNR) in relation to Wales, and applying the principles of SMNR. In particular, NRW acknowledges that it is a principle of sustainable management to take action to prevent significant damage to ecosystems. We consider that, in granting the Permit a high level of protection will be delivered for the environment and human health through the operation of the Facility in accordance with the permit conditions. NRW is satisfied that this decision is compatible with its general purpose of pursuing the sustainable management of natural resources in relation to Wales and applying the principles of sustainable management of natural resources.

## 4 The Facility

### 4.1 Description of the Facility and related issues

#### 4.1.1 The permitted activities

The Facility is subject to the EPR because it carries out an activity as described in Schedules 25A and Schedule 25B of the EPR:

- One combined Tranche B Specified Generator/existing Medium Combustion Plant aggregated to <50MWth at a specified location



A Generator means any combustion plant generating electricity. The regulations use the term ‘specified generator’ to encompass both individual generators and multiple generators at the same location or site, operated by the same Operator and for the same purpose. The “same purpose” means that having a different function does not stop individual generators being treated as part of a specified generator, e.g. generators with a capacity market agreement or providing a balancing service whether they are under the same contract or not would be classed as operating for the “same purpose” as they generate electricity. Similarly generators with different fuels or technologies are also classed as operating for the “same purpose”.

The specified generator permit will apply to the site, rather than its constituent individual generators. All specified generators equal to or more than 1 MWth will also be Medium Combustion Plant (MCP) and must also meet the requirements of the MCP Directive at the appropriate time. In this instance, the spark ignition reciprocating generator engines are defined as existing medium combustion plant (MCP) on the basis that they were first operated before 20 December 2018; the MCP Directive regulations will apply from 01 January 2024.

Specified Generators are also divided into Tranche A and Tranche B sites, which will determine the relevant permitting date. A site is a Tranche A site if it meets the following criteria:

- It came into operation before 1 December 2016, or
- It is the subject of a capacity agreement arising from the 2014 or 2015 capacity auctions

A generator with a rated thermal input of less than 1MWth will be classed as Tranche A if:

- It is the subject of a capacity agreement arising from the 2014, 2015 or 2016 capacity auctions, or
- A FiT preliminary accreditation application was received by OfGEM before 1 December 2017, or
- Is the subject of an agreement to provide balancing services entered into before 31 October 2017.

Tranche B generators are all those that are not Tranche A.

The site consists of 3 x 6.72 MWth, 1 x 5.13 MWth, and 2 x further 6.72MWth gas fuelled spark ignition reciprocating generators; the main building includes 4 generators with individual 15m stacks and there are 2 generators in another smaller extension building with individual 12m stacks. The generators are expected to operate for more than 50 hours per year under a capacity market or balancing services agreement which was signed after the 31<sup>st</sup> October 2017 which remains in place after Decemebr 2018. Therefore, the site is comprised of Tranche B generators.

#### 4.1.2 The Site

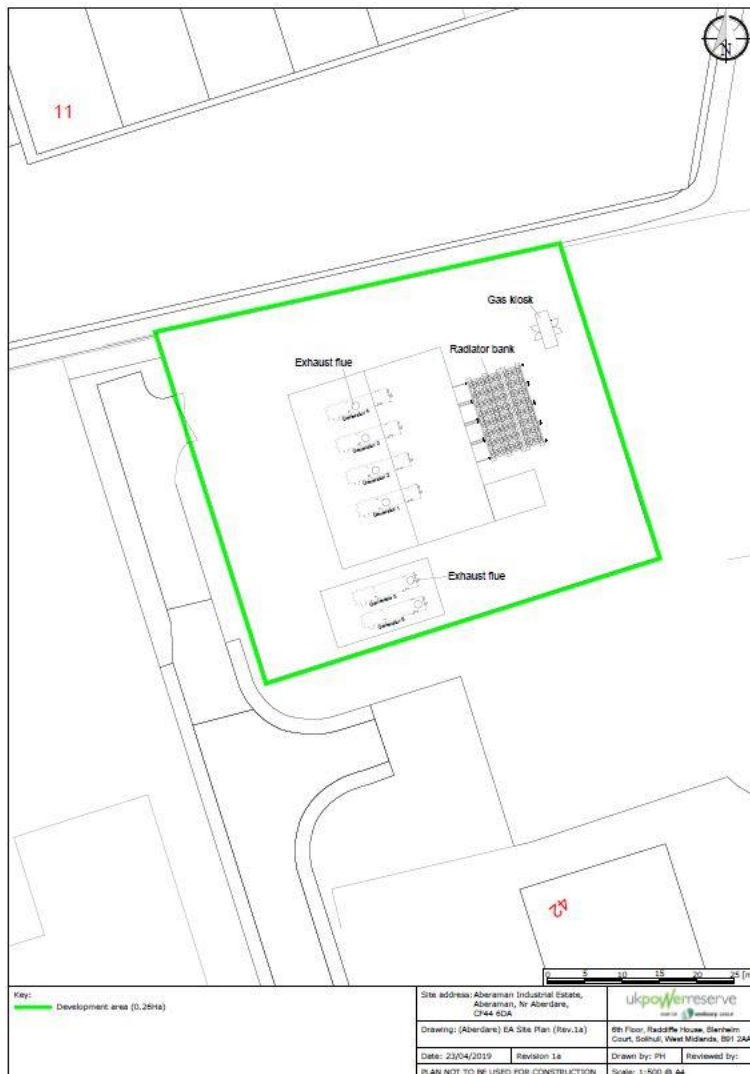
Aberdare Power Station is approximately 3.2 km south east of Aberdare within Aberamen Park Industrial Estate accessed from the B4275. The industrial estate is located within the Cynon Valley River Park and the settlement development limits as defined in the Local Development Plan. The wider estate contains a number of different size and styles of industrial premises including larger single use buildings and smaller 'starter' type units. The site is centred on grid reference SO 02220 00805.

The location plan and site plan is shown in Figure 1 & 2:

**Figure 1: Location Plan**



**Figure 2: Site Plan**



#### 4.1.3 What the Facility does

Aberdare Power Station has been operated by UK Power Reserve Limited since 2012 and was previously operational prior to this date under a different operator.

The facility consists of five GE Jenbacher 620 units (engines 1, 2, 3, 5 & 6 rated at 2.7MWe and one GE Jenbacher 616 unit (engine 4 rated at 2MWe). These units

combust natural gas and produce electricity which is sold onto the National Grid. Four of the engines are fitted with 15m stacks and are situated in a dedicated building of approximately 10m in height. The other 2 engines are containerised and sited outside the building with 12m (vertically orientated) exhausts.

#### 4.1.4 Key Issues in the Determination

The key environmental and human health issues considered during the determination of this variation were:

- **Air quality – Oxides of Nitrogen**

This will be discussed separately in this decision document.

### 4.2 Operation of the Facility – general issues

#### 4.2.1 Administrative issues

The Applicant is the sole Operator of the Facility. We are satisfied that the Applicant is the person who will have control over the operation of the Facility if the Permit were to be granted; and that the Applicant will be able to operate the Facility so as to comply with the conditions included in the Permit, if issued.

#### Relevant Convictions

NRW's COLINS Database has been checked to ensure that all relevant convictions have been declared.

No relevant convictions were found.

## Financial Provision

There is no known reason to consider that the operator will not be financially able to comply with the permit. The decision was taken in accordance with RGN 5 on Operator Competence.

### 4.2.2 Management

We are satisfied that appropriate management systems and management structures will be in place for this Facility, and that sufficient resources are available to the Operator to ensure compliance with all the Permit conditions.

### 4.2.3 Operating techniques

The operator has stated that they will implement the following quality assurance techniques and maintenance schedule, in order to for the generators to achieve and retain optimal performance. In order to enable each generator and the power plant in general to achieve and retain optimal performance in both efficiency and emissions, the plant will engage in the following best available operational management techniques.

We have reviewed the techniques used by the operator and compared these with the relevant guidance notes. The proposed techniques/ emission levels for priorities for control are in line with the benchmark levels contained in TGN M5 and we consider them to represent appropriate techniques for the facility. These are specified in the Operating Techniques table in the permit.

We have specified that the applicant must operate the permit in accordance with descriptions in the application, including all additional information received as part of the determination process.

## **5 Minimising the Facility's environmental impact**

For this kind of regulated activity, the principal emissions are emissions to air. There are no permit conditions for water, land, energy efficiency, odour or noise and BAT does not apply.

The next sections of this document explain how we have approached the critical issue of assessing the likely impact of air emissions from the SG on human health and the environment and what measures we are requiring to ensure a high level of protection.

We have reviewed the operator's assessment of the environmental risk from the facility. The operator's risk assessment is satisfactory. The assessment shows that, applying the conservative criteria in our guidance on Environmental Risk Assessment, all emissions may be categorised as environmentally insignificant.

We will discuss the operators risk assessment in more detail as follows:

### **5.1 Assessment of Impact on Air Quality**

This section of the decision document deals primarily with the dispersion modelling of emissions to air from the stack and its impact on local air quality.

The Applicant has assessed the facility's potential emissions to air against the relevant air quality standards, and the potential impact upon human health. These assessments predict the potential effects on local air quality from the Installation's stack emission.

The air impact assessments, and the dispersion modelling has been based on the facility operating continuously at the relevant long-term or short-term emission limit values, i.e. the maximum permitted emission rate.

We are in agreement with this approach. The assumptions underpinning the model have been checked and are reasonably precautionary. The way in which the Applicant used dispersion models, its selection of input data, use of background data and the assumptions it made have been reviewed by Natural Resources Wales modelling specialists to establish the robustness of the Applicant's air impact assessment. The output from the model has then been used to inform further assessment of health impacts.

The Air Quality Assessment has showed that impacts at relevant human receptors are predicted to be below limit values at the sensitive human receptor locations where the Air Quality Directive states that they must be applied.

## **5.2 Impact on Habitats sites, SSSIs, non-statutory conservation sites etc**

There is one SSSI within 2 km of the site:

- Caeau Nant Y Groes SSSI

As a result, an Appendix 4 form – CroW Act 2000: Natural Resources Wales application for permission – Formal Notice, has been completed in conjunction with this application.

Air quality modelling has been carried out with regards to the potential impact from the Aberdare Power Station. The modelling has shown that all ecological impacts are predicted to be below limit values at locations where the Air Quality Directive states that they must be applied.



### 5.3 European Sites

There are no designated European Natura 2000 sites located within the relevant screening distance (5.0 km) of the main site emission points to air.

#### Assessment of Likely Significant Effect:

N/A

#### Appropriate assessment:

N/A

#### HRA Overall conclusion:

N/A

### SSSI Assessment

Considering the conclusions of the appropriate assessment, it has been ascertained that the site will not adversely affect any of the flora, fauna or geological or physiological features which are of special interest.

## 6 Setting ELVs and other Permit conditions

We have decided that emission limits should be set for the parameters listed in the permit. Emissions Limit Values (ELVs) are in line with those set out in the MCP Directive, and Schedule 25B (Specified Generator regulations).

## 6.1 Monitoring

We have decided that monitoring should be carried out for the parameters listed in Schedule 3 of the permit using the methods and to the frequencies specified in those tables. These monitoring requirements have been imposed in order to demonstrate compliance with the emissions limits in the permit, as per the ELV and monitoring frequency requirements specified within the MCP Directive and EPR Schedule 25B Regulations.

For a combined Tranche B Specified Generator and existing Medium Combustion Plant, that is an engine fuelled on natural gas, the monitoring requirements are as follows:

<b>Pollutant</b>	<b>Type of Specified Generator</b>	<b>Fuel Type</b>	<b>Emission Limit Value (mg/Nm<sup>3</sup>)</b>	<b>Monitoring Required</b>
NO <sub>x</sub>	Spark Ignition Reciprocating Engine	Natural Gas	190*	Periodic – every 3 years

\*380 mg/Nm<sup>3</sup> for dual fuel engines in gas mode.

Emission limit values are defined at a temperature of 273,15 K, a pressure of 101,3 kPa and after correction for the water vapour content of the waste gases and at a standardised O<sub>2</sub> content of 15% for engines (and gas turbines).

For emissions to air, the methods for continuous and periodic monitoring are in accordance with the Environment Agency's Technical Guidance Note M5 for monitoring of stack gas emissions from medium combustion plants and specified generators.

Based on the information in the Application and the requirements set in the conditions of the permit we are satisfied that the monitoring techniques, personnel and equipment employed by the Operator will have either MCERTS certification or MCERTS accreditation as appropriate.

## 6.2 Other Permit Conditions

As a combined Specified Generator/Medium Combustion Plant, the facility must adhere to the following operating techniques for both MCP and SG.

As an existing Medium Combustion Plant (MCP) these are:

- (a) Each MCP must be operated in accordance with the manufacturer's instructions and records must be made and retained to demonstrate this.
- (b) The operator must keep periods of start-up and shut-down of each MCP as short as possible.
- (c) There must be no persistent emission of 'dark smoke' as defined in section 3(1) of the Clean Air Act 1993.

As a Specified Generator (SG), these are:

- (a) Each generator must be operated in accordance with the manufacturer's instructions and records must be made and retained to demonstrate this.
- (b) The operator must keep periods of start-up and shut down of the generators as short as possible

- (c) There must be no persistent emission of 'dark smoke' as defined in section 3(1) of the Clean Air Act 1993.
- (d) Where secondary abatement is required to ensure compliance with the NO<sub>x</sub> ELV it must be met within 10 minutes from when the generator commences operation or within 20 minutes when the generator was a Tranche A and is now a Tranche B generator.
- (e) The stack must be vertical and unimpeded by cowls or caps.

### 6.3 Reporting

We have specified the reporting requirements in Schedule 4 of the Permit to ensure data is reported to enable timely review by Natural Resources Wales to ensure compliance with permit conditions.

### 7 MCPD/SG Charges and Subsistence Fees

The type of application regarding MCPD and SG will have an associated charge. The MCPD/SG application type will also form the basis for ongoing subsistence fee's. More information on this can be found in our charging scheme on our website.