Air Quality Dust Management Plan (AQDMP)

12757 Aberthaw Power Station

Issue No:	Prepared By:	Authorised For Issue By:	Comments:	Issue Date:
[redacted]				

This plan is to be maintained and updated to reflect on-going changes to the management status and conditions of the project

Contents

1. Introduction

1.1 Context

This Air Quality Dust Management Plan (AQDMP) sets out the ways in which dust and air quality issues on the **Aberthaw Power Station** project will be effectively controlled and minimised.

This AQDMP looks to close out the requirement for details of the dust and air quality controls and should be read in conjunction with the site-specific Demolition Environmental Management Plan (DEMP).

The activities have the potential to cause dust nuisance and health implications if appropriate mitigation measures are not applied. The plan has been collated with the following guidance and supporting documents being incorporated.

- Guidance on monitoring in the vicinity of Demolition and construction sites, Version 1.1, IAQM, October 2018
- Assessment of dust from demolition and construction 2014, Version 1.1, IAQM, February 2014
- Site Environmental Permit (EPR/RP3133LD) and implemented as per document – Site Operations Manual.

No demolition or development shall commence until all necessary pre-commencement measures described in the AQDMP have been put in place and set out on site. The demolition and development shall thereafter be carried out and monitored in accordance with the details and measures approved in the AQDMP.

1.2 Erith Contractors Ltd

Erith Group's Environment Management System (EMS) sets out in detail how environment and sustainability is managed during our activities. The EMS is accredited to ISO14001:2015 and our processes are aligned with the standard's requirements. A copy of the policy is included in Appendix E.

Erith Contractors Limited are the Principal Contractor.

All parties working for Erith Contractors Limited on the project will be required to meet the plan requirements.

1.3 Project Details

Project Name:	**Aberthaw Power Station**
Project Number:	**12757**
Site Address:	**Aberthaw, Barry, CF62 4QT**
Client:	**CCR**
Principal Contractor:	**Erith Contractors Limited**

1.4 Project Summary

The site comprises buildings and other features associated with the Aberthaw B coal-fired power station. It was constructed in the late 1960s and opened in 1971.

1.5 Project Scope

The Scope of Works consists of the following:
The planned demolition works comprise the removal of hazardous materials (including asbestos), demolition, and site clearance the site including the buildings, associated infrastructure, and foundation slabs to facilitate the next stage in the development.

1.6 Project Personnel

Role	Name	Contact Details
[redacted]		

Support is provided by the Erith Environment and Sustainability Team.

1.7 Roles and Responsibilities

Role	Responsibilities
Site Manager	Ensure mitigation and monitoring requirements are laid out in the AQDMP
	Ensure staff are aware of the requirements of the AQDMP and the document is briefed out to all staff
	Undertake and record visual dust inspections of the site as required by the AQDMP

	Ensure all safe systems of work include dust mitigation measures
	Maintain a complaints log and action all complaints
	Act as the key point of contact for queries and complaints regarding air quality/emissions from site.
All site personnel	Carry out works in line with AQDMP
	Report any dust events or issues with the Site Manager

2. Site Information

2.1 Location

The site covers an area of land at Aberthaw on the south coast of Wales. The village of East Aberthaw is located immediately to the east of the site and the hamlet of West Aberthaw is just to the west. The town of Barry is approximately 5 miles to the east of the site, which lies within the administrative district of the Vale of Glamorgan.

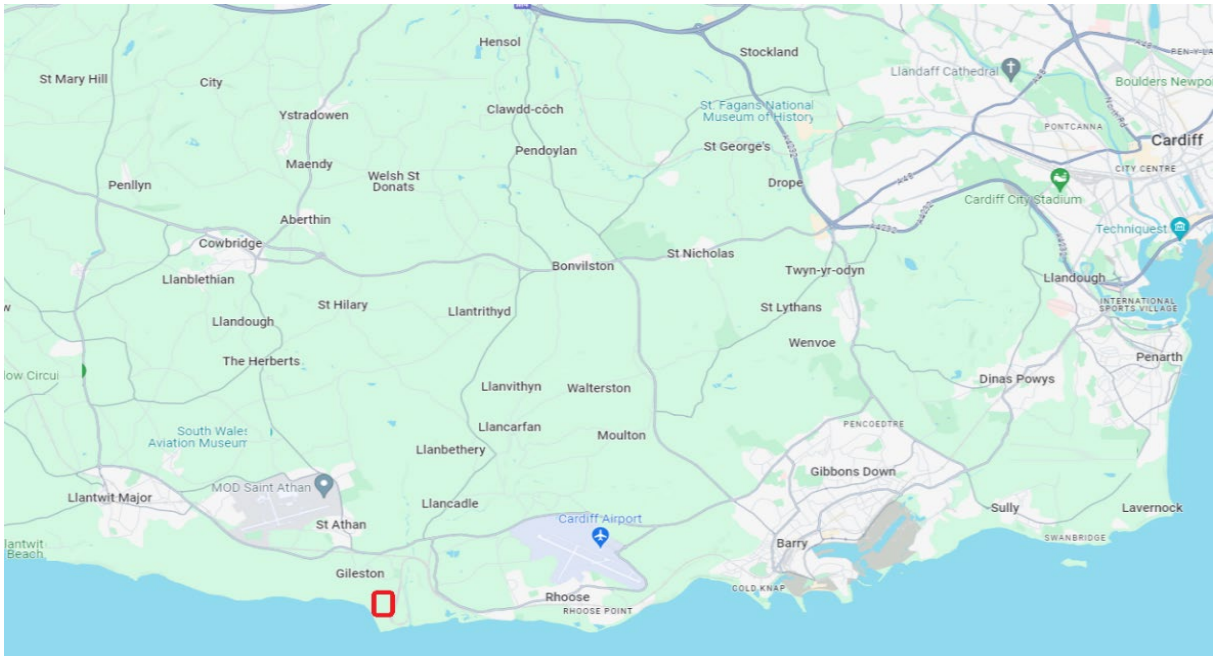

Fig 1: Locational map of area

Fig 2. Aerial view of site – on coast

2.1 Site Plan and Sensitive Receptors

Limpert Bay Guest House (D) adjacent to the west of the site, the properties at Gileston (A) and West Aberthaw (B) to the north, and the village of East Aberthaw (C) to the east.

2.2 Water Supply

Water will be supplied via an installed main supply to ensure use for dust suppression and welfare use.

2.3 Fuel Storage

Fuels will be stored in a double bunded container with 110% capacity or stored on a bund - plant nappies will be available during re-fuelling and topping up to prevent pollutants escaping into the surrounding area. All mobile plant will carry a spill kit. Fire points and spill kits will be located in the immediate vicinity of the fuel storage. Drainage plans will be reviewed to ensure that these items are not stored close to or near a potential pathway to become a pollutant.

2.4 COSHH items

These will be stored in a locked container and all items will be stored on bunds to ensure that they do not leak on to the surrounding area. Spill kit stations and fire stations will be placed in close proximity to ensure quick and efficient response in the event of a spill.

2.5 Spill Training

This will be trained out so that all staff members are aware of how to minimise the potential risk in the event of a spill taking place on a site. This training will take place at induction and monthly thereafter to ensure that everyone on site is competent on clearing and preventing a spill. The competency of this training will be tested in a site spill drill.

2.6 Site Equipment plan

Mobile Crushing will take place on the project. Use of excavators on site with various attachments; generator to be used to provide electricity to workface.

2.7 Hours of work & delivery times

Normal working hours will be Monday – Friday 07:00hrs – 19:00hrs and

Saturday 08:00hrs – 13:00hrs.

2.8 Relevant Legislation

The targets and limit values set within the 2008/50/EC directive were transported into UK law through the Air Quality Standards (Wales) Regulations 2010. These set out how the government has interpreted the EU directives. One of the main additions the regulatory framework for $PM_{2.5}$. The Air Quality Strategy 2007 Volume 1 outlines the National Air Quality Standard (AQS) concentrations and NAQOs that would be achieved.

Erith will take ownership of Site monitoring from CCR as per the NRW Environmental Permit EPR/RP/3133LD. This permit may be subject to change by NRW and will reviewed by Erith in order to comply, set within the new permit.

3. Dust and Emission Control Measures

3.1 Inventory and Programme of Dust and NO_x Generating Activities

The activities taking place on site that have the potential to generate dust and NOx are:

Demolition:

- Dust generated from demolition activities.
- Emissions from construction plant
- Emissions from vehicles associated with the construction of the Proposed Scheme, import of construction materials, accessing and leaving the site on the local road network.

Motofog/Dust Boss ® equipment will also be utilised to prevent dust emissions escaping site, when demolishing lower levels of the blocks.

For the upper floors, Erith will utilise the existing water supply onsite with hoses connected, these hoses will be run up the side of the building to the working areas on the upper floors. (Note: due to low water pressure, Erith have installed tanks on the upper floors which are connected to a pump to ensure the water pressure it sufficient at the higher levels). With the hoses, tanks, and pumps setup an operative will direct the water to the area of the building being demolished to dampen down the arisings, they will also dampen any stockpiled arisings. This procedure will be reviewed as works progress.

Plant movement: The movement of plant and vehicles into and out of the site can cause dust and deposit material from the site. To prevent this traffic marshals will check vehicles before they leave site. Wheel washing facilities, typically a powered jet wash, may be used to clean the wheels of vehicles before they leave site (this is normally dependent on the site surface, i.e., tarmac, or bare ground, and weather conditions generally) and surfaces will be swept back towards the site to ensure that no dust or mud leaves site with vehicle movements.

Exhaust fumes from Vehicles**:** The exhaust fumes from plant and vehicle movements may contribute to the project emissions. To minimise these, vehicle movements on site will be restricted to prevent any additional exhaust fumes along with the implementation of a Traffic Management Plan to prevent unnecessary movement of plant or vehicles. We already operate a 'no idling' policy whereby static vehicles turn off their engines.

Wind: To minimise any dust leaving the site boundary there will be minimal stockpiling on site where practicable, whilst any stockpiles of debris will be dampened down to minimise windborne emissions. Stockpiling of material should be minimal as haulage lorries will be in attendance regularly to remove all demolition

arisings from site. The project team are mindful that this is a commercial and business area and dust management will be a priority.

Activities with the potential to generate dust will be visually monitored throughout the day by the site Supervisor and Site Manager. The site team will dampen down with water during the works and post demolition.

Where dust is observed this will be managed with a review of the work methods and the implementation of dust suppression such as screening, covering over or dampening down. Emissions will be monitored and recorded at various positions along the boundary of the site to assess the potential impacts from our activities beyond the site boundary.

Where dust suppression is required, this will be implemented immediately. In dry weather the works will be dampened to ensure there is no dust emitted from site. Motofogs water misting plant will be utilised as required.

3.2 Mitigation Measures

See mitigation measures below:

	Mitigation measure	Implemented on site
	Site Management	
1	Damping down surfaces during dry weather	✓
2	Erection of appropriate hoarding and/or fencing to reduce dust dispersion and restrict public access.	✓
3	Appropriate handling and storage of materials, especially stockpiled materials.	✓
4	Materials processing areas will be located centrally within site, to maximise distance to sensitive receptors.	✓
5	Materials stockpiles likely to generate dust should be enclosed or securely sheeted, kept watered or stabilized as appropriate.	✓
6	Use of wheel wash, limiting of vehicle speeds to 5mph, avoidance of unnecessary idling of engines and routing of Site traffic as far from residential, educational, and commercial properties as possible.	✓
7	Fitting all equipment (for cutting, grinding, crushing) with dust control measures such as water sprays where possible.	✓
8	Damping down of dust-generating equipment and vehicles within the site and the provision of dust suppression in all areas of the site that are likely to generate dust.	✓
9	Plant to be serviced regularly.	✓
10	Plant should be well maintained and shut down in the intervening periods between work.	✓
11	All machinery should use Ultra Low Sulphur Diesel (ULSD) where possible.	✓
12	Ensuring that a road sweeper is available to clean mud and other debris from hard standing roads and footpaths.	✓

13	Explosive blasting will be avoided, appropriate manual or mechanical alternatives shall be used instead unless prior approval is granted.	✓
	Dust Management Plan (vehicle movements)	
14	Haul roads and associated vehicle waiting areas shall be regularly inspected and kept cleared of mud and materials which may give rise to emissions of dust.	✓
15	Plant crossings, site access and egress points will be regularly swept and dampened down.	✓
16	Unpaved roads and verges shall be maintained in a compact condition as appropriate and necessary.	✓
17	Static water sprinklers and/or bowsers will be provided to damp down haul and access roads as necessary.	✓
18	Road sweepers will be used to limit the dust and material on paved roads.	✓
19	General site traffic shall be restricted to watered or treated haul roads.	✓
20	Speed limits shall be established and enforced on site traffic routes (speed limits shall be reduced in the event of extreme dry conditions to further reduce the potential for the generation of dust).	✓
	Dust Management Plan (General site operations)	
24	Burning on site of any waste arising from any construction activities is prohibited.	✓
25	Equipment likely to generate excessive quantities of dust shall be enclosed, shielded or where appropriate fitted with dust extractors, filters, and scrubbers, which shall be fitted and maintained in accordance with the manufacturer's specifications.	✓
26	The number of material handling operations shall be kept to a practicable minimum.	✓
27	Drop heights of materials on to vehicles and stockpiles shall be kept to a practicable minimum.	✓
28	Where appropriate, wind breaks, nettings screens or semi-permeable fences shall be used to reduce dust emissions from working areas and/or screen sensitive locations (as identified by the Project/Site manager. Where necessary, water sprays shall be employed to control dust generated during construction of earthworks and during piling operations.	✓
29	Long term stockpiles (greater than six months) shall be planted or sealed as appropriate.	✓
	Operations	
32	Cutting, grinding, or sawing equipment will only be used where fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g., suitable local exhaust ventilation systems	✓
33	An adequate water supply on the site for effective dust/particulate matter suppression/mitigation will be ensured, using non-potable water where possible and appropriate. Handheld sprays will be used as the water can be directed to	✓

	where it is needed. In addition, high volume water suppression systems, manually controlled, can produce fine water droplets that effectively bring the dust particles to the ground	
34	Enclosed chutes, conveyors and covered skips will be used	✓
35	Drop heights from loading shovels, hoppers and other loading or handling equipment will be minimized, and fine water sprays will be used on such equipment wherever appropriate	✓
36	Equipment will be readily available on site to clean any dry spillages, and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods	✓
37	Fuel (diesel) will be stored safely in bunds on-site, and will be located within the site accommodation compound	✓
	Waste Management	
38	Waste will be reused and recycled where possible to reduce dust from waste materials	✓
39	Waste Materials will be removed from the site a minimum of three times per week	✓
40	Bonfires and burning of waste materials will be prohibited.	✓
	Measures Specific to Demolition	
41	Water suppression will be used during demolition operations. Handheld sprays will be used as the water can be directed to where it is needed. In addition, high volume water suppression systems, manually controlled, can produce fine water droplets that effectively bring the dust particles to the ground.	✓
42	No explosive blasting or mass demolition will be undertaken, manual and or mechanical alternatives methods will only be used	✓
43	Any biological debris will be bagged and removed or damped down before demolition	✓
	Measures Specific to Earthworks	
44	Manage stockpiles to avoid windblown dust, dampening down or if required covering of stockpiles to prevent dust migration	✓
	Measures Specific to Construction	
45	Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery	✓
46	For smaller supplies of fine powder materials ensure bags are sealed after use and stored appropriately to prevent dust	✓
47	Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place	✓
	Measures Specific to Trackout	
48	Water-assisted dust sweeper(s) will be used on the access and local roads, to remove any material tracked out of the site on a daily basis if required.	✓
49	Dry sweeping of large areas will be avoided	✓

50	HGV vehicles entering and leaving sites will be covered to prevent escape of materials during transport	✓
51	Vehicles leaving the site will be inspected and cleaned (with a powered wheel wash/spray) to ensure that any mud or other dust causing materials are removed from the vehicles prior to exit.	✓
52	A maximum-speed-limit of 5mph on surfaced and un-surfaced haul routes and work areas within the site will be implemented and signposted.	✓

4. Dust and Air Quality (PM_{10}) Monitoring Plan

4.1 Monitoring and Reporting Requirements

Monitoring will be undertaken to ensure that dust and fine particulate emissions are adequately controlled and kept within acceptable limits. Draft monitoring proposals are outlined below.

- Daily on-site and off-site inspections should be undertaken, where receptors (including roads) are nearby to monitor dust. The inspections results should be recorded. This should include regular dust soiling checks of surfaces such as local roads, with cleaning to be provided if necessary.
- The frequency of site inspections should be increased when activities with a high potential to produce dust are being carried out and during prolonged dry and windy conditions.

4.2 Equipment

The monitoring equipment will include:

Noise and Vibration: Convergence Instruments NSRTmk3 and VSEWmk2

Dust: MCERTS certified South Coast Science Praxis/ Urban.

Erith Environmental Team will also carry out supplement monitoring with handheld monitors to get on the-spot readings at selected points, such as close to sensitive receptors.

4.3 Procedures for collecting interpreting and reporting data.

The Erith Site Manager and Project Team will also have access to the data in real time and implement the following:

i. Data summaries will include mean concentrations, alert level exceedances and data capture rates and explanations for any exceedances and data loss for each month assuming continuous operation. Any photographic records taken will be kept, recorded, and maintained alongside monitoring records. All records will be kept on site for inspection by any interested parties.

ii. The report will also highlight any exceedance of the site action level and actions taken in response to the exceedance communicated by the site staff. Exceedances of the 24-hour PM_{10} standard (150 µg/m^3) will also be recorded.

iii. The SPG recommends a trigger level of 190 µg/m^3 is set as a 1 hour mean for concentrations of PM_{10} close to construction sites, and where the site threshold for PM_{10} is being significantly breached developers should stop work immediately and ensure best practice measures are in place before restarting. When the trigger level is exceeded, alerts will be sent to the Site Manager. An internal amber PM_{10} alert will be set at 150 ug/m^3 (15-minute mean). Action in the event an alert occurs is as follows:

Amber alert – Site Manager or other appropriate person to review activities to identify any potential dust or particulate sources and if cause of alert relates to a site activity, mitigation will be put in place immediately to reduce impacts.

Red alert – site manager or other appropriate person to review activities to identify any potential dust or particulate sources:

- if cause of alert relates to a site activity, mitigation will be put in place immediately to reduce impacts.
- if the mitigation is identified as insufficient then activities causing the elevated dust/ particulate levels will cease.

iv. Any identified causes will be rectified. Actions will be recorded in the Trigger Exceedance, Incident and Complaint Form (TIC Form) (see Appendix C) and will detail reasons for the exceedance and any steps taken to prevent reoccurrence. In the event of two consecutive red alert exceedances/visual identification of dust incident; Local Council will be issued the TIC Form by email within 24hours or within the next working day if it occurs at a weekend or bank holiday.

4.4 Proposed Site Action Levels (SALs)

The proposed site action level for PM_{10} is 190 µg/m^3 averaged over a 1 hour mean period at all monitoring locations. Should the site action level be exceeded, automatic alerts will be sent via email and/or text message to nominated individuals. The alerts will include the following information:

- the location of the exceedance
- the time of the exceedance
- the recorded PM_{10} concentration

The Site Manager will investigate the exceedance, undertaking a visual inspection of construction activities to ensure mitigation measures are being employed. The Site Manager will then take corrective measures if required according to the protocol detailed below.

4.5 Procedures for investigating and reporting site action limit breaches.

The following actions will be carried out in the event of an exceedance of the agreed thresholds, or obvious high levels of observed dust.

1. On-site activities will be immediately inspected to identify and record likely sources.
2. If on-site sources are identified as triggering the agreed thresholds the relevant activities will be halted until remedial measures can be implemented (e.g., wetting down, road sweeping, sheeting up).
3. Once mitigation measures are implemented, site activities will continue whilst being monitored to ensure that the mitigation has been effective. The Operations Director and Project Manager will be notified of the exceedance as soon as practical, along with details of any corrective and preventative actions.

4.6 Complaints and incident procedures

It is the responsibility of the Site Manager to record, respond to and follow up all complaints regarding dust. Site Managers are responsible for ensuring that suitably qualified personnel are available to respond to complaints at all times.

Actions to be taken by the Site Manager:

- Note the time, date, name, and contact details of complainant.
- Liaise with client regarding complaint and liaise with site team.
- Assess area of complaint and carry out a visual inspection.
- Report back to the client and site team.
- Respond back to complainant.
- If necessary, update any relevant mitigation measures to prevent any recurrence of problems.
- Ensure that the Project Director, SHEQ Lead are notified that a complaint has been received, what the findings of the investigation were, and any remedial measures taken.
- Inform workers on site of any complaints, the findings of any investigations and what remedial measures should be taken.

4.7 Meteorology

The risk of dust impacts is highly dependent on meteorological conditions. High wind speeds increase the potential for dust to be raised and blown from the site while dry periods reduce the particle cohesion and therefore increase the potential for dust generation. High risk weather conditions include:

- Wind speeds greater than 5.0 m/s.
- Prolonged periods of dry weather.

The wind speed and direction will be measured on-site and monitored by the Site Manager to alert staff to potential adverse conditions that may trigger the additional mitigation measures outlined in Section 4. Meteorological conditions at the time of any significant dust emissions will be recorded in the TIC Form (See Appendix C, Figure 8).

4.8 Visual Assessment

A daily visual inspection of the site will be carried out by the Site Manager, or an appropriately trained operator. The inspection will consist of a walk around the perimeter of site and making observations about dust emissions and dust soiling, particularly focusing of locations upwind of on-site activities. Observations will include regular dust soiling checks of surfaces such as street furniture, cars, and windowsills within 20m of the site boundary. Inspection results will be recorded in a Daily Inspection Checklist and any specific notes relating to dust soiling or dust generating activities will be recorded using Daily Inspection checklist.

If significant dust is identified beyond the site boundary, a TIC Form should be completed and immediate investigation (e.g., though cross checking of site activities and monitoring data)/remedial action should be undertaken. The Site Manager will review the TIC Forms regularly to ensure that any necessary actions have been

implemented, and to identify problem areas where additional mitigation against further dust emissions may be necessary.

The frequency of visual inspections will be increased to four times per day when activities with a high potential to produce dust are being carried out on site such as during demolition and earthworks. The frequency of inspections should also be increased to four times per day during periods of adverse weather, i.e., during periods of dry weather with high wind speeds.

Should any complaints be received relating to dust soiling, the TIC Form will be completed. In addition, persistent complaints may also be investigated via the implementation of a period of dust soiling monitoring. The results of these inspections will be recorded in the site log and issued to the Local Authority within 24 hours or within the next working day if it occurs at a weekend or bank holiday.

4.9 Dust Soiling Monitoring

If complaints are received regarding dust soiling close to the development site, then a period of dust soiling monitoring may be undertaken to determine whether the dust affecting the complainants is likely to be generated by the site, and whether the level of dust soiling experienced has the potential to be considered a nuisance.

Dust soiling monitoring would be undertaken for a minimum period of 4-6 weeks but may be continued for longer periods if high levels of dust soiling are measured.

Dust soiling monitoring would involve the deployment of monitors such as sticky pad or glass slide dust gauges at several locations including at affected receptors and at the boundary of the site closest to these properties, as well as at background locations upwind of dust generating activities.

If deemed required, any dust soiling monitoring regime will be discussed and agreed with the client in advance of commencing the additional monitoring. The results of any periods of dust soiling monitoring will be summarised in a monthly report, which will be issued to the client by e-mail. Where any high levels of dust soiling are identified which may be caused by demolition activities at the site, additional dust mitigation measures will be implemented. Further monitoring may then be undertaken to demonstrate the effectiveness of such mitigation measures.

Appendix A: AQDMP Training Register

Training Register			
AQDMP Air Quality & Dust Management Plan **Aberthaw Power Station**			
Record / Version No:		**Instructor:**	
Attendees:			
	Name	**Signature** **I have read and understood this method statement and will not deviate from it**	**Date**
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
Operative Feedback and Suggestions **If you have any comments or ideas on better methods of working, then write them here and discuss them with the instructor**			