Cyfoeth Naturiol Cymru
Natural Resources Wales

Natural Resources Wales permitting decisions

Castle Cement Limited (Padeswood Cement Works)

Decision Document

Contents

Minor Technical Variation

The variation number is: EPR/BL1096IB/V020

The application number is: PAN-022273

The operator is: Castle Cement Limited

The Installation is located at: Padeswood Cement Works, Padeswood, Mold, Flintshire, CH7 4HB

We have decided to issue the minor technical variation for Padeswood Cement Works operated by Castle Cement 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 operator's proposal.

Overview of Proposal

In response to Actions required by a Natural Resources Wales Compliance Assessment Report (CAR) ref. CAR_NRW0040097, dated 14/06/2022 the Operator has applied for a permit variation to include an emission point to surface water. This emission point is located to the south east of the installation, and consists of surface water run-off from the area of the coal shed and clinker dome. This surface water run-off, which then discharges into the horseshoe ditch and subsequently to the Black Brook is considered to be uncontaminated. The emission point will be

referenced as ‘W3’ in Table S3.3, Point Source emission to water and Schedule 7 of the permit. The operator has not proposed any monitoring requirements for this surface water run off. We agree with this proposal.

The operator has also applied to replace and upgrade the dust filter and dust monitoring equipment located at the clinker entry point into the Clinker Dome. The existing dust filter in place is a horizontal bag dust filter with a fan capacity >10,000m^3. It is monitored continuously for dust using a triboelectric filter monitor probe. This non-kiln point source emission to air is referenced as A11 in Table S3.2 and Schedule 7 of the permit. The Operator proposes to replace the existing bag filter with a ‘DCE Envirojet Reverse Jet Bag Filter and associated equipment. The dust from the new filter will be continuously monitored using a SICK Dusthunter SP100 dust probe with forward scattered light measurement. The upgrade will also allow for periodic extractive monitoring of particulate matter at the emission point. The operator has therefore proposed revised monitoring requirements for this existing point source emission to air. The proposal is considered to be in line with Best Available Techniques (BAT) and will improve the effectiveness of dust management at the Clinker Dome and the clinker transport process. BAT and the additional monitoring requirements for particulate matter are considered in more detail on page 7 in the Environmental Risk Assessment section.

Key issues of the decision

Receipt of application

Confidential information

No claim for commercial or industrial confidentiality has been made.

Consultation

As this application is for a minor technical variation, no external consultation was required.

Request for further information

The application was received on the 06/06/23. In order for us to consider the application duly made, we needed more information from the operator. We requested further information on 17/07/23 relating to the noise impact of the replacement filter and associated equipment and also clarification on Best Available Techniques (BAT)

for the proposed replacement filter. The deadline for this information was 31/07/23. However the operator requested an extension to 03/08/23 and the information was received on 03/08/23. It was accepted as duly made on 03/08/23. 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 facility

Padeswood Cement Works manufactures cement from limestone, pulverised fuel ash, shale and sand and gypsum.

The regulated facility is an installation which comprises the following activities listed in Part 2 of Schedule 1 to the Environmental Permitting Regulations and the following directly associated activities:

- **Section 3.1 Part A(1) (a):** *Producing cement clinker in rotary kilns with a production capacity exceeding 500 tonnes per day or in other kilns with a production capacity exceeding 50 tonnes per day.*

Associated Recovery codes:

R01 – Use principally as a fuel or other means to generate energy

R05 – Recycling / Reclamation of other inorganic materials

R11 – Use of waste obtained from any other operations numbered R01 – R10

R13 – Storage of wastes pending recovery operations R01 – R12 (excluding temporary storage, pending collection, on the site where it is produced).

- Section 3.1 Part A(2) (a): *Grinding cement clinker*
- **Section 3.1 Part B (a):** Storing, loading or unloading cement or cement clinker in bulk prior to further transportation in bulk.
- **Section 3.1 Part B (b):** Blending cement in bulk or using cement in bulk other than at a construction site, including the bagging of cement and cement mixtures, the batching of ready-mixed concrete and the manufacture of concrete blocks and other cement products.

Directly associated activities include:

- Waste Storage and handling:
    1. R13 - Storage of wastes pending recovery operations R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced).
    2. D15 - Storage pending any of the operations numbered D1 to D14 (excluding temporary storage, pending collection, on the site where the waste is produced)
- 1.925 MW Hot Gas Generator providing auxiliary heat to Mill 5.
- Rail loading facilities.

There is no change to the listed activities or directly associated activities due to this variation. The proposal does not include any additional point source emissions to air.

Environmental Management System

The Operator has an externally accredited EMS certified to ISO14001 standard. The operator has confirmed that following the introduction of the new dust filter and monitoring probe minor updates to the Management System that controls operations at the site may need to be carried out. This is to acknowledge the new equipment and any specific staff training requirements. However, most procedures overall will remain the same within the Management System. There is no known reason to consider that the operator will not have the management systems to enable it to comply with the permit conditions following this variation. The decision was taken in accordance with RGN 5 on Operator Competence.

Legislation

The variation will be issued under Regulation 20 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:

- an installation as described by the IED;
- 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.

NRW is satisfied that our 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. All applicable European directives have been considered in the determination of the application.

The site

There are no proposed changes to the site boundary. The site plan in Schedule 7 of the permit has been updated as part of this variation to show the new point source emission to water - W3.

National Site Network, Sites of Special Scientific Interest (SSSI), and Non Statutory Designated Sites.

This variation makes no significant changes to the emissions from the site and therefore this assessment was not needed.

Environmental Risk Assessment

Air

There are no additional point source emissions to air. The operator has stated that an environmental risk assessment was not considered necessary for this application. The proposal is to upgrade the existing filter and dust monitoring equipment and it is considered that the new Reverse Jet Bag Filter proposed for the Clinker Dome entry point will be more efficient at dust control than the existing filter. We agree with the operator that an environmental risk assessment is not required. The existing emission point to air is documented as point source emission A11 in Table 3.2 of the permit and particulate matter is continuously monitored indicatively. Following installation of the upgraded filter, particulate matter will be monitored continuously using a 'SICK Dusthunter SP100' dust probe to demonstrate process stability. In addition, periodic monitoring will be carried out in accordance with the relevant monitoring frequency and standards. The emission limit for particulate matter at this emission point remains at 10mg/Nm^3. This proposal complies with the Best Available Techniques (BAT) Reference Document for the Production of Cement, Lime and Magnesium Oxide for dust.

Water

An additional point source emission to water is proposed as part of this permit variation. This surface water run off is considered to be uncontaminated and the operator has stated that an environmental risk assessment is therefore not necessary. We agree with this assessment. The new surface water discharge point is referenced as W3 in Table S3.3 and is included in Schedule 7 of the permit.

Odour

There are no additional point source emissions of odour from the Installation as a result of the proposed changes.

Noise

The operator has stated that it is not anticipated that there will be any additional noise impact from the replacement filter and associated equipment at the Clinker Dome entry point, and it is unlikely that there will be any additional noise impact beyond the site boundary. As part of the duly making process we asked the operator to provide evidence of this. The technical specification for the proposed filter showing its typical noise output levels has been provided. We requested that the operator provide the technical specification of the existing dust filter showing its typical noise output levels for comparison. The operator stated that a technical specification for the existing filter was unavailable and so a comparison could not be made. Therefore the operator carried out noise monitoring of the existing dust filter. Noise levels were measured at roughly ground level, with a measurement of 71dB(A) 3 metres away from the filter. It was noted that the dominant noise source at the existing filter to be from the motor/fan assembly and impulse noise from the filter pneumatic exhaust. The noise level provided in the technical specification for the proposed filter is 80dB(A) at 3m from the stack outlet, 12m high off the ground. Following correction for distance, this was recalculated as approximately 68dB(A) at ground level. The calculations indicated that the overall noise levels at the existing dust filter is comparable to the predicted noise output levels for the new dust filter. However the specification for the proposed filter does not take into account the motor/fan assembly at ground level, as no information is available from the supplier. Therefore, we consider it necessary to impose an improvement condition in the varied permit which requires the operator to reassess noise impacts, in line with the BS 4142

guidance once the new filter and associated equipment is commissioned. Should the new filter be shown to have adverse impacts on noise levels, then the operator will be required to submit a Noise Management Plan detailing additional noise controls (see Annex 1 for more information).

Fugitive Emissions - Dust

The upgrade of the existing dust filter at the Clinker Dome will improve dust management at the Clinker Dome and is considered to represent the Best Available Techniques (BAT) for the production of cement. Particulate Matter will be continuously measured at emission point A11 and alarms will sound to alert of any issues. Based upon the information in the application we are satisfied that the appropriate measures will be in place to prevent or where not practicable to minimise the effects of fugitive emissions.

Operating techniques

The operator has reviewed the upgrade of the dust filter and associated monitoring equipment against the Best Available Techniques (BAT) Conclusions (BATc) outlined in 'Best Available Techniques Reference Document for the Production of Cement, Lime and Magnesium Oxide'. Emission point A11 is already a permitted emission point to air. The proposed techniques are in line with the relevant Cement, Lime and Magnesium BATc, which we consider relevant for this proposal and we consider them to represent appropriate techniques for the facility.

The permit conditions

Monitoring and Emission Limits

We have decided that monitoring for particulate matter should be carried out in accordance with Schedule 3 of the permit, using the methods detailed and to the frequencies specified in those tables. Emission point A11 in Table S3.2 - non-kiln point source emissions to air has been updated to reflect the addition of periodic monitoring. Table S3.5 - process monitoring requirements has been updated to include the addition of emission point A11 with regards to the continuous monitoring of filter performance. The emission limit for particulate matter remains at 10mg/Nm^3

Table S3.3 Point source emission to water (other than sewer) has been updated to include emission point W3.

Reporting

We have decided that reporting should be carried out in accordance with Schedule 4. Tables S4.1 - Reporting and S4.3 - Reporting Forms, have been updated to include the requirements for particulate matter. Reporting form ‘air 17’ will be used to report the periodic monitoring of particulate matter at emission point A11. For completeness, and as part of this variation emission point A15 has been added to Table S4.1 to reflect the 6 monthly monitoring requirement for particulate matter.

Improvement Conditions

Based on the information on the application, we consider that we need to impose improvement conditions. Please see ANNEX I below for more information.

OPRA

The OPRA score at permit issue is 116. There is no change to the OPRA score due to the minor technical variation.

ANNEX I: Improvement Conditions

Table S1.3 Improvement programme requirements

Reference	Requirement	Due date
IC10a	Following successful commissioning and establishment of routine steady operation of filter at emission point A11 the Operator shall undertake a noise impact assessment following BS4142:2014 and guidance set out in Noise and Vibration Management: Environmental Permits. The assessment should include an objective assessment of narrow band (FFT) measurements to identify any tonal elements from on-site sources and off-site at sensitive receptors. The assessment should include consideration of the Welsh Government’s Noise and soundscape action plan 2018-2023. Upon completion of the work, a written report shall be submitted to Natural Resources Wales for approval.	Within 9 months of commissioning the new filter or as otherwise agreed by Natural Resources Wales
IC10b	Following completion of IC10a, should the written report indicate it is required, a Noise Management Plan shall be submitted to Natural Resources Wales detailing any required noise controls. This shall be completed in line with guidance set out in Noise and Vibration Management: Environmental Permits.	Within 3 months of completion of IC10a (if applicable) or as otherwise agreed by Natural Resources Wales