

Natural Resources Wales Permitting Decisions

Vale Europe Limited (Clydach Nickel Refinery)

Decision Document

Application for a Normal Variation

The application number is: PAN-023615

The permit variation number is: EPR/BL4567IZ/V010

The operator is: Vale Europe Limited

The Installation is located at: Clydach Nickel Refinery Clydach Swansea SA6 5QR

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 proposals.

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1. Executive summary

1.1. Application summary

This variation is to install a hydrogen vent on the Process Gas Plant to allow for the discharge of hydrogen. The use of the vent will be infrequent and limited to only venting when unexpected Kiln Plant events occur, and the hydrogen holder capacity has been maximised. The vent will be located 17m above ground level and is designed to avoid hydrogen venting from the top of the hydrogen holders. The operator has confirmed that the venting of hydrogen already occurs at the installation and that the new location for the hydrogen vent is at a safer location. The emission point for this activity is 83.

1.2. Our decision

We have decided to issue the variation for Clydach Nickel Refinery operated by Vale Europe 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.

2. Receipt of the application

The application was received on 23/10/2023. In order for us to be able to consider the application duly made, we needed more information. We requested the following:

- Confirmation on the registered office address
- A summary of changes to the management system and accident management plan.
- An updated site plan showing Emission Point 83
- Confirmation that the release of hydrogen is a directly associated activity
- Information on Best Available Techniques (BAT)

A letter requesting this information was sent to the operator on 02/02/2024. Upon receipt of this information, on 15/02/2024 and 04/03/2024, we were able to consider the application duly made. 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. We also made an informal request for further information and received a response to this, which we also deemed to be satisfactory, on 15/05/2024. This was in relation to the correct location of emission point 83 on the site plan.

3. Confidential information

The operator made no claim for commercial confidentiality, and we have not received information in relation to the application that appears to be confidential in relation to any party.

4. Legislation

The variation will be issued, under Regulation 20 of the Environmental Permitting Regulations (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.
- Medium Combustion Plant Directive

We address the legal requirements directly where relevant in the body of this document. NRW is satisfied that the decision on this application 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 issuing the variation a high level of protection will be delivered for the environment and human health through the operation of the Installation 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.

As the EPR regulator in Wales, NRW are required to determine any duly made permit application. This means that we must decide either to grant, or to refuse the variation

based upon an objective assessment of the proposals against the detailed legal requirements of EPR. Our public participation statement¹ gives more information on what can, and cannot, be taken into account when making our permitting decision.

The application, and this decision document, only considers the permitting of the facility under EPR as described throughout the document. We only assess the installation and its impacts and cannot take into consideration indirect impacts which are not as a direct result of activity within the installation boundary.

Any proposed development and wider associated activities will be required to be compliant with all relevant and applicable law, for example, environmental law, health and safety law, planning law. This other legislation acts largely independently of EPR (although they may be inter-related). Such other matters are beyond both the scope of this document, and of our regulatory remit and expertise and are not relevant to our EPR permitting decision. Ensuring compliance with all other regulation and obtaining any required consents (such as planning permission) is the responsibility of those undertaking the development and is regulated by the relevant appropriate authority for each.

5. Consultation

There was no requirement to carry out a consultation as part of this normal variation. The decision was taken in accordance with the Environment Permitting Regulations (EPR), our Public Participation Statement¹ and our Regulatory Guidance.

¹ [Natural Resources Wales / Public participation: how you can take part in our permit and licence consultations](#)

6. The Installation

6.1. The permitted activities

The regulated facility is currently an installation which comprises the following activities listed in Part 2 of Schedule 1 and Schedule 25A of the Environmental Permitting Regulations (EPR):

- Section 2.2 A(1)(a): Producing nickel pellets and powder by the nickel carbonyl process.
- Section 4.2 A(1)(a)(v): Producing nickel carbonyl gas for directly associated processes
- Section 4.2 A(1)(a)(i): Producing of gasses including hydrogen and oxides of carbon
- Schedule 25A – Medium Combustion Plant as detailed in Schedule 8: 2x 4.45 MWth input boilers fuelled on natural gas comprising 1x 8.90 MWth input new Medium Combustion Plant

The installation also comprise “directly associated activities”, which includes:

- Gaseous effluent plant: Burning and filtering waste gases
- Water discharges to foul sewers: Discharge of ammonia from the installation
- Main effluent plant: Discharge of process water
- Site drainage from the installation: From interceptors to point of entry to controlled waters

Together, these listed installation activities and directly associated activities comprise the Installation.

This variation confirms that the venting of hydrogen is a directly associated activity. Table S1.1 in Schedule 1 of the permit has been updated and the activity reference for this directly associated activity is A11.

6.2. Changes to the installation

There are no changes to the installation other than the location of where the hydrogen is vented on the Process Gas Plant. As confirmed by the operator and 6.1 above the venting of hydrogen is a directly associated activity and it has been given an activity reference of A11 in Table S1.1 in Schedule 1.

7. Operation of the installation

7.1. Operator competence

The operator is the sole operator of the Installation. We are satisfied that the operator is the person who will have control over the operation of the Installation when the variation is issued; and that they will be able to operate the Installation so as to comply with the conditions included in the permit. The decision was taken in accordance with EPR RGN 1 Understanding the meaning of operator².

Relevant Convictions

The operator has declared they have no relevant convictions. NRW's COLINS Database has been checked to confirm there are no relevant convictions. No relevant convictions were found.

Financial Provision

The operator has declared they have no current or past bankruptcy or insolvency proceeding against them.

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.

² [RGN 1 Understanding the meaning of 'operator' \(naturalresources.wales\)](#)

7.2. Environmental Management System

The Operator has stated in the application that following the variation it will have in place an Environmental Management System (EMS) that will meet the requirements for an EMS in our guidance "*How to comply with your environmental permit guidance*". The operator has provided its Management of Facility Change (MOFC) document as additional evidence. The operator holds an externally accredited EMS certified to ISO14001 standard.

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

Accident management

The operator has confirmed that the existing accident management plan includes hydrogen as a main substance and that events have been identified for Major Accident Hazard Scenario Development. The operator has provided a hazard and operability study (HAZOP) Record Sheet and has confirmed that site emergency response plans are in place. The operator has also provided its 'Major Accident Prevention Policy' which confirms that it is committed to achieving high standards of safety and environmental performance and will ensure that all necessary resources are available to achieve these goals. We are satisfied that appropriate controls are in place to help reduce the occurrence and impact of any accidents that occur.

The operator has confirmed that DSEAR controlled areas are in place to avoid sources of ignition within the operational boundary of the gas plant. Site Emergency response plans are in-place.

In order to ensure that the management system proposed by the operator sufficiently manages the residual risk of accidents, permit condition 1.1.1a requires the implementation of a written management system which addresses the pollution risks associated with, amongst other things, accidents.

7.3. Operating techniques

Installation activities and assessment of Best Available Techniques

The operator has confirmed that for Activity A5, producing of gases including hydrogen and oxides of carbon, that the Best Available Techniques (BAT) conclusions for the Non-Ferrous Metals Industries which apply for the general operation are not applicable. The operator has confirmed that the reference document which best fits this activity is European Industrial Gases Association (EIGA) – Best Available Techniques for Hydrogen Production by Steam Methane Reforming Doc 155/21. The operator has confirmed that the proposed variation will not change the existing operation of the plant which aligns with the EIGA – BAT Doc 155/21. We agree with their assessment.

8. The site

8.1. Site Plan

The operator has provided an updated plan which we consider is satisfactory, showing the extent of the site of the facility and the new emission point for hydrogen which is referenced as 83. There are no proposed changes to the site boundary. The plan will be included in Schedule 7 of the permit and the operator will be required to carry on the permitted activities within the site boundary.

9. Environmental Risk Assessment

Regulated activities can present different types of risk to the environment, these include odour, noise and vibration; accidents, fugitive emissions to air and water; as well as point source releases to air, water, sewer and discharges to ground or groundwater, global warming potential and generation of waste. All these factors have been considered during our determination and the relevant risks from this proposal are discussed in this and other sections of this document.

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

In line with our guidance, the operator has provided an environmental risk assessment with the application which identifies the sources of key risks from the variation, possible pathways and receptors. This risk assessment and further assessments provided by the operator and/or completed by NRW will be discussed in further detail below.

9.1. Assessment of impact on air quality

The operator has assessed the Installation's potential emissions to air against the relevant air quality standards and has confirmed that there are no environmental standards for air emissions for hydrogen. Hydrogen has not been identified as a pollutant requiring screening assessment and therefore an assessment of impact on air quality has not been carried out.

Emission limits

There are no emission limit values (ELV's) set for hydrogen based on BAT. Therefore no emission limits have been set in the permit.

9.2. Assessment of odour impact

There are no additional point source emissions of odour from the Installation as a result of the proposed changes. The operator has confirmed that hydrogen is an odourless gas and therefore an odour assessment is not required.

9.3. Noise and vibration assessment

The venting of hydrogen already occurs at the Installation at a high level. The operator has confirmed that venting of hydrogen from the proposed new vent will continue to occur at a high level, infrequently and at low pressure. The operator has stated that the risk of noise from the venting of hydrogen from the proposed new vent to be low (insignificant). We agree with this assessment. The operator has confirmed that there will be no change in vibration levels. We are satisfied that vibration is unlikely to be an issue at the installation following this variation.

Condition 3.4.1 of the permit requires noise from the activities to be below that which could cause pollution outside the site. We are satisfied that this will be sufficiently

protective in conjunction with the measures described by the operator for minimising noise at the installation.

10. Impact on National Site Network Sites, SSSIs and non-statutory sites

This variation makes no changes to the emissions from the site. The operator has confirmed that hydrogen has not been identified as a pollutant requiring a screening assessment as there are no screening levels set for hydrogen. Therefore, this assessment was not required.

11. The Permit Conditions

11.1. Incorporating the variation

We have specified that the operator must operate the permit in accordance with descriptions in the application. These descriptions have been specified in the Operating Techniques table in the permit, and Condition 2.3 has been updated.

There will be no limits or monitoring requirements associated with the hydrogen vent. This vent has been added as an emission point in the permit in Table S3.1 of Schedule 3 and has been given a reference of A83.

12. OPRA

The OPRA score has not been changed as a result of this variation and remains as 225. This will form the basis for ongoing subsistence fee's.