Cyfoeth Naturiol Cymru
Natural Resources Wales

Natural Resources Wales permitting decisions

Real Alloy UK Limited

Non-ferrous metals sector BAT review

Decision Document

Contents

Variation and consolidation of a bespoke permit

We have decided to issue a Natural Resources Wales initiated variation for Waunarlwydd Works operated by Real Alloy UK Limited

The variation number is EPR/EP3935UC/V005.

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 is a decision document, which accompanies a variation notice being issued following a review of the permit.

It explains:

- **how** we have carried out our statutory review of the operator's permit;
- **why** we have decided to vary the permit as a result of that review; and
- **why** we have included the specific conditions in the revised permit through the variation notice we are issuing.

It is our record of our decision-making process, to show how we have taken into account all relevant factors in reaching our position. It explains how we have reviewed and considered the techniques used by the operator in the operation and control of the plant and activities of the installation. This review has been undertaken with reference to the decision made by the European Commission establishing best available techniques (BAT) conclusions ('BAT Conclusions') for the non-ferrous metals industries, which were published as a Commission Implementing Decision (EU) 2016/1032) in the Official Journal of the EU on the 30th June 2016. It is our record of our decision-making process and shows how we have taken into account all relevant factors in reaching our position. It also provides a justification for the inclusion of any specific conditions in the permit that are in addition to those included in our generic permit template.

The consolidated variation notice takes into account and brings together in a single document all previous variations that relate to the original permit. It also modernises the entire permit to reflect the conditions contained in our current permit template. The introduction of the new permit format makes the permit consistent with other permits issued to installations in this sector. Although the wording of some conditions has changed and others have disappeared because of the new regulatory approach, it does not reduce the level of environmental protection achieved by the permit in any way. In this document we address only our determination of substantive issues relating to the new BAT Conclusions. This variation is considered to be a normal variation because along with the administrative changes i.e. consolidating previous variations and moving to the new template, some detailed technical evaluation is required. This is a more complex variation than the norm, because it is doing three different things at the same time:

- **First**, it gives effect to our decisions following the statutory review of the existing permit, following the implementation of the IED and the publication of BAT Conclusions covering the non-ferrous metal industries. That is what this variation is principally about.
- **Second**, it takes the opportunity to bring earlier variations into an up-to-date, consolidated permit. These changes have already taken place and we are not re-explaining them, but the consolidated permit should be easier to understand and use.
- **Third**, it modernises the entire permit to reflect our current template. The template reflects our modern regulatory permitting philosophy and was introduced because of a change in the governing legislation. This took place when the Pollution Prevention and Control (England and Wales) Regulations 2000 were replaced in 2008 by a new statutory regime under the Environmental Permitting Regulations (EPR) 2010 (as amended in 2013) to effectively introduce the IED. The Environmental Permitting (England and Wales) Regulations 2016 were made on 11th December 2016 and consolidated EPR 2010 and its subsequent amendments.

The introduction of new template conditions makes the permit consistent with our current general approach and philosophy. Although the wording of some conditions has changed, while others have disappeared because of the new regulatory approach, it does not affect the level of environmental protection achieved by the permit in any way. We therefore explain only the statutory review in this document. As the variation will not have any negative effects on the environment it is not a substantial variation and so does not require external consultation. A fee for a normal variation based on the operator's OPRA score has been invoiced to the operator.

Structure of this document

- Summary of our decision
- The legal framework
- How we took our decision
- Key issues/Regulation 60 response
- Changes we have made
- Conclusion
- Annex 1 – Decision Checklist regarding relevant BAT Conclusions

1 Our decision

We have issued a variation, which will allow the operator to operate the installation, subject to the conditions in the varied permit.

The variation does three things:

- it consolidates the original permit to reflect changes made through earlier variations;
- it brings the permit into line with our modern regulatory template; and
- it varies the permit where appropriate to reflect the outcome of our statutory review and incorporate Best Available Techniques (BAT) and associated Emission Limit Values (ELV's).

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

The original permit, issued on the 05 September 2003, ensured that the installation, employed Best Available Techniques (BAT) and ensured a high level of protection for human health and the environment. We have altered the permit as a result of the statutory review, and we are confident that the new requirements will deliver a superior level of protection to that which was previously achieved.

2 The legal framework

The consolidated variation notice will be issued under Regulation 20 of the Environmental Permitting Regulations 2016. 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 other relevant legislation which also have to be addressed.

We consider that, in issuing the consolidated variation notice, it will ensure that the operation of the installation complies with all relevant legal requirements and that a high level of protection will be delivered for the environment and human health.

We explain how we have addressed specific statutory requirements more fully in the rest of this document.

3 How we reached our decision

Requesting information to demonstrate compliance with BAT Conclusion techniques

We issued a Notice under Regulation 60(1) of the Environmental Permitting (England and Wales) Regulations 2010 (as amended) on 27 July 2016 requiring the operator to provide information to demonstrate how the operation of their installation currently meets, or will subsequently meet, the revised standards described in the relevant BAT Conclusions document.

- Describes the techniques that will be implemented before 30/06/2020, which will then ensure that operations meet the revised standard, or
- Justifies why standards will not be met by 30/06/2020, and confirmation of the date when the operation of those processes will cease within the installation or an explanation of why the revised BAT standard is not applicable to those processes, or
- Justifies why an alternative technique will achieve the same level of environmental protection equivalent to the revised standard described in the BAT Conclusions.
- Where their permitted activity involves the use, production or release of a hazardous substances, as defined in Article 3(18) of the Industrial Emissions Directive, Real Alloy UK Limited were required to carry out a risk assessment considering the possibility of soil and groundwater contamination at the permitted installation with such substances. Where risk of such contamination is established prepare a baseline report containing information necessary to determine the state of soil and groundwater contamination so as to make a quantified comparison with the state upon definite cessation of the activity. Real Alloy UK Limited were required to provide a copy of the risk assessment and any consequent baseline report.
- Where their permitted activity involves the use, production, storage or release of a priority hazardous substances, as defined by the Water Framework Directive, Real Alloy UK Limited were required to carry out a risk screening assessment considering the presence of priority hazardous substances at the permitted installation. Where a risk of these substances is established the operator is to sample the effluent and screen for the priority hazardous substances. If these substances are found to be present in the effluent stream then assessment using the H1 tool and potential detailed dispersion modelling will be required to demonstrate that the effluent discharge will not have a significant impact to the receiving water. Real Alloy UK Limited were required to provide a copy of the sampling results and any subsequent screening or modelling reports.
- Where the compliance with the BAT conclusions leads to the substantial refurbishment or installation of new combustion plant with an aggregate

thermal input of greater than 20MWth, which generates more than 100kWth of heat, Real Alloy UK Limited must provide sufficient technical and commercial evidence to demonstrate compliance with Article 14, Paragraph 5 of Directive 2012/27/EU on Energy efficiency. This must include an assessment of the technical feasibility and costs of installing a combined heat and power (CHP) system or providing district heating and, where this assessment shows that the costs are not disproportionate to the benefits, proposals to incorporate these measures into your plant.

Where the operator proposed that they were not intending to meet a BAT standard that also included a BAT Associated Emission Level (BAT-AEL) described in the BAT Conclusions Document, the Regulation 60 Notice requested that the operator make a formal request for derogation from compliance with that AEL (as provisioned by Article 15(4) of IED). In this circumstance, the Notice identified that any such request for derogation must be supported and justified by sufficient technical and commercial information that would enable us to determine acceptability of the derogation request.

The Regulation 60 Notice response from the operator was received on 31 October 2016.

We considered that the response contained sufficient information for us to commence determination of the permit review. The operator made no claim for commercial confidentiality. We have not received any information in relation to the Regulation 60 Notice response that appears to be confidential in relation to any part.

4 Key issues/Regulation 60 response

BAT Conclusions for the non-ferrous metals industries were published as a Commission Implementing Decision (EU) 2016/1032) in the Official Journal of the EU on 30th June 2016. There are 184 BAT Conclusions. This annex provides a record of decisions made in relation to each relevant BAT Conclusion applicable to the installation. This annex should be read in conjunction with the permit/variation notice issued.

A detailed response was received from Real Alloy UK Limited. Where the operator has concluded that they have achieved BAT, and we are in agreement, no further information/justification has been sought by Natural Resources Wales.

5 Changes we have made

Improvement Conditions

Based on the information provided in the Regulation 60 response, we consider that we need to set improvement conditions. These conditions are set out below. We are using these conditions to require the operator to provide Natural Resources Wales with details that need to be established or confirmed during operations.

The operator shall submit, for approval by Natural Resources Wales, a report setting out progress to achieving the BAT Conclusions and BAT-AEL's where BAT is currently not achieved, but will be achieved by the 30th June 2020. The report shall include, but not be limited to, the following:

1. Current performance against the BAT Conclusions and BAT-AEL.
2. Methodology for reaching the AELs.
3. Associated targets / timelines for reaching compliance by 30th June 2020.

The report shall address all of the relevant BAT Conclusions and is to be completed one year following the date of issue of this permit.

Emissions to Air

Emission levels have been separated into two different tables within the permit, those applicable until 29 June 2020 and those from 30 June 2020. Two of the limits are to be decreased, Volatile Organic Compounds from 50 mg/m^3 to 30 mg/m^3 and Fluorides (as HF) from 2 mg/m^3 to 1 mg/m^3.

5 Conclusion

We consider that the installation already employed what used to be BAT, and that the operator has achieved significant improvements in performance since the permit was originally granted. The revised BREF and its BAT-AELs provide the opportunity to consider further environmental improvements.

Coupled with the consolidation and modernisation of the permit, we believe this variation provides a sound basis for ongoing regulation of the installation and we are satisfied that the operator is currently achieving or will be achieving all relevant BAT by the 30th June 2020.

We believe that we have ensured compliance with all relevant legal requirements in carrying out this review and making our determination on the variation.

Annex 1: Decision Checklist regarding relevant BAT Conclusions.

BAT Conclusions for the Non-Ferrous Metal Industries, were published as a Commission Implementing Decision (EU) 2016/1032) in the Official Journal of the EU on 30th June 2016. There are 184 BAT Conclusions. This checklist provides a record of decisions made in relation to each relevant BAT Conclusion applicable to the installation. This annex should be read in conjunction with the consolidated variation notice.

General BAT Conclusions

BAT Conclusion No	Summary of BAT Conclusion requirement	Status **One of the following:** Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
The BAT mentioned in this section apply to all installations covered by these BAT conclusions (Non-Ferrous Metals Industries)		
1.	BAT is to implement and adhere to an environmental management system (EMS).	Currently compliant.
2.	BAT is to use energy efficiently on-site.	Currently compliant.
3.	BAT is to improve overall environmental performance by ensuring stable operation using a process control system.	Currently compliant.
4.	BAT is to apply a maintenance management system which especially addresses the performance of dust abatement system as part of the EMS.	Currently compliant.
5.	BAT is to collect diffuse emissions as much as possible nearest to the source and treat them.	Currently compliant.
6.	BAT is to set-up and implement an action plan on diffuse dust emissions as part of the EMS that incorporates the following measures; identify the most relevant diffuse dust emissions sources, define and implement appropriate actions and techniques to reduce diffuse emissions over a given time.	Currently compliant.

BAT Conclusion No	Summary of BAT Conclusion requirement	Status **One of the following:** Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
7.	BAT is to reduce diffuse emissions from the storage of raw materials.	Currently compliant.
8.	BAT is to reduce diffuse emissions from the handling and transport of raw materials.	Currently compliant.
9.	BAT is to reduce diffuse emissions from metal production, by optimising the efficiency of off-gas collection and treatment.	Currently compliant.
10.	BAT is to monitor the stack emissions to air with a specific frequency and in accordance with EN standards. If EN standards are not available, BAT is to use ISO, national or other international standards that ensure the provision of data of an equivalent scientific quality.	Currently compliant.
11.	BAT is to reduce mercury emissions to air (other than those that are routed to the sulphuric acid plant) from a pyrometallic process by using one or both of the following; use raw materials with a low mercury content, use adsorbents.	Not applicable.
12.	BAT is to recover sulphur by producing sulphuric acid or liquid sulphur.	Not applicable.
13.	BAT is to prevent NO_x emissions to air from a pyrometallic process by using one of the following; low NO_x burners, oxy-fuel burners, flue-gas recirculation.	Not applicable.
14.	BAT is to prevent or reduce the generation of waste water.	Currently compliant.
15.	BAT is to segregate uncontaminated waste water streams from waste water streams requiring treatment.	Currently compliant.
16.	BAT is to use ISO 5667 for water sampling and to monitor the emissions to water at the point where the emissions leaves the installation at least once per month and in accordance with EN standards. If EN	Currently compliant.

BAT Conclusion No	Summary of BAT Conclusion requirement	Status **One of the following:** Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
	standards are not available, BAT is to use ISO, national or other international standards that ensure the provision of data of an equivalent scientific quality.	
17.	BAT is to treat the leakages from the storage of liquids and the waste water from non-ferrous metal production, including from the washing stage in the Waelz kiln process, and to remove metals and sulphates.	Not applicable.
18.	BAT is to reduce noise emissions by using one or a combination of the following; use of embankments, enclose noisy plant, use anti-vibration supports, orientation of noise emitting machinery, change the frequency of the sound.	Currently compliant.
19.	BAT is to reduce odour emissions by using one or a combination of the following; appropriate storage, minimise use of odorous materials, careful design, operation and maintenance, afterburners or filtration techniques.	Currently compliant.

BAT Conclusions for Aluminium production including alumina and anode production - secondary aluminium production

BAT Conclusion No	Summary of BAT Conclusion requirement	Status **One of the following:** Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
The BAT mentioned in this section apply to all installations covered by these BAT conclusions (Non-Ferrous Metals Industries)		
74.	BAT is to separate non-metallic constituents and metals other than aluminium.	Currently compliant.
75.	BAT is to use energy efficiently by using one or a combination of the following; pre-heating of furnace charge with exhaust gas, re-circulation of gases, supply liquid moulding for direct moulding.	Currently compliant.
76.	BAT is to remove oil and organic compounds from the swarf before the smelting stage using centrifugation and/or drying.	Currently compliant.
77.	BAT is to prevent or reduce diffuse emissions from the pre-treatment of scraps using one or both of the following; closed or pneumatic conveyor with air extraction systems, enclosures or hoods for the charging and discharge points.	Currently compliant.
78.	BAT is to prevent or reduce diffuse emissions from the charging and discharging/tapping of melting furnaces.	Currently compliant.
79.	BAT is to reduce emissions from skimming/dross treatment.	Currently compliant.
80.	BAT is to use a bag filter, to reduce dust and metal emissions from the swarf drying and the removal of oil and organic compounds from the swarf, from the crushing, milling and dry separation of non-metallic constituents and metals other than aluminium and from the storage, handling and transport in secondary aluminium production.	Not applicable.
81.	BAT is to reduce dust and metal emissions to air from furnace processes such as charging, melting, tapping and molten metal treatment	Currently compliant.

BAT Conclusion No	Summary of BAT Conclusion requirement	Status **One of the following:** Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
	in secondary aluminium processes by using a bag filter.	
82.	BAT is to reduce dust and metal emissions to air from re-melting in secondary aluminium production, by using one or a combination of the following; use of un-contaminated aluminium, optimisation of combustion conditions, bag filter.	Currently compliant.
83.	BAT is to reduce emissions to air of organic compounds and PCDD/F from the thermal treatment of contaminated secondary raw materials and from the melting furnace by using a bag filter and one of the following; selected feed materials, internal burner for furnace, afterburner, rapid quencher, and activated carbon injection.	Currently compliant.
84.	BAT is to reduce emissions to air of HCL, CL_2 and HF from the thermal treatment of contaminated raw materials, the melting furnace and re-melting & molten metal treatment by using one or a combination of the following; select feed material, $Ca(OH)_2$ injection with a bag filter, control of refining process, use of dilute chlorine and inert gas in the refining process.	Currently compliant.
85.	BAT is to reduce waste sent for disposal from secondary aluminium production, by organising operations on-site that facilitate re-use or recycling of process residues.	Currently compliant.
86.	BAT is to reduce the quantities of salt slag produced from secondary aluminium production.	Not applicable.
87.	BAT is to prevent or reduce diffuse emissions from the salt slag recycling process, by using one or both of the following; enclosed equipment with gas extraction connected to a filtration system, hood with gas extraction connected to a filtration system.	Not applicable.
88.	BAT is to prevent dust and metal emissions to air from crushing and dry milling associated	Not applicable.

BAT Conclusion No	Summary of BAT Conclusion requirement	Status **One of the following:** Not Applicable, Currently Compliant, Compliant in the future (within 4 years of publication of BAT conclusions), Not Compliant
	with the salt slag recovery process, by using a bag filter.	
89.	BAT is to reduce gaseous emissions to air from wet milling and leaching from the salt slag recovery process, by using one or a combination of the following; activated carbon injection, afterburner, wet scrubber with H_2SO_4.	Not applicable.