Environment Agency permitting decisions

Variation

We have decided to issue the variation for Coventry Non-Ferrous Metal Works operated by Mil-Ver Metal Company Limited.

The variation number is EPR/BL4478IN/V014.

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.

Description of the changes introduced by the Variation

This is a Substantial Variation.

This variation permits:

- the addition of equipment for the manufacture of copper, brass and gun metal alloys from secondary materials into ingot and cast shape form. The equipment is transferred from another site, owned by the parent company and consists of the following:
    - two induction furnace bodies each with 2 tonne capacity for the melting of recycled or primary copper, brass or gunmetal into alloys at a rate of 1.5 tonnes per hour;
    - 2 tonne capacity induction furnace body for the melting of recycled or primary copper to manufacture copper based master alloys and other alloys;
    - bag filtration unit for abatement from the melting and pouring operations;
    - shot blaster for use in the post processing of master alloy ingot;
    - atomic absorption spectrograph; and
    - X-ray fluorescence spectrometer.
- the installation of a new 5 tonne rotating furnace with a capacity of 1 tonne per hour;
- addition of activity A3 to table S1.1 for the new copper, brass and gun metal process;
- addition of activity A8, a DAA for storage and handling of raw materials;
- addition of table S2.2 showing the list of wastes permitted as a feedstock;
- addition of table S2.3 showing the list of waste permitted for acceptance for storage and onward trading only (not for use in activities A1 to A3);
- addition to table S3.1 of phosphorus, copper, zinc, lead, cadmium, arsenic and nickel;

- addition of improvement condition 2;
- amendments to the status log to correct some incorrect dates; and
- removal of emission points A5 and A6 for the dross press vents as they vent through emission point A1f.

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

- Key issues
- Annex 1 the decision checklist
- Annex 2 the consultation and web publicising responses

Key issues of the decision

Waste acceptance

Coventry Non-Ferrous Metal Works accepts non-hazardous and hazardous wastes as feedstock for use in the production and melting of non-ferrous metals. Some of the waste undergoes pre-treatment including hand sorting, baling, drying, briquetting, chopping and crushing. The installation also accepts some wastes that are stored prior to trading on or disposal. These processes have been carried out on site since the original permit was issued. However, the original permit does not include any waste operations, waste activities or tables of permitted wastes.

It has come to light during this determination that depending on the quantity of waste accepted and what happens to it after it is received, the installation could be considered as requiring waste operations or activities listed in table S1.1 A sector review is coming up within the next year and this issue will be picked up at that time when we can ensure consistency across the rest of the sector.

To establish whether the permit requires the addition of waste operations or activities we would need to question the applicant in greater detail about the

types and volumes of waste accepted, stored and pre-treated. The applicant doesn't currently have all this information to hand as they have not previously been required to provide such information. Furthermore, if an additional operation or activity needed adding to the permit we would need to re-advertise and re-consult.

We have made the decision to add tables S2.2 and S2.3 to the permit to show the wastes permitted for acceptance. Table S2.2 lists the waste permitted as a feedstock. Table S2.3 lists the wastes that are permitted for acceptance for only storage and removal off site. These wastes are not a suitable feedstock for activities A1 to A3 and are therefore not permitted for use in activities A1 to A3. We have not included maximum tonnages in these tables as the figures are not known at this time. This will form part of the assessment as to whether waste operations and activities are required and can be clarified in the sector review.

Listed activities

The current permit includes:

- S2.2 A(1)(a) Producing non-ferrous metals from secondary raw materials (melting dross in the Tilting Rotary Furnace).

- S2.2 A(1)(b) Melting non-ferrous metals (melting relatively clean scrap and ingot in a variety of furnaces)

However, the Opra profile does not include S2.2A(1)(a) and instead includes two complexities for S2.2A(1)(b).

We have looked into this and determined that activity S2.2A(1)(a) in the permit is incorrect and it is therefore amended to S2.2A(1)(b).

We have also added the new listed activity required as a result of the new equipment. Table S1.1 now contains the following activities:

- S2.2 A(1)(b) Melting non-ferrous metals from secondary raw materials and recovered products (melting dross in the Tilting Rotary Furnace) – Aluminium.

- S2.2 A(1)(b) Melting non-ferrous metals (melting relatively clean scrap and ingot in a variety of furnaces) – Aluminium.

- S2.2 A(1)(b) Melting non-ferrous metals from secondary raw materials in a variety of furnaces – copper, brass and gun metal.

The applicant has explained that dross utilised in the Aluminium process is used as a feedstock in the melting process to manufacture alloy ingot. Dross equates to just 18% of the total feedstocks purchased by Mil-Ver each year. The dross is blended with other scrap materials in order to make an alloy. The amount used depends on a number of factors, some economical, but mostly the specification that needs to be achieved. This means that some alloys

won't include dross as part of their charge or recipe. Dross is mainly included in the lower grade alloys.

The process usually achieves an Aluminium yield of approximately 50 – 70% Aluminium depending on the source of the dross and their foundry practices.

The non-metallic elements are pulled from the furnace in the salt slags which are then sent for further recycling via mechanical / chemical separation.

Mil-Ver does not melt the dross in isolation or as part of a different process. It would be impossible to produce a sealable alloy from dross alone and there is no benefit from purely harvesting the Aluminium for use at a later time / place unless it is part of a toll melting contract with a customer.

We are satisfied with the applicant's justification for the process for separating free aluminium metal from the dross being classified as melting as an alternative to producing.

Point source emissions to sewer

The H1 assessment tool submitted with the application did not include an assessment of the impact the new equipment would have on the point source emissions to sewer. The new equipment is being transferred from a site called Brookside Metal Company owned by the same parent company. The permit for Brookside includes point source emissions to water with monitoring for a number of parameters including metals. The discharge to sewer from Coventry Non-Ferrous Metal Works should therefore be assessed to show whether the relocation of the Brookside equipment will have an impact on the discharges to sewer. The discharge from the new process will be through existing emission point S1 but it will pass through a separate flow meter and have its own sampling point.

In a Schedule 5 Notice dated 03/06/15 the applicant was asked to submit a revised H1 assessment. The H1 assessment was revised a number of times through the determination.

The applicant submitted an assessment using the maximum values permitted by the trade effluent consent as the mean and maximum concentration of each substance. This resulted in copper, lead, nickel and zinc screened out at test 2; the test for whether the process contribution (PC) is < 4% of the EQS. Cadmium failed this test. Subsequent tests for cadmium could not be carried out as no background data was available to enable assessment of the predicted environmental concentration (PEC) against the EQS. The data used in this assessment was very conservative and isn't representative of the actual data, but allows worst case scenario to be assessed.

Severn Trent Water has not provided a maximum permissible limit for cadmium in the trade effluent consent. The Operator has assessed based on

the 200 ug/l limit from the Brookside permit. This limit is set for a discharge to water rather than sewer. If the limit was set for sewer then it could be assumed that this limit would be fine as both sites are in the same water company area. It is likely that this limit was set to protect surface water and might therefore be more stringent than any level that would be set by the water company for a discharge to sewer. However, this cannot be assumed.

To enable a more realistic assessment, the applicant revised the H1 to use actual emission concentrations for the mean effluent concentration of each substance and the emission limit from the trade effluent consent as the maximum concentration of each substance. For flow rates, the 24 hour mean from the discharges consents (m^3/day converted to m^3/s) was used for the mean effluent flow and maximum flow rate from the discharge consent (l/s converted to m^3/s) was used for the maximum effluent flow rate. All substances passed at test 2.

The actual levels of cadmium measured at Brookside are around 20 – 30 ug/l which is around 10% of 200 ug/l used in the assessment. Our audit check suggests that the Operator could discharge up to 85 ug/l of cadmium before they would exceed the 4% insignificance level at test 2. Taking this into account alongside both of the H1 assessments we are satisfied that the actual discharge of cadmium is insignificant and will not cause a significant environmental impact.

We have set an improvement condition requiring an assessment of the impact of emissions to sewer of cadmium, copper, lead, nickel and zinc from emission point S1. The assessment should be based on emissions monitoring data obtained during the first year of operation of the new discharge. It should use a minimum of 12 samples together with measured effluent flows to evaluate the impact of emissions using the Environment Agency H1 screening tool, to compare actual emissions with those assumed in the impact assessment submitted with the variation application.

Point source emissions to air

We have audited the air quality assessment submitted with the application. We requested additional information from the applicant by way of a Not Duly Made letter dated 21/05/15 and two Schedule 5 Notices dated 03/06/15 and 30/07/15. The final version of the air quality assessment is version 4 received on 10/08/15.

Our assessment shows that the predicted annual mean NO_2 process contribution (PC) from the installation for both the existing installation and proposed installation cannot be considered insignificant. However, the incremental increase from the proposed variation is insignificant (PC<1% of the EQS). Therefore we are satisfied that the variation will not result in significant environmental impact.

The PCs to Critical Levels and Loads are unlikely to be significant and therefore the environmental risk is sufficiently low that we are satisfied there will be no likely significant impact.

For lead, nickel, arsenic and cadmium the applicant modelled based on the ELVs set in the permit for Brookside, the source of the new equipment. These are as follows:

- Lead 15 mg/m^3
- Cadmium, arsenic, nickel and their compounds taken together (as elements) 1.5 mg/m^3

The PCs were predicted to exceed the EQS if emitted at the proposed ELVs. However, the applicant's report stated that the actual monitored data from the Brookside equipment indicated that emissions are significantly lower than the ELVs. Therefore the applicant was recommended to propose lower ELVs using the actual data as a basis.

The following revised ELVs were proposed by the applicant:

- Lead 0.4 mg/m^3
- Cadmium, arsenic, nickel and their compounds taken together (as elements) 0.01 mg/m^3

The short term PC of these substances are less than 10% of the respective EQS and can be considered insignificant. The PC of the long term EQS were greater than the 1% insignificance criteria. We then considered background concentrations. The applicant derived the annual average background concentrations from the Urban Industrial site in Bilston Lane, Walsall which we consider appropriate. Using these background concentrations the applicant's Predicted Environmental Concentration (PEC) is less than 100% of the EQS. We are satisfied that there will be no likely significant impact.

Phosphorus was also expected to exceed the EQS if submitted at the proposed ELV of 5 mg/m^3.

The applicant updated the air quality assessment outlining phosphorous emissions as P_4, yellow. There is no EQS for phosphorus yellow therefore the applicant derived an EQS using the methodology from Occupational Exposure Limits (OEL) set out in the Environment Agency's guidance note H1 Annex F. 1.5 mg/m^3.

The long term PC is greater than the 1% insignificance criteria, however the applicant has not compared the PEC against the EQS. We note that phosphorus compounds are not listed on Defra's UK-AIR data archive of ambient concentrations. Phosphorus P4 yellow is the elementary form of phosphorus, which is highly unstable when exposed to air. Therefore, should phosphorus yellow be emitted it is likely it will quickly react forming a phosphorus compound. A review of other phosphorus compounds calculated

from OELs indicate these have higher EQSs, however the PC cannot be considered insignificant. We note that the applicant has not accounted for the dilution air from the Mil-Ver plant in deriving their ELV. As part of our sensitivity checks we have accounted for dilution, and consider the risk to be sufficiently low that we are satisfied there is no likely significant impact.

Annex 1: decision checklist

This document should be read in conjunction with the application, supporting information and permit/notice.

Aspect considered	Justification / Detail	Criteria met Yes
Consultation		
Scope of consultation	The consultation requirements were identified and implemented. The decision was taken in accordance with RGN 6 High Profile Sites, our Public Participation Statement and our Working Together Agreements. For this application we consulted the following bodies: • Coventry City Council – Environmental Protection • Public Health England • Food Standards Agency • Health and Safety Executive • Director of Public Health Coventry City Council	✓
Responses to consultation and web publicising	The web publicising and consultation responses (Annex 2) were taken into account in the decision. The decision was taken in accordance with our guidance.	✓
Operator		
Control of the facility	We are satisfied that the applicant (now the operator) is the person who will have control over the operation of the facility after the grant of the permit. The decision was taken in accordance with EPR RGN 1 Understanding the meaning of operator.	✓
The facility		
The regulated facility	The extent/nature of the activities and operations taking place at the site required clarification. The decision on the facility was taken in accordance with Appendix 2 of RGN 2 "Defining the scope of the installation", Appendix 1 of RGN 2 "Interpretation of Schedule 1". See key issues.	✓
European Directives		
Applicable directives	All applicable European directives have been considered in the determination of the application.	✓
The site		
Extent of the site of the facility	The operator has provided a plan which we consider is satisfactory, showing the extent of the site of the facility. A plan is included in the permit and the operator is required to carry on the permitted activities within the site boundary.	✓

Aspect considered	Justification / Detail	Criteria met Yes
Biodiversity, Heritage, Landscape and Nature Conservation	The application is within the relevant distance criteria of a site of heritage, landscape or nature conservation, and/or protected species or habitat. A full assessment of the application and its potential to affect the site has been carried out as part of the permitting process. We consider that the application will not affect the features of the site. We have not formally consulted on the application. The decision was taken in accordance with our guidance. The Appendix 11 was sent to Natural England (NE) for information only.	✓
Environmental Risk Assessment and operating techniques		
Environmental risk	We have reviewed the operator's assessment of the environmental risk from the facility. The operator's risk assessment is unsatisfactory and required additional Environment Agency assessment to make up the shortfall. The H1 tool for emissions to air was incorrectly completed but detailed modelling was undertaken and an air quality assessment submitted which was audited by the Environment Agency and supersedes the H1 tool. See key issues for further explanation. The H1 tool was also used to assess the discharges to sewer. See key issues for further explanation. The assessments show that, applying the conservative criteria in our guidance on Environmental Risk Assessment all emissions may be categorised as environmentally insignificant.	✓
Operating techniques	We have reviewed the techniques used by the operator and compared these with the relevant guidance notes. The proposed techniques and emission levels for priorities for control are in line with the benchmark levels contained in the TGN and we consider them to represent appropriate techniques for the facility. The permit conditions ensure compliance with relevant BREFs and BAT Conclusions, and ELVs deliver compliance with BAT-AELs.	✓
The permit conditions		
Updating permit conditions during consolidation.	We have updated previous permit conditions to those in the new generic permit template as part of permit consolidation. The new conditions have the same meaning as those in the previous permit(s).	✓

Aspect considered	Justification / Detail	Criteria met Yes
	The operator has agreed that the new conditions are acceptable.	
Waste types	We have specified the permitted waste types and descriptions which can be accepted at the regulated facility. See key issues.	✓
Improvement conditions	Based on the information in the application, we consider that we need to impose an improvement condition. We have imposed improvement condition 2 to require the Operator to compare actual emissions from emission point S1 with those assumed in the impact assessment submitted with the application. See key issues.	✓
Incorporating the application	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. These descriptions are specified in the Operating Techniques table in the permit.	✓
Emission limits	**Emissions to air** We have decided that emission limits should be set for the parameters listed in the permit. The following substances have been identified as being emitted to air in significant quantities. It is considered that the numeric limits described below will prevent significant deterioration of air quality. We have imposed numeric limits because either a relevant environmental quality or operational standard requires this. • Particulate 10 mg/m^3 (daily) / 5 mg/m^3 (monthly) • Oxides of Nitrogen 100 mg/m^3 • (as NO2) • Sulphur dioxide 50 mg/m^3 • Hydrogen chloride 10 mg/m^3 • Carbon monoxide 150 mg/m^3 • Volatile organic compounds (as C) 50 mg/m^3 • Dioxins (as ITEQ) 0.1 ng/m^3 • Fluorides (as HF) 1 mg/m^3 • Phosphorus (as P2O5) 1.5 mg/m^3 • Copper and its compounds (as metal) 2 mg/m^3 • Zinc and its compounds (as metal) 40 mg/m^3 • Lead and its compounds (as metal) 0.4 mg/m^3 • Cadmium, arsenic, nickel and their compounds	✓

Aspect considered	Justification / Detail	Criteria met Yes
	taken together (as elements) 0.01 mg/m^3 It is considered that the ELVs/ equivalent parameters or technical measures described above will ensure that significant pollution of the environment is prevented and a high level of protection for the environment secured. See key issues for more information. **Emissions to sewer** There are no emission limits for the discharge to sewer.	
Monitoring	We have decided that monitoring should be carried out for the parameters listed in the permit, using the methods detailed and to the frequencies specified. Monitoring has not changed for the parameters that were previously permitted. Monitoring requirements have been imposed for the new parameters added which are phosphorus, copper, zinc, lead, cadmium, arsenic and nickel. These monitoring requirements have been imposed in order to ensure compliance with the ELVs. We made these decisions in accordance with guidance M2 monitoring of stack emissions to air. Based on the information in the application we are satisfied that the operator's techniques, personnel and equipment have either MCERTS certification or MCERTS accreditation as appropriate.	✓
Reporting	We have specified reporting in the permit. Reporting has been set in line with the current reporting requirements.	✓
Operator Competence		
Environment 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. The decision was taken in accordance with RGN 5 on Operator Competence.	✓

Annex 2: Consultation and web publicising

Summary of responses to consultation and web publication and the way in which we have taken these into account in the determination process. (Newspaper advertising is only carried out for certain application types, in line with our guidance.)

Response received from
Coventry City Council – Environmental Protection
Brief summary of issues raised

• Coventry is an Air Quality Management Area (AQMA) for NO_x therefore an emission limit should be set that ensures no net increase from current levels.
• Daily odour/olfactory assessments should be required due to ongoing complaints in the area, although not substantiated or alleged to be coming from the site it would be prudent to have a log record of olfactory checks, including dates, times, wind direction.
• What will the efficiency/capture rate be for any filters in respect of $PM_{2.5}$ and what emission limit will be set?
• Energy conservation and air quality mitigation measures should be implemented across the site to offset the overall environmental impact of the process with reference to:
  • Travel Plans for staff and visitors, including mechanisms for discouraging high emission vehicle use and encouraging modal shift, (i.e. public transport, cycling and walking) as well as the uptake of low emission fuels and technologies;
  • Provision of electric vehicle recharging points for staff and visitors (10% of parking provision to be for EV recharging for commercial/industrial);
  • Provision of low emission vehicles intended for use on site;
  • Use of low NO_x boilers in all offices/ commercial buildings when plant is changed;
  • Consideration of the use of renewable energy technologies, excluding biomass when conducting energy assessments; and
  • Provision of low emission waste collection services.

Summary of actions taken or show how this has been covered
• Emissions to air have been assessed and this is summarised in the key issues section of this document. We are satisfied that there will be no likely significant impact. • The operator has identified the potential for odour release from the storage of Aluminium dross when wet. Drosses are stored under cover in designated bays. The drosses from the new copper process will be stored in the same way and odours should be minimal.

- The current permit sets a limit of 10 mg/m^3 for particulate matter PM_{10}. Due to new dust abatement being transferred from Brookside it is anticipated there will be a reduction in the emission concentration from the stack. The assessment considered PM_{10} which also accounts for $PM_{2.5}$. We are therefore satisfied that the filters are appropriate for the effective removal of particulates.
- Condition 1.2.1 for energy efficiency sets out the requirements the Operator must meet. As part of this the operator may choose to consider renewable energy technologies and alternative waste collection services.
- Travel plans and strategies for staff and visitors, including provision of electric vehicle recharge points and low emission vehicles, are relevant considerations for the grant of planning permission and do not form part of the Environmental Permit decision making process.
- The use of low NO_x boilers in offices and commercial buildings when plant is changed does not form part of the Environmental Permit decision making process.

Response received from
Public Health England
Brief summary of issues raised
• The permit should contain conditions to ensure that emissions to air from point sources, fugitive emissions and odour do not impact upon public health. • No significant concerns providing that all appropriate measures are taken to prevent or control pollution in accordance with the relevant sector technical guidance or industry best practice.
Summary of actions taken or show how this has been covered
• We have assessed the changes to point source and fugitive emissions and are satisfied that there will be no significant impact on human health. Schedule 3 of the permit sets out the monitoring and reporting requirements and we are satisfied that these will control emissions. • We are satisfied that the operator has in place all appropriate measures to prevent and control pollution in accordance with relevant guidance. The operator's response to form C3, question 3 sets out the operating techniques and technical standards and this has been incorporated into the permit via table S1.2 Operating Techniques.

We also consulted the Food Standards Agency, Health and Safety Executive and Director of Public Health Coventry City Council. No responses were received.