

# DECISION DOCUMENT RECORDING DETERMINATION OF AN APPLICATION FOR A PPC PERMIT FROM CORUS STRIP PRODUCTS

## PART A – INTRODUCTION

### A1: Administrative Information

Operator: Corus Strip Products  
Installation: Llanwern Steelworks  
Permit Number: BS3905  
Account Manager: Chris Bower (until 3/9/2003), PIR/RSR Officer  
Gareth Richards (from 3/9/2003), PIR/RSR Officer

Permit Team: Liz Parr, Technical Support Officer (Admin)

Internal Consultees: David Headworth, Contaminated Land  
Stuart Craxford, Conservation

Number of components: 13

Application fee: £73,603.70

Schedule 1 Primary Activity: Section 2.1 Part A(1)(c)

Date received: 31st July 2002

Further information notices issued: 9<sup>th</sup> August 2002  
18<sup>th</sup> October 2002

Pier review: 10<sup>th</sup> December 2003 (Andrew Johnson)

Issue date: 18<sup>th</sup> March 2004

### A2: Regulatory History

- Site is an existing steelworks authorised under IPC in 1995, AR0349.
- Site authorised under Waste Management licenses 07/77 and 024/79, the latter now part of the regeneration area not included in the PPC permit.
- Site also holds a Radioactive Substances Registration BV2239 for closed sources.

### A3: Determination Procedure

Advert dated 2<sup>nd</sup> September 2002 in SW Argus and 5<sup>th</sup> September 2002 in London Gazette.

| Consultee | Date Sent to Consultee       | Reply received                  | Comments                                                                             |
|-----------|------------------------------|---------------------------------|--------------------------------------------------------------------------------------|
| FSA       | 14 <sup>th</sup> August 2002 | 23 <sup>rd</sup> September 2002 | Unlikely that operation will result in any unacceptable effects on human food chain. |

|                                |                              |                                 |                                                                                                                                                                                                                                        |
|--------------------------------|------------------------------|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Gwent Health Authority         | 14 <sup>th</sup> August 2002 |                                 | No comments received                                                                                                                                                                                                                   |
| Newport County Borough Council | 14 <sup>th</sup> August 2002 | Verbal confirmation 3/9/03      | No comments made                                                                                                                                                                                                                       |
| Dwr Cymru Welsh Water          | 14 <sup>th</sup> August 2002 | 16 <sup>th</sup> September 2002 | No comments                                                                                                                                                                                                                            |
| CCW                            | 14 <sup>th</sup> August 2002 | 17 <sup>th</sup> September 2002 | Magor Marsh should be included in SSSI assessment zone, requested clarification of terminology used for water emissions assessment and threshold for 'significant' atmospheric emissions.                                              |
| National Assembly Wales        | 14 <sup>th</sup> August 2002 | 16 <sup>th</sup> September 2002 | General criticism of digging methodology adopted on site, suggested typing error in dispersion modelling table and comment related to the omission of SO <sub>2</sub> modelling data despite acknowledgement that values would be low. |

See Appendix D for responses to representations received.

#### **A4: Consideration of Regulation 10(3) and 10(4)**

##### **Regulation 10(3): Competence**

*The Regulations require that the Agency is satisfied the applicant is the person who will have control over the operation of the installation and that he will be able to operate the installation so as to comply with the conditions which would be included in the permit.*

The applicant owns and controls the entire Corus site at Llanwern. The applicant submitted an overview of the installation management systems, which suggests that necessary control of the operation would be maintained. The activities on the site have been subject to the IPC regulatory regime since its inception. Corus maintain a highly professional and skilled workforce despite recent rationalisation site activities and decommissioning of steelmaking and coke production. The company is externally accredited under ISO 14001 and has procedures which take environmental considerations into account. It is therefore expected that the applicant will operate the installation in compliance with the permit conditions imposed.

### **Regulation 10(4): Requirements for specified waste management activities**

*The Regulations require that for these activities the operator must be a fit and proper person and planning permission must be in force.*

Response to question B7.1 states that there are no specified waste management activities on site. Only wastes that are generated by the installation will be managed.

## **PART B – DETERMINATION OF PERMIT CONDITIONS**

### **B1: Part I of the Permit**

*Part 1 of the Permit deals with the activities comprised in the installation and its geographical extent.*

Documents used during permit determination:

IPPC S2.04 Draft Guidance for the Hot Rolling of Ferrous metals and Associated Activities

Technical Guidance Note (Monitoring) M2 Version 1

The Pollution Prevention and Control (England and Wales) Regulations 2000

### **Condition 1.1.1: The Permitted Installation**

*The definition of "installation" is contained in R2 of the Regulations and Government guidance on its interpretation is provided in "IPPC: A Practical Guide".*

The installation includes the prescribed activities:

Processing ferrous metals and their alloys by using hot rolling mills with a production capacity of more than 20 tonnes of steel per hour (2.1A(1)(c)).

Burning any fuel in an appliance with a rated thermal input of 50MW or more (1.1A(1)(a)).

Surface treating metals and plastic materials using an electrolytic or chemical process where the aggregated volume of the treatment vats is more than 30m<sup>3</sup>.

Applying protective fused metal coatings with an input of more than 2 tonnes of crude steel per hour. As a result of SI1699 where these two activities are directly linked they are considered as A(2) processes.

Other associated activities which are technically connected to the above prescribed activities and form part of the installation are:

Slab unloading, storage and transfer to furnaces.

Cold reduction mill.

Packing and despatch areas.

Nitrogen supply.

Water treatment plant.

Table 1.1.1 of the permit specifies that the boundaries of the Installation include all the above activities from receipt of slabs to despatch of finished product within the area marked on the Site Plan. This also includes all release points to air and fugitive emissions. It does not include the effluent discharge pipeline from the works to the discharge point 200m beyond the shoreline.

There is only one Operator on site and multiple permits are not required

#### **Condition 1.1.2: The Permit Plan/Site Report**

*The permit plan/site report area should include all the land over which any of the activities comprised within the installation (or the part of it that is applied for) may take place. The site report submitted with the application should be satisfactory*

The site plan in the original application complied with the minimum requirements.

Sufficient information was supplied in the original application together with supplementary information received from the applicant (08/01/03, 17/06/03) to be able to accept the baseline information provided by Corus. In response to Dave Headworth's comments (memo dated 06/02/03) the outstanding requirement for Corus to provide, for each of the 11 zones identified in the Site Condition Report, a scaled plan identifying locations for raw materials storage, processing and waste handling activities that may give rise to accidental emissions/release of contaminants to land, has been incorporated as Improvement Item 9.3.

#### **Condition 1.1.3: Pre-operation conditions**

*Regulation 12(9)(d) allows the imposition of conditions in respect of "steps to be taken prior to the operation of the installation".*

No pre-operational conditions have been set.

#### **B2: Part 2 of the Permit**

#### **General Note – for Parts 2 and 6 of the Permit**

*The determination of BAT under Regulation 3 should be based on an assessment of a range of techniques for the prevention or reduction of emissions from the installation, taking account of their "costs and advantages" and considering in particular, the factors set out in Schedule 2 of the Regulations. When setting emission limit values ("ELVs") based on BAT, the technical characteristics of the particular installation, its geographical location and the local environmental conditions" (R12(6)), should also be considered. Consideration should also be given to whether any EC EQSs "require" stricter ELV's to be imposed (R12(7)). This will depend on the extent to which the proposals contribute to any breach or overloading of an EQS (see IPPC: A Practical Guide). In addition to the requirement to set ELV's or "equivalent parameters or technical measures" based on BAT the PPC Regulations require a consideration of whether it is also appropriate to set further conditions to deliver the general principles described in Regulation 11 and the particular matters identified in Regulation 12(9).*

*Any Technical Guidance which is available for an IPPC sector will have already involved a BAT assessment, based on the above principles, sufficient to set indicative BAT standards in terms of both ELVs/benchmarks and the technical measures which underpin them. The same is true for the cross-sectoral "General Technical Guidance". Considerable research and consultation on these assessments will have been undertaken at both European (in terms of the development of the BREFS) and UK levels. The Technical Guidance (section 2) divides the techniques, measures and issues to be considered in determining an IPPC application into 16 main sections. The IPPC application form also requires applicants to provide information on the proposals for their installation in accordance with these 16 subject areas. Operators are required to address all of the issues set out in the relevant sections of the Technical Guidance in each case and to justify their proposals against any indicative requirements contained in the Guidance and against the other requirements of the Regulations.*

*The conditions in Part 2 of the permit also mirror these 16 subject areas and the text below addresses each condition in turn, highlighting the particular parts of the PPC Regulations which are being addressed in each case, and recording the Agency's assessment of the relevant part of the application and reasoning for the imposition of conditions in each case.*

#### **Condition 2.1: Management Techniques**

*Management techniques are one of the available techniques for emission prevention and control and are therefore part of the determination of BAT for the installation.*

The response to question B2.1 is given in Section 2.1 of the application and supported by specific comments in response to Schedule 4 questions. The application describes the current management systems relating to environmental matters. An accredited environmental management system is operated in compliance with ISO14001. Full accreditation for all the manufacturing activities (energy, hot rolled products, cold rolling, coating) to be carried out on site under the PPC permit, has recently been obtained. The company has a well developed environmental policy and a separate works environmental policy exists that reflects both the company policy and local issues. Such policies are reviewed annually.

Company procedures exist for identifying, key environmental impacts, existing and future legislative requirements. Individual accredited site area have their own improvement plans and the company procedures contribute towards continuing improvements. Staff environmental awareness is maintained at a high level by regular briefings and a training programme. Dedicated procedures exist for pollution control and accidents. All the described procedures are subject to regular audits.

The management structure for environmental matters is described together with the preventative maintenance programme and management of change procedure.

Overall the described management techniques are considered to be comprehensive and represent BAT. No additional conditions have been incorporated into the permit.

### **Condition 2.2: Raw Materials (including water)**

*The use of raw materials and water are some of the available techniques for emission prevention and control and are therefore part of the determination of BAT for the installation. "The consumption and nature of raw materials (including water) used in the process" is also one of factors which is considered in determining which of the other available techniques for prevention and control of emissions are BAT (see Schedule 2 of the Regulations).*

The response to question B2.2 is given in Section 2.2 of the application. The Company has identified the main raw materials used in the process and overall water usage. Due to process limitations and customer requirements there is little potential for use of alternative raw materials. Under the EMS any raw material substitutions would necessitate consideration of environmental factors.

In accordance with BAT requirements condition 2.2.2 has been included to ensure an inventory of materials used on site is maintained and the fate of these materials is assessed. This is intended to ensure that the environmental consequences of any new material proposed for introduction to the process are assessed before they are brought on site.

Condition 2.2.3 has been included to ensure that waste materials are not used by the company without prior agreement being obtained from the Agency.

The company acknowledged in the application that a waste audit had not been carried out recently at Llanwern. Improvement Item 9.1 has therefore been included to ensure waste generation is kept under review and that opportunities for reducing waste arisings are acted upon according to an agreed timetable.

The works had not been operated in the current configuration for very long and therefore little information exists on water usage. In accordance with BAT requirements Improvement Item 9.11 has been included for a water efficiency audit to be carried out. This should review current water usage against relevant usage rates in the Iron and Steel PPC guidance note and relevant BREF note. If usage rates are high proposals will be made and implemented with the objective of reducing usage.

In section 4 of the permit a requirement to report KPI's has been included. This will enable year on year comparison of water and oil usage per tonne of steel processed.

### **Condition 2.3: Techniques for Prevention and Control of Emissions and Waste ("operating techniques")**

*The design of the installation and operating techniques proposed will be key techniques for emission prevention and control and are therefore part of the determination of BAT for the installation. Regulation 12(9) also requires a consideration of appropriate conditions for the "minimisation of long distance and transboundary pollution"; ensuring "appropriate protection of the soil and groundwater"; and for "periods when the installation is not operating normally, including start-up, leaks and malfunctions and momentary stoppages". Conditions*

*imposed under 2.3; in conjunction with those imposed under 6 ahead, secure these aims.*

The response to question 2.3 is given in Section 2.3 and in response to Schedule 4 Notice (13/01/2003).

#### 2.3.1 Hot rolling

All reheat furnaces have been converted to 100% natural gas with no back up fuel. The burners were installed in 1993 and are not low NOx. Performance since conversion has been good with NOx release levels similar to the benchmark levels for low NOx burners. The potential environmental benefit from upgrading to low NOx burners is small especially in consideration of the likely cost and expected lifetime for the installation.

Main releases during the hot rolling process include contaminated water, oils and greases, and small amounts of iron oxide fume. Existing process for dealing with these releases include BAT. The exception to this is hot mill sludge. The storage and treatment of this is covered elsewhere.

#### 2.3.2 Cold rolling and coatings

Processes described in application are in good agreement with BAT. Cooling water is used in a dedicated closed loop system and the system is integrated. Concerns regarding the maintenance of bunding are addressed through Improvement Item 9.1.

#### 2.3.3 Pickling

The described pickling operations are in good agreement with BAT. Treatment of the generated aqueous wastes enables recovery of ferrous chloride that is reused as a water treatment agent off site. All bunded storage vessels are equipped with level measurement devices. Regular manual inspection of the operating areas are carried out and maintenance jobs are logged on the engineering management system. Further reference to bunding is made in 2.3.8.

Specific BAT assessment of arrangements for spent pickle liquor were detailed in Schedule 4 response. Acid regeneration is not considered an appropriate option at present due its potential greater adverse environmental impact than the current practice of ferrous chloride sale to the water treatment industry. In line with philosophy for continuous improvement it is appropriate that current practice is reviewed in the future. However, this is not considered necessary before the normal BAT reviews undertaken at 36 monthly intervals.

#### 2.3.4 Energy and Environment

A revised section 2.3.4 was issued as a Schedule 4 response. This was necessary due to the replacement of boiler plant with three new twin furnace package boilers, although these are not fitted with low NOx burners. These boilers are fuelled by natural gas with light fuel oil back up. No abatement plant is fitted to these boilers. Releases to air are controlled by careful control of combustion conditions and burner maintenance. The benchmark NOx releases for low NOx burners is being achieved by the plant. Additional NOx reduction equipment would not result in further reductions that were proportionate to the costs involved. Other emissions from the boilers when using natural gas are considered insignificant (particulates and SOx). CO releases

have been included as part of the reported emissions to ensure a high standard of boiler maintenance, but no ELV's set. (Guidance Note S3 1.01 suggests achievable limits for CO are 100 and 303mg/m<sup>3</sup> for natural gas and light fuel oil firing respectively).

#### 2.3.5 Control of point source emissions to air

Existing Corus practice has been reviewed against BAT. No further detailed studies into abatement options are considered necessary. NO<sub>x</sub> is the main release to air where there is not BAT compliance. However, the reheat furnaces are ~10years old and are operating close to the benchmark for SCR technology (350mg/m<sup>3</sup>). Following recent conversion to natural gas firing further improvements have been realised and further additional large expenditure to upgrade would be disproportionate. Similar arguments exist for the new package boilers. SO<sub>x</sub> is only released in significant quantities when back up oil firing is used. Releases are effectively controlled by limiting the fuel oil S content(0.2%w/w), no additional abatement is considered necessary. To enable year on year comparisons of CO<sub>2</sub> and NO<sub>x</sub> emissions KPI's have been included in the permit as a reporting requirement.

#### 2.3.6 Abatement of point source emissions to surface water

At each activity area process water is either treated for recycle or to improve the quality of the effluent discharge. The treatments are tailored depending upon the water source. All effluent for disposal enters the works effluent system and is either treated with foul sewer material (reed bed treatment prior to discharge via Lagoon 14) or discharged via Lagoon 14 after final polishing and treatment there. Annual average discharge concentrations are less than the benchmark release concentrations. The quantity of effluent discharged is significant and Improvement Item 9.11 has been included to ensure water usage is reviewed and minimised, thereby also reducing effluent volumes. In addition Improvement Item 9.13 has been included to review effluent treatment against BAT specific reference to suspended solids discharge and minimisation of risk of discharging oil contaminated water.

#### 2.3.7 Control of fugitive emissions to air

The potential for fugitive emissions to air is low, although absolute values have not been quantified. On site vehicle movements, in particular slab movements, are the main contributory factors. Existing site procedures based on water spraying are used to control dust releases during dry weather. Fume releases from welding and acid based activities are minimised through use of fume arrestor stacks and hoods. Specific additional measures are not considered necessary.

#### 2.3.8 Control of fugitive emissions to surface water, sewer and groundwater

The network of drains and bunds on site is extensive although a significant proportion of this is not now used since decommissioning of the steel plant. There exists significant potential for fugitive releases to ground from poorly maintained drains and the extensive bunded areas. A copy of the most recent bund audit (January 2003) was supplied in response to a Schedule 4 request. This identified many areas where existing standards fell below BAT. In addition it is stated in the application that sub surface pipework is subject to appropriate maintenance regimes. These are not described however. It is therefore considered appropriate to include two Improvement Items (9.1 and 9.12) to ensure the bunds and drains are brought up to and maintained to an appropriate standard.

### 2.3.9 Odour

The potential for odour from the Llanwern operation is small. Possible sources are HCl fume from the pickle line scrubber and SO<sub>2</sub> from the combustion process stacks. Neither of these sources is envisaged to present significant risk and the recent history of odour complaints indicates that there is no current perceived issue.

### **Condition 2.4: Groundwater Regulations 1998**

*A PPC permit should not be issued unless the relevant requirements of the Groundwater Regulations have been met.*

List I or List II substances are not discharged directly to groundwater from the process, although this is not stated explicitly within the application. On site soakaways, constructed for the disposal of surface rainwater, represent the main route for direct discharge to groundwater. Indirect releases could arise through spillage and inadequate bunding. To minimise such risk Condition 2.4.2 has been included in the permit to ensure adequate bunding arrangements. In addition as discussed in 2.3.8 above, Improvement Items 9.10 and 9.1 have been included in the permit.

### **Condition 2.5: Waste Handling and Storage**

*Waste handling and storage techniques are some of the available techniques for emission prevention and control and are therefore part of the determination of BAT for the installation. Regulation 12(9)(b) also requires consideration of appropriate conditions for the management of waste generated by the installation.*

The application identifies waste materials generated by the process. Procedures are described for the handling and storage of waste materials. These are in accordance with BAT requirements, except in respect of oily mill scale. The use of Lagoon 27 for temporary storage of oily mill scale is not considered BAT and further additions to the Lagoon are to cease (Improvement Item 9.4). Storage to date in Lagoon 27 and future separate storage should be compliant with the definitions that do not classify the store as a landfill. These stipulate that temporary storage must be for a period not greater than 12 months (prior to disposal) or 36 months (prior to recovery or treatment), ref. 'General Regulatory Guidance to Landfill Operators/Licence Holders', version 1.0 September 2001. Corus have historically claimed that the Lagoon is a temporary store of waste and have not paid any Landfill tax on the ~200 000t current inventory. By the inclusion of Improvement Items 9.2 and 9.4 there will remain a liability on Corus to deal with the current material in a manner acceptable to the Agency.

Permit table 2.5.1 is self explanatory.

Table 2.5.2 defines the storage locations of the segregated waste materials and the storage manner.

### **Condition 2.6: Waste Recovery and Disposal**

*Regulation 11 requires a consideration of appropriate conditions to ensure that "waste production is avoided or where waste is produced it is recovered where*

*technically and economically possible, or if not disposed of while avoiding or reducing any impact of the environment”.*

Corus have a policy to minimise waste arisings. The main waste streams such as ferrous chloride solution, steel scrap and oil all have well developed recycle routes. The exception to this is oily mill scale. There is a stated intention to reassess the current disposal routes for all waste streams in light of the implementation of the Landfill Directive. The incorporation of Improvement Item 9.7 (discussed in Section 2.2) will ensure this is carried out.

There are concerns regarding the disposal oily mill scale (as discussed above). The proposed transfer of this material to Port Talbot for treatment and subsequent reuse has been hampered by technical problems with the new treatment plant (verbal communication from Mark Broom 21/10/03). Without this facility Llanwern will need to continue to store such material in Lagoon 27. This is not a long term viable option. Neither has this Lagoon been cited in Corus's landfill PPC application. A pragmatic solution to this problem is to require the use of alternative storage facilities pending eventual disposal or treatment off site. Such storage facilities should only be used for a maximum period of 12 or 36 months. The precise duration that Lagoon 27 has been in use has not been determined but it will exceed 36 months. There seems to be some flexibility with this period as the wording of the definition of a landfill uses the phrase 'excluding storage of waste prior to recovery or treatment for a period of less than 3 years as a general rule'. In consideration of the extent of the problem facing Corus Improvement Item 9.4 requires annual update of permanent disposal options for both current and historic arisings. This is considered a proportionate response to the problem that ensures there is an ongoing liability on Corus to deal with the issue.

#### **Condition 2.7: Energy Efficiency**

*The efficient use of energy would be an available technique for the prevention and reduction of emissions (i.e. a BAT technique). Energy efficiency is also one of the factors listed in Schedule 2 which should be taken into account in determining which is the best of the range of techniques for prevention and reduction of emissions. In addition Regulation 11 requires appropriate conditions to be imposed in order to secure that “energy is used efficiently”. However, in the case of installations which are the subject of climate change levy or trading agreements, some of these requirements are met through those agreements and not through permit conditions.*

The information provided in the application is based upon the last comprehensive energy audit in 1999. This was part of a DETR study into energy efficiency at Corus' major plants. At that time Llanwern was a fully operational integrated site. Only part of the supplied information remains relevant to current operations.

Comparison of the site's energy performance for current activities using the 1999 figures indicators indicate that the Hot Strip Mill and Pickling processes operate in excess of mean IISI energy requirements. Up to date information is not available to be able to assess current performance against IISI benchmarks. Since 1999 there have been significant changes on site including the installation of a new package boiler plant. While the impact of these changes cannot be defined the permit requires annual

reporting for total energy consumption (Form E1). This will provide sufficient information to assess year on year performance.

Corus has entered into a negotiated agreement with the Government under the terms of the Climate Change Levy Agreement (UKSA/CORUS/002). Consequently the Agency cannot consider energy issues specific to the process within the installation. At Llanwern responsibility for energy management falls to the Energy and Environment Dept. that is accredited to ISO14001. Company procedures include monthly reporting of energy consumption that is provided to ISSB.

Table 2.7.1 accepts the information contained in the application. Additional conditions have been included in the permit:

Condition 2.7.2 is included to ensure that the Operator notifies the Agency should the installation fall out of the negotiated agreement. The Agency would then consider imposing conditions to achieve the objectives of the Governments strategy on climate change.

Condition 2.7.3 is included to ensure an up to date energy management plan is maintained by the site and available for inspection by the Agency.

KPI's have been included as a reporting requirement to enable year on year comparison of CO2 releases per tonne of steel processed.

#### **Condition 2.8: Accidents**

*Regulation 11 requires the consideration of appropriate conditions to secure "the necessary measures are taken to prevent accidents and limit their consequences".*

The Operator has described the fully documented systems implemented at Llanwern designed to identify and prevent accidents with potential environmental consequences. These are a SMS, EMS and works major emergency procedure. The most likely uncontrolled risk to the environment would arise from spillage or escape of oils/chemicals through failure of the effluent treatment system and discharge to the Severn Estuary. An early inspection topic should be examination of the company procedures for dealing with such an incident and confirmation that appropriate up to date hazard/risk assessment has been carried out.

An additional condition (2.8.2) has been included in the permit to ensure that in-house procedures are maintained and subject to annual review.

Permit table 2.8.1 is self explanatory and there are no additional conditions.

#### **Condition 2.9: Noise and Vibration**

*Noise is defined as an emission in the Regulations and therefore BAT should be used to prevent or reduce noise and vibration.*

The application includes a noise survey. This indicates that installation generated sound levels (>50dB as specified in Sector Guidance) are largely contained within the site boundary. The area of exception is Bishton Village located to the north of the

installation. Additional receptor noise level assessment studies, at four specific locations conducted in June 2002, indicated at Bishton Village a daytime Leq value of 62dB and night time Leq value of 59dB. Both values are in exceedance of the Sector Guidance standards of 50 and 45dB respectively. The other survey points also indicated exceedances. It is noteworthy that these measurements were recorded post decommissioning of the steelmaking activities and in most cases, at points reported to fall within areas of lower ambient noise levels, according to the original report.

There is a history of noise complaints, however, these primarily relate to the previous integrated works. Since steelmaking operations were ceased and in the period prior to IPPC application only one noise complaint was recorded.

Corus stated an intention in the application to carry out a further monitoring exercise to determine background noise levels during a plant shut down. This information was provided on 3/11/03. The results indicated that the noise levels at the same four points varied compared with the original survey. Some levels were increased while others decreased. The differences were not significant but the results served to confirm that at two locations the values remain above the indicative BAT levels of 50dB for day time.

An annual measurement regime is proposed to identify any significant changes in noise levels resultant from plant configuration changes and operational practices. These measures should be sufficient to enable quantification of noise related problems and have been included as Improvement Item 9.5, together with the requirement to identify and implement agreed measures to rectify any continuing exceedance of noise standards (II9.9).

Condition 2.9.2 has been included in the permit to ensure a noise and vibration management plan is maintained by the Operator. This is intended to ensure noise issues receive appropriate ongoing attention and any complaints are dealt with in a consistent manner.

Permit table 2.9.1 is self explanatory and there are no additional conditions.

#### **Condition 2.10: Monitoring and Sampling**

*Regulation 12(9)(f) requires consideration of appropriate conditions to address "emission monitoring requirements specifying measurement methodology, frequency and evaluation procedure". Conditions 2.10.2 and 2.10.3 set standard requirements for provision of access to sampling/monitoring points for the Agency. These conditions are considered to be appropriate in terms of this Regulatory requirement.*

The application includes the monitoring of releases from the process to air and water.

The Operator has provided detailed information in respect of emissions sources, guidance specified monitoring frequency and actual frequency for all current determinands. Where non compliance with the guidance is identified justification for the current approach is provided. In consideration of the reliance upon natural gas for the furnaces and boiler plant and the steady operation of such plant the adoption of continuous monitoring for NOx is considered an excessive requirement. The reheat

furnaces are normally operated considerably below their maximum output and NO<sub>x</sub> levels that approach those expected for low NO<sub>x</sub> burners are achieved. Emissions of SO<sub>x</sub> are expected to be trivial while operating on natural gas. To restrict SO<sub>x</sub> levels during periods of operation on gas oil the sulphur content has been restricted to 0.2%w/w. As a direct consequence of this and the likely insignificant use of gas oil SO<sub>x</sub> monitoring is not considered to be necessary.

The significance of the release points, Annealing Bay vents and Meibach Welder stack, have not been quantified previously. However, Corus have provided a written confirmation that annealing activities will be not be carried out after November 2003 (letter received 24/11/03 from Corus). For this reason reference to annealing activity and the associated release points was not included within the permit. The Meibach welder is operated on an intermittent basis (welding of steel strip to form a continuous strip for cold rolling) and the emissions to air are considered trivial (Email from Steve Thomas 3/11/03). A fabric filter abatement unit is fitted which represents BAT, the benchmark release levels are therefore 5mg/m<sup>3</sup>. It has been incorporated into the permit as a release point to ensure abatement plant performance is maintained, however, monitoring is only required on an annual basis in acknowledgement of the low significance of the release. There is also poor quantification of the releases from the Pickle line roof extraction and Cold Mill oil mist vent. An Improvement Item (9.9) has therefore been included to quantify these releases before the standard BAT ELV's are adopted.

#### **Condition 2.11: Decommissioning**

*The Regulations require consideration of appropriate conditions in terms of steps to be taken after the definitive cessation of operations at the installation (Regulation 12(9)(d)) and steps that will help to ensure that "upon the definitive cessation of activities the necessary measure are taken to avoid any pollution risk and to return the site of the installation to a satisfactory state" (Regulation 11).*

The Operator has described the site procedures in place to avoid deterioration of the site during normal operation. These include monitoring programmes and the continuous review and assessment procedures. Specific examples were cited related to the procedures developed for dealing with decommissioning of PCB containing equipment and asbestos removal. Adequate justification was provided for not formulating detailed site closure plans prior to such announcements. Instead the approach adopted has been to develop a 'site closure environmental toolkit' that would be used by all employees. This incorporates a site closure checklist that identifies the environmental issues to be taken into consideration .

At this time it is not appropriate to consider any further measures in the absence of specific closure plans and no further conditions are considered necessary at this time.

#### **Condition 2.12: Consideration of Multi Operator Installations**

*Where there is more than one operator in an installation it may be appropriate to set additional conditions to secure the satisfactory operation of the installation as a whole.*

The Operator is the only permit holder within the installation boundary. Air Products hold a PPC permit (BL2459) for hydrogen production that is carried out on an adjacent area and effluent from this activity enters the Corus mild effluent system. However, the contribution Air Products make to the total effluent discharge is insignificant and was considered at the time of the Air Products application..

### **B3: Part 3 – 5 of the Permit**

#### **General Note**

*Parts 3 to 5 of the permit contain mainly standard conditions on records, reporting and notification. There are no specific application questions on these subjects so no assessment of the application is recorded in this part of the decision document.*

#### **Condition 3: Records**

*Effective record keeping is considered to be one of the management techniques for emission prevention and control. The permit contains standard conditions (3.1.1 to 3.1.7) for record keeping which are all considered to be appropriate BAT conditions, in this respect.*

A requirement to report KPI's for water, oil, waste disposal, CO<sub>2</sub> and NO<sub>x</sub> has been included in the permit to enable year on year comparison of performance per tonne of steel processed. Separate KPI's are required for the three main activities: hot rolling, cold rolling and galvanising (Zodiac). There are no additional non-standard conditions included in the permit.

#### **Condition 4: Reporting**

*Regulation 12(9)(f) requires consideration of appropriate conditions in respect of the reporting of monitoring results. The permit contains standard reporting conditions which are considered appropriate in this regard.*

There are no additional non-standard conditions included in the permit.

#### **Condition 5: Notification**

*Regulation 12(9)(f) requires consideration of appropriate conditions for notification of incidents or accidents which may cause significant pollution. The permit contains standard notification requirements which are considered appropriate in this regard.*

There are no non-standard conditions included in the permit.

### **B4: Parts 6 – 10 of the Permit**

#### **General Note**

*Part 6 of the permit contains conditions which are ELVs for the purposes of the Regulations and Part 9 is the improvement programme. The substance of the*

*rationale for these two sections may appear more fully in section B2.3 above. Part 8 allows for the imposition of off-site conditions.*

### **Condition 6: Emissions**

*The Regulations require PPC permits to contain emission limit values for emissions based on BAT, the technical characteristics of the particular installation, its geographical location and the local environmental conditions. Analysis of the techniques which are being permitted for this installation on the basis of BAT is contained in Section B2 (and particularly B2.3), of this document. The ELVs imposed in Section 6 of the permit are based on the techniques considered to meet the requirements of the Regulations, however the Agency's assessment of the applicant's environmental assessments carried out in response to questions B3, 4 and 5 is also key to determining BAT for both the ELVs and the underpinning techniques. ELVs (and potentially other conditions) may also be affected by other legal requirements, which are also assessed below. (See also the General Note to Part 2).*

### **PPC Environmental Assessment**

#### **6.1 Emissions to air**

Following a programme of extensive decommissioning since the time of application the emissions to air from the activities on site have decreased substantially and many release points are no longer functional. The current key release points relate to the reheat furnaces and package boilers. Other release points of less significance relate to the cold rolling and galvanising processes. Table 6.1.2. sets emission limits for the key pollutants released to air from all the permitted release points.

The reheat furnaces and package boilers operate on natural gas, with back up oil for the latter. The package boilers are new plant while the reheat furnaces were converted to natural gas following decommissioning of steelmaking activities on site. Although the reheat furnaces do not incorporate low NO<sub>x</sub> burners, the performance is in line with benchmark levels for low NO<sub>x</sub> burners in the Hot Rolling Guidance S2.04. Consequently 400mg/m<sup>3</sup> has been set as the ELV. The package boilers have been shown to operate consistently and can meet much lower NO<sub>x</sub> values. Consequently limits of 140 for natural gas and 200 for gas oil have been set in line with the previous IPC limits. To restrict SO<sub>x</sub> emissions when firing on oil on the package boilers a limit of 0.2%w/w on the sulphur content has been set. This will be reduced to 0.1% from 1<sup>st</sup> January 2008.

The Zodiac furnaces (previously regulated by the local authority), in combination rated at 21MW, and for which typical monitoring data is not available, has been assigned an ELV in accordance with the requirements for the package boilers (140mg/m<sup>3</sup> NO<sub>x</sub>). Corus provided indicative values for NO<sub>x</sub> releases in Email dated 3/12/03 of ~120mg/m<sup>3</sup>.

All furnaces and boilers a requirement to monitor CO emissions has been included in the permit. No ELV's have been cited. The data will provide an indication of whether or not optimum combustion conditions have been set and also enable more accurate ISR reporting.

ELV's have been set in accordance with the guidance S2.04. For HCl from the pickle line stacks the guidance value is  $10\text{mg/m}^3$ , however reported releases are considerably below this and the IPC ELV was 5, this has therefore been retained. For oil mist from the cold mill vent the guidance ELV of  $15\text{mg/m}^3$  has been set (this comes into effect after II 9.9 is completed). Particulate ELV's for the three Zodiac stacks have been set in accordance with the guidance for the installed abatement equipment,  $5\text{mg/m}^3$  for fabric filters and  $50\text{mg/m}^3$  for wet scrubber.

With reference to consideration of the obligation under EA95 S81 the described process is considered to present no significant impact upon the National Air Quality Strategy.

The ELV's set in section 6 are in line with existing guidance for the process (PPC Sector Guidance Note S2.04). This demonstrates that the overall process satisfies the principles laid out in R11 (2).

An updated version of the initial air dispersion modelling was provided (letter dated 24<sup>th</sup> March 2002), this included the newly commissioned package boilers. Subsequent to this there have been further changes on site, especially the cessation of annealing activities. This will have the effect of reducing further the overall emissions from the installation. The modelled scenario is therefore expected to over predict the ambient pollutant concentrations. The overall approach to the dispersion modelling was satisfactory. This includes the software used, use of appropriate met data, input parameters and use of worse case scenarios. In addition account was taken of the potential for firing with natural gas or diesel oil on the package boilers. When initial modelling results indicated not insignificant impact then variable gridded outputs were determined to enable a more comprehensive assessment of affects over a wider area.

The following conclusions were reached in respect of emissions to air:

**NO<sub>x</sub>**

It is unlikely that either the long term or short term NO<sub>2</sub> EQS's will be exceeded as a direct result of emissions from the installation. Also the environmental impact of NO<sub>x</sub> emissions is not significantly affected by the package boiler fuel.

**SO<sub>x</sub>**

Short term PC's at all sensitive receptor sites are less than 1% of the EQS for natural gas firing. When all three boilers are simultaneously fired on diesel oil PC's were slightly in excess of the 1% level. However, further assessment indicated that neither the short term or long term EQS's would be breached in the vicinity of the installation. In addition this firing scenario was extremely unlikely.

**PM<sub>10</sub>**

Average PC's at all sensitive receptors were less than 1% of the EQS levels.

**CO**

Average PC's at all sensitive receptors were less than 1% of the EQS levels.

**HCl**

Long term PC's at all sensitive receptors were less than 1% of the EQS levels. Short term levels were 1.5%. However, in the absence of background data PEC's were not calculated and the emissions were considered trivial.

**Oil mist**

Average PC's at all sensitive receptors were less than 1% of the EQS levels.

Overall the dispersion modelling was considered adequate and due to the low significance of the emissions detailed assessment by AQMAU was considered unnecessary.

Improvement item 9.6 has been incorporated to ensure Corus assess the requirements of the LCPD and complete necessary actions to ensure compliance by the deadline of 27/11/2004.

## 6.2 Emissions to water

The only discharge point included in the permit is W1 (mild effluent discharge). Detailed assessment of the discharges from Llanwern to the Severn Estuary have been undertaken (Brixham Environmental Lab. Report June 2003). In addition an ecological reconnaissance has been undertaken of the area near the discharge point in the Severn Estuary (Brixham Environmental Lab. Report May 2003).

The first report indicates that none of the designated sites will be exposed to concentrations of discharged species in excess of the EQS values. Assessments in close proximity of the outfall indicated that concentrations for NaOH, sulphide and hydrocarbon oil exceeded EQS values over limited areas. However, model input values were at the ELV levels and these are rarely reached. The second report indicates that there are no conspicuous differences between the species composition of biotopes with increasing distance from the Corus outfall.

In consideration of these findings ELV's have been set at BAT guidance levels for oil and relevant metals. The only exception to this is for suspended solids. Historically these were not reported under IPC and indicative values cover a wide range (3-500mg/l). Improvement Items 9.12 and 9.13 have been included to review effluent treatment and as part of this the options for achieving BAT with respect to suspended solids will be assessed. In the meantime suspended solids will be required to be reported but the ELV of 100mg/l selected to reflect the historic performance as an interim measure. In view of the typical suspended solids in the receiving water (~3000mg/l) this is considered a proportionate and low risk approach. The requirement for continuous monitoring of discharge flow rate, pH and surface hydrocarbon oil is retained. There is considered to be scope for a considerable reduction in total hydrocarbon oil releases and it is the intention to adopt an ELV that reflects BAT (5mg/l) following completion of II's 9.12 and 9.13. As an interim measure an ELV of 15mg/l will be adopted, this is reduced from the IPC ELV of 32mg/l. Other derminands are required to be monitored on a composite weekly basis. The maximum flow rate in dry weather has been rounded down to the nearest thousand cubic metres. It is expected that this would be reduced further following completion of Improvement Items 9.10 and 9.12.

Under the IPC permit species have been reported that are no longer generated from current activities on site, for example ammonia, phenol, free cyanide and benzene. In consideration of the historic activities on site and that levels of these constituents continue to be in excess of background concentration it is appropriate that they are continued to be reported. However, as there is no means for controlling their levels

ELV's have not been set. The frequency of monitoring for these species is decreased to monthly in consideration that they are not a direct result of current activities.

#### Waste Management Licensing Regulations 1994

*The "relevant objectives" of the 1994 Regulations will apply to any PPC installation which involves the recovery or disposal of controlled waste within the meaning of the Regulations.*

The application identifies waste streams that are either treated on site for subsequent reuse on site or off site, temporarily stored on site for subsequent treatment off site or directly disposed to landfill. Concern remains over the disposal route for oily mill scale in the light of significant problems with the proposed treatment plant at Port Talbot, hence the inclusion of Improvement Items 9.2 and 9.4.

#### The Conservation (Natural Habitats etc) Regulations 1994

*These Regulations impose various requirements in respect of the consideration of the impact of any proposals on a European site.*

The impact of the installation in terms of the Habitats Directive has been assessed separately by the Agency using information provided the Operator. This assessment has been commented on by CCW who have sought further clarification on specific aspects. These comments are being addressed. It is considered by the Agency that the installation will not have a significant impact on the relevant sites.

#### Consideration of a relevant environmental statement

*The Regulations require consideration of "relevant information obtained or conclusion arrived at pursuant to Articles 5,6 and 7 of the EA Directive".*

No environmental statement has been required.

#### **Condition 7: Transfer to Effluent Treatment Plant**

*The use of an ETP will be one of the operating techniques for emission prevention and control. The applicant's proposals concerning any ETP will have been assessed under condition 2.3 above. However, additional specific conditions concerning transfers to ETPs may be included here.*

There are no additional conditions.

#### **Condition 8: Off-Site Conditions**

*Regulation 12(12) allows for the imposition of off-site conditions, subject to compensation in accordance with the provisions of Schedule 6.*

No off-site conditions are considered to be necessary although there is the requirement to undertake annual noise monitoring at sensitive receptor locations to the north of the site (Improvement Item 9.5)

### **Condition 9: Improvement Programme**

*In the case of existing installations which are considered to meet the requirements of the Regulations at this time but which require improvement in the future in order to continue to meet the requirements over time, the use of improvement conditions will be appropriate.*

The following improvement conditions have been included:-

9.1 A recent bund audit identified areas for improvements. This improvement item will ensure the necessary remedial work is carried out.

9.2 The proposed transfer of oily mill scale to Port Talbot for treatment and reuse is now considered unlikely to happen due to problems with newly installed plant. Only temporary storage is available at Llanwern. It is important to identify alternative disposal/treatment/reuse options for current and historic arisings.

9.3 Detailed plans required to complement Site Condition Report.

9.4 Further additions of oily mill scale to Lagoon 27 are to cease and alternative storage facilities established or the material removed off site.

9.5 Noise survey work has previously been undertaken but indicated that areas remain where noise levels exceed the guidance. Further work is necessary to clarify if there is a potential noise problem and if necessary action taken to resolve the issue.

9.6 Operator to identify the requirements of the LCPD and complete necessary actions to ensure compliance.

9.7 The amount of waste generated by the site is significant. In an attempt to reduce this a waste minimisation audit will be undertaken to identify areas for improvement and ensure disposal techniques are the most appropriate. Annual updates are also required.

9.8 Effect agreed improvements to meet Sector Guidance noise requirements.

9.9 Quantify releases from A8 and A9.

9.10 Water usage on site is significant. To ensure efficient water utilisation a water efficiency audit is required.

9.11 To ensure the integrity of the site drainage system is maintained and thereby minimise releases to ground a survey is to be undertaken of those drains identified as high risk.

9.12 Current effluent treatment needs to be reviewed against BAT. Improvements may be necessary to effect reductions in suspended solids and minimise risk of water discharge with unacceptable oil levels.

9.13 Adopt revised total hydrocarbon oil and suspended solids ELV's.

### **B5: Other Requirements That May Lead To The Imposition of Conditions**

#### **General Note**

*Certain other legislative requirements need to be assessed and may lead to the imposition of conditions. These are recorded below.*

#### **Secretary of State Directions relating to Directives**

*A Direction has been made under the PPC Regulations by the Secretary of State in order to require the Agency to comply with Directions that have been made under EPA 90 S7(2)(b), for the implementation of community environmental obligations.*

No Directions apply to the installation.

#### **Environment Act 1995 – Section 4 (Pursuit of Sustainable Development)**

Consideration regarding the need for any additional requirements in terms of the Agency's duty to contribute to sustainable development under S4 EA95 concluded that existing requirements are sufficient and no other appropriate conditions have been identified. The Operator is required to complete waste minimisation, water efficiency audits and assess alternative disposal/reuse options to assist with sustainable development. In addition the incorporation of KPI's will enable year on year performance to be monitored.

#### **Environment Act 1995 – Section 7 (Pursuit of Conservation Objectives)**

Consideration regarding the need for any additional requirements in terms of the Agency's duty to contribute to the various conservation objectives set out in section 7 EA95 concluded that existing requirements are sufficient and no other appropriate conditions have been identified.

#### **Human Rights Act 1998**

*The Act requires that decisions of public authorities such as the Agency do not breach the Human Rights of any person.*

Consideration has been given to whether or not the decision to grant a permit and impose conditions, may result in a breach of someone's "right to respect for private and family life" (Article 8).

Members of the public have made no representations on matters such as traffic nuisance, noise, and amenity or house values, which suggest there are no effects on their private or family life as a result of the proposal.

Any comments made by the Applicant with respect to the draft permit have been taken into consideration.

#### **Countryside and Rights of Way Act 2000**

Consideration has been given as to whether any additional requirements should be imposed in terms of the Agency's duty to have regard to and take reasonable steps to further the conservation and enhancement of areas of outstanding natural beauty and SSSI's respectively. Existing requirements are considered to be sufficient in this regard and no other appropriate requirements have been identified. It is considered that the proposals are unlikely to cause damage to the special features of any SSSI's and therefore specific consultation with CCW is unnecessary.

## PART C - CONCLUSION

The Environment Agency will grant a Pollution Prevention and Control Permit to Corus on December 2003 in exercise of its powers under Regulation 10 of the Pollution Prevention and Control Regulations 2000 (S.I. 2000 No. 1973).

The application to operate a process for rolling and processing of steel will be authorised subject to conditions which secure BAT, namely the satisfactory completion of the improvement programme detailed in this document, and following satisfactory assessment of the application details against the indicative BAT requirements given in the IPPC General Sector Guidance or other relevant Technical Guidance.

For emissions to air, limits have been set which generally comply with the industry Guidance. For emissions to water, the same applies except that a higher suspended solids ELV has been set.



**Gareth Richards**  
**PIR/RSR Officer**  
**18 March 2004**



**Andrew Johnson**  
**Team Leader PIR/RSR**  
**18 March 2004**

## PART D - APPENDIX

| Table of representations received and responses |                                                                                                                                                                                           |                                                                                                    |                                         |
|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|-----------------------------------------|
| Consultee                                       | Received representation                                                                                                                                                                   | Response Given                                                                                     | Means                                   |
| Country-side Council for Wales                  | Magor Marsh should be included in SSSI assessment zone, requested clarification of terminology used for water emissions assessment and threshold for 'significant' atmospheric emissions. | Comments considered in respect of CROW and Habitats assessment. The former was deemed unnecessary. | Submission of Habitats Assessment form. |
| National Assembly Wales                         | General criticism of digging methodology adopted on site, suggested typing error in                                                                                                       | No response made as not considered to be substantive issues.                                       | Site report subject to detailed         |

|  |                                                                                                                                                    |  |                       |
|--|----------------------------------------------------------------------------------------------------------------------------------------------------|--|-----------------------|
|  | dispersion modelling table and comment related to the omission of SO <sub>2</sub> modelling data despite acknowledgement that values would be low. |  | assessment by Agency. |
|--|----------------------------------------------------------------------------------------------------------------------------------------------------|--|-----------------------|