

Tata Steel UK Ltd Port Talbot Steelworks

Decision Document

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2. Variation of a Bespoke Permit

2.1.1.1.

- a. **The variation application number is:** EPR/BL7108IM/V016
- b. **The Operator is:** Tata Steel UK Ltd
- c. **The Installation is located at:** Port Talbot Steelworks, Port Talbot, Neath Port Talbot, SA13 2NG.

We have decided to issue the variation for Port Talbot Steelworks operated by Tata Steel UK Ltd.

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.

NRW is also satisfied that this decision is consistent with its general purpose of pursuing the sustainable management of natural resources in relation to Wales and applying the principles of sustainable management of natural resources.

3. Purpose of this document

This decision document:

- a. explains how the application has been determined
- b. provides a record of the decision-making process
- c. shows how all relevant factors have been taken into account
- d. justifies the specific conditions in the permit other than those in our generic permit template.

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

Unless the decision document specifies otherwise we have accepted the applicant's proposals.

Key issues of the decision

4. Background to the Variation

The variation application requested a number of changes be made to the installation's EPR permit; specifically that derogations for meeting Best Available Techniques (BAT) be extended for:

- a. The requirement to install a secondary de-dust system for the Sinter Plant exhaust gases for abatement of particulates
- b. The requirement to install coke oven gas (COG) de-sulphurisation at the coke ovens
- c. The requirement to meet 20.00 mg/l suspended solids on the primary works effluent emission point to Swansea Bay.
- d. and that a facility be incorporated into the installation permit to allow the processing and recovery of inert waste materials to recognised standards at which they would no longer be considered waste and therefore could be re-used onsite or sold offsite as aggregates (HAA).
- e. Also incorporation of a waste treatment facility into the installation permit to allow processing of ferrous wastes and by-products from iron and steelmaking activities (Yard Zero).

At the HAA one of the principle waste types, slag, is treated to produce aggregates. Other steelworks wastes are also accepted and mechanically treated for recovery. The HAA is used not only for the processing of site generated wastes to aggregates for use internally to the installation but is also permitted to accept designated wastes from outside the installation. The HAA activity is then permitted to then process or treat internal and external waste to various quality protocols, to allow the now recovered waste materials to be sold as aggregates. By capturing this as a 5.4 A(1)(b)(iii) activity, we have taken the opportunity to more accurately reflect the waste treatment activities undertaken at Tata Steel within the permit.

Yard Zero is a waste processing activity involving treatment of iron-rich (ferrous) wastes for recycling (as pellets) within the steel making process at the installation.

The Operator also requested that the permit be consolidated, principally in order to remove and/or update legacy tables relating to emissions limits that no longer apply or have changed, but also to correct some errors or inconsistencies in various sections of the permit, including the addition of several waste streams to the permit to allow their acceptance from external sources. These are discussed further in section “**10. Waste Types**” below.

5. Operator

We are satisfied that Tata Steel UK Ltd (the Operator) will have control over the operation of the HAA and Yard Zero areas of the installation after the issue of this variation. The decision was taken in accordance with EPR RGN 1 “Understanding the meaning of Operator”.

6. The Regulated Facility

The Installation is subject to the EPR because it carries out an activity listed in Part 1 of Schedule 1 of the EPR:

- a. 1.1 A(1)(a) – Burning of any fuel in an appliance with a rated thermal input of 50 or more megawatts
- b. 1.2 A(1)(a) – Refining gas where this is likely to involve the use of 1000 or more tonnes of gas in any 12 month period
- c. 2.1 A(1)(a) – Roasting or sintering metal ore, including sulphide ore or any mixture of iron ore with or without other materials.
- d. 2.1 A(1)(b) – Producing, melting or refining iron or steel or any ferrous alloy, including continuous casting, except where the only furnaces used are –
 - (i) Electric arc furnaces with a designed holding capacity of less than 7 tonnes, or
 - (ii) Cupola, crucible, reverberatory, rotary, induction, vacuum, electro-slag or resistance furnaces.
- e. 2.1 A(1)(c) – Processing ferrous metals and their alloys by using hot-rolling mills with a production capacity of more than 20 tonnes of crude steel per hour
- f. 2.1 A(1)(d) – Loading unloading or otherwise handling or storing more than 500,000 tonnes in total in any 12 month period of iron ore, except in the course of mining operations, or burnt pyrites
- g. 2.1 B(c) – Desulphurising iron, Steel or any ferrous alloys
- h. 2.3 A(1)(a) – Surface treating metals and plastic materials using electrolytic or chemical process where the aggregated volume of the treatment vats is more than 30m³.
- i. 3.5 B(b)(iii) – Loading or unloading petroleum coke, coal, coke or any other coal product except unloading on a retail sale.
- j. 5.3 A(1)(a)(i) – Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving biological treatment
- k. 5.3 A(1)(a)(ii) – Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving physico-chemical treatment

In this application the Operator has also requested the addition of the following activity:

- l. 5.4 A(1)(b)(iii) – Recovery or a mix of recovery and disposal of non-hazardous waste with a capacity exceeding 75 tonnes per day involving the treatment of slags and ashes

This 5.4 A(1)(b)(iii) activity relates to HAA in that it is capable of treating over 75 tonnes per day of slags and ashes in addition to other wastes.

An installation may also comprise “directly associated activities”, which at this Installation includes:

- m. CAPL (Continuous Annealing Process Line)
- n. Cold rolling
- o. Storage of intermediate waste products

In our determination of this application, we also consider that the following activities are Directly Associated Activities and have added them to Table S1.1. of the Permit accordingly:

- p. HAA Waste Transfer Station with Treatment (non-slugs and ashes waste types as specified in Table S2.4 of the consolidated Permit)
- q. Yard Zero waste processing activity involving treatment of iron-rich wastes (specified in Table S2.5 of the consolidated Permit) for recycling within the steel making process.

As well as processing and recovering slags and ashes, the HAA is permitted to accept other waste types which are processed and recovered using the same plant. However as the EPR 2016 limits the 5.4A(1)(b)(iii) activity to the treatment of slags and ashes only, it has been necessary to permit the other non-slugs and ashes waste types accepted by the HAA as a Directly Associated Activity (DAA). This more accurately reflects the scope of waste treatment activities undertaken at Port Talbot Steelworks.

7. Extent of the Site of the Facility

The operator has provided an updated plan which we consider is satisfactory, showing the extent of the site of the facility, including the location of the part of the installation to which this permit applies on that site. The plan has been amended to show the location and extent of the HAA and Yard Zero areas. In addition, as a multi-operator installation there are several activities carried out on the installation by Operators with their own permits. As part of this variation and consolidation application it has been noted that since the previous iteration, Industrial Chemicals

Ltd have taken over the effluent treatment plant listed activity and Runtech Ltd have taken over a scarfing DAA at the installation. This has been reflected in the Schedule 7 Site Plan of the consolidated permit. Finally, for clarity, the green boundary line represents the extent of the entire Tata installation.

8. Biodiversity, Heritage, Landscape and Nature Conservation

HRA is not required because there is no conceivable impact pathway to any Natura 2000/Ramsar site

The project has been screened for likelihood of significant effects and, taking account of the advice received from protected sites advisors, is considered not likely to have a significant effect on any Natura 2000/Ramsar site.

9. Environmental Risk

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

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

The HAA has been present at the site for a number of years as a facility for the re-processing and recovery of various materials that are produced during the steelmaking process and would otherwise be discarded either to landfill or to external recovery operations. "HAA" is not an acronym, but rather an informal term for the area that once was used for parking train wagons of that name. Since this area has been used to re-process aggregates, the products have been re-used within the steelmaking process with the resultant wastes being sent to the Tata Steel managed landfill site adjacent to the works.

In this application Tata Steel have requested that the facility be permitted as its own activity following changes to the Environmental Permitting Regulations (EPR) and to allow products of the facility to be sold external to the installation.

The facility is to be managed in line with the Tata Steel ISO 14001 accredited Environmental Management System (EMS) already in place on the installation. The facility will implement Factory Production Control protocols and accept non-hazardous materials into an area specifically demarked in Schedule 7 of the permit. The output from the facility eligible to be sold to third parties outside the installation boundary shall only be materials described either in the WRAP Quality Protocol “Aggregates from Inert Waste” or from the Environment Agency “Aggregate from waste steel slag: quality protocol”. The Operation of this facility shall be conducted in line with the most recent revision of either or both of these two documents.

The key environmental considerations taken into account during the determination of the granting of a permit for this Facility include:

9.1. Ground conditions

The site consists of a stable hard standing area of made ground which extends to a depth of 7 metres. The wastes to be accepted at the facility will be non-hazardous and effectively inert. Furthermore the made ground itself consists predominantly of these materials as by-products from the steelmaking process have been used for aggregate around the site for decades. Additionally the materials have been processed in the area as part of the Installation’s activities for several years. Hence the addition of this activity to the installation permit is not judged to add any detriment to the ground conditions at the facility

9.2. Groundwater

Below the made ground on which the HAA facility is to take place is a clay stratum which acts as an aquitard limiting vertical mobility. The area is not within a Source Protection Zone.

Having considered the application we are satisfied that the proposed activities at the HAA will not pose significantly greater risk to groundwater.

9.3. Emissions to water

In close proximity to the HAA site are several surface water ditches, the courses of which have been modified by development of the steelworks. Currently these shallow ditches drain to the BOS plant reservoir where the water source is used only by the steelworks.

Nearby sensitive aquatic receptors are hydraulically upstream of the HAA site. Downstream, the integrated works effluent system both chemically and physically processes all effluent to discharge standards monitored as part of the existing EPR permit conditions and emission limits.

Having considered the application we are satisfied that emissions to water will be sufficiently managed to prevent any further damage to the aquatic environment.

9.4. Emissions to air (including fugitive emissions)

The HAA facility is 1.4km from the Port Talbot Air Quality Management Area. As such, an air quality monitoring network is already in place. The monitoring programme and results are evaluated in accordance with the Air Quality Management Plan already required by the steelworks installation permit.

The principal pollutant of interest in terms of releases to air is particulates from materials movements and combustion of plant fuel. As part of the integrated works permit it will be subject to scrutiny against air quality objectives.

As such it is proposed that each plant will be fitted with dust suppression. Additional misters and bowsers shall be deployed, including during high wind speed events and times of high thermal ground disturbance during the summer. Furthermore, stockpiles will be managed such to minimise movements and therefore particulate lift off during loading and unloading activities. Daily inspections will be carried out to ensure the minimisation of dust releases.

Having considered the controls in place and those proposed, we are satisfied that the proposed activities will be sufficiently controlled.

9.5. Waste creation

The HAA facility will be a waste recovery operation. Various additional materials in the accepted waste such as wood, metal and plastic will be separated for recovery or disposal either at the Tata Steel owned landfill sites or at an appropriately permitted facility off-site.

Having considered the information submitted in the Application, we are satisfied that the waste hierarchy referred to in Article 4 of the WFD will be applied to the generation of waste and that any waste generated will be treated in accordance with this Article.

We are satisfied that waste from the Installation that cannot be recovered will be disposed of offsite using a method that minimises any impact on the environment. Permit condition 1.4.1 will ensure that this position is maintained.

9.6. Noise and vibration

The generation of noise and its impact has been assessed within the context of the integrated works and the risk deemed to be low. All plant used is designed to meet current legislative standards for noise and vibration. Plant will also be subject to

preventative maintenance and subject to the integrated works Noise Management Plan (NMP). We are satisfied that the HAA facility will be controlled in line with the NMP.

10. Waste Types

The Operator has requested the addition of a schedule 1 activity to their permit to allow them to process and recover wastes both generated on site and wastes from outside the installation that they have the technology to recycle or recover. They have also requested the addition of several List of Waste (LoW) codes to those permitted to be received into the installation for which they have the technology to recycle or recover. These additional waste codes include the following List of Waste codes;

- a. 12 01 02 – Ferrous metal dust and particles
- b. 15 01 04 – Metallic Packaging
- c. 12 01 17 – Waste blasting material other than those mentioned in 12 01 16
- d. 19 10 01 – Iron and steel waste
- e. 19 10 02 – Non-ferrous waste
- f. 19 12 02 – Ferrous metal
- g. 19 12 03 – Non-ferrous metal
- h. 20 01 40 – Metals

All the above waste codes are non-hazardous wastes many of which are already produced on the site. The installation is currently permitted to accept both hazardous and non-hazardous wastes including materials from Chapter 10 of the List of Wastes, hence it was decided that additional non-hazardous waste metallic waste materials would not increase the risk to the environment posed by the installation.

Furthermore the Operator has requested the addition of several hazardous waste codes for which they have the technology to recover. These hazardous waste codes are:

- i. 05 06 03* – Wastes from pyrolytic treatment of coal (other tars)
- j. 13 05 06* – Oil from oil/water separators

Additional information received 19th December 2017 from Tata Steel provides evidence that the Coal Tar (05 06 03) is a product that is generated on-site and subsequently sent off-site for treatment. The Operator is requesting that this treated

waste then be allowed to be accepted back into the facility for use in cokemaking. Furthermore the evidence explains that the material received at Port Talbot will be accepted under waste management processes for the transfer of hazardous wastes and referenced in the Morfa Coke Ovens Waste Management Plan. The process of recovering this waste material through carbonisation is well established and is considered to align with the “recover” element of the waste hierarchy. The handling and storage of the material as proposed is deemed acceptable on the basis that firstly the installation handles and stores similar materials which are managed within the boundaries of the installation, and secondly the installation operates an Environmental Management System accredited to ISO 14001, and have procedures in place to appropriately manage wastes of this nature.

Additional information received 19th December 2017 from Tata Steel provides a description of the handling of oil from oil/water separators (13 05 06). The waste is widely generated onsite and is recovered onsite. The addition of this waste stream to the installation permit will allow Tata Steel to accept this waste onto site. It is deemed acceptable as the material is widely generated, handled, stored and recovered for use within the installation already; and thus as a requirement of the installation’s accreditation to the Environmental Management System Standard ISO 14001, must have controls in place to ensure the material is handled and stored in line with applicable legislation.

Additional information was also provided on 19th December 2017 requesting the addition of “16 05 09 – discarded chemicals other than those mentioned in 16 05 06, 16 05 07 or 16 05 08”. The material Tata Steel wished to add is ABC powder from fire extinguishers. This waste has not been incorporated into the varied permit as no evidence has been provided for the storage, handling or proposed method for disposing of the waste onsite. It is understood that this waste is generated onsite but disposed of outside the installation boundary.

Wastes accepted by the HAA and Yard Zero areas are limited to non-hazardous waste types only. The permit has been amended by the addition of three new waste tables (S2.3, S2.4 and S2.5) which show which waste codes can be accepted by the HAA 5.4 A(1)(b)(iii) activity, the HAA directly associated activity and Yard Zero respectively. Finally the 300,000 tonne storage limit for the HAA in Table S1.1 applies to the combined total permissible amount of slags and ashes waste codes and non-slags and ashes waste codes that can be stored in the HAA area.

11. Improvement Conditions

Based on the information in the application, we consider that we need to impose the following improvement conditions:

IC16 requires the operator to:

“undertake a review of the wastes described in Schedule 2 Table 2.2 to clarify which of the wastes are accepted into a scheduled activity within the installation and which are produced within the installation and subsequently exported out of the permitted boundary with a view to consolidating table 2.2 to describe only wastes accepted into a scheduled activity and remove any exported from the installation. The assessment shall be submitted for approval by NRW in the form of a written report”.

This improvement condition has been included in order to rationalise Table S2.2, so that it only lists those wastes which are accepted by the listed activities cited in the table. Wastes generated by the installation are not required to be listed in the permit's waste acceptance tables. The Operator's response to improvement condition IC16 is required to be submitted by 30th October 2018.

IC17 requires the operator to:

“conduct an assessment of potential options to safely achieve sampling of the exhaust from the BOS Off-gas Superheater (emission point A66). The assessment shall be submitted for approval by NRW in the form of a written report”.

This improvement condition has been included to ensure that the access to this emission point is reviewed and that measures are implemented to allow safe monitoring at this location. The Operator's response to improvement condition IC17 is required to be submitted by 31st December 2018.

12. 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. The overarching operating techniques document for the installation has been updated as part of this variation to include operating techniques applicable to the HAA and Yard Zero areas.

12.1. Translating BAT into Permit conditions

Article 14(3) of the EC Industrial Emissions Directive (IED) 2010 states that BAT conclusions shall be the reference for permit conditions. Article 15(3) further requires that under normal operating conditions; emissions do not exceed the emission levels associated with the best available techniques as laid down in the decisions on BAT conclusions.

12.2. National and European EQSs

The environmental impact of the installation has been assessed against relevant EQSs, at the level of performance required by IED. We accept that the applicant's proposals are indicative BAT with the exception of Coke Oven Desulphurisation and Sinter de-dust. These have been assessed against the requirements of derogations set out in Article 15 of the Industrial Emissions Directive 2010 as described above and deemed satisfactory for the purposes of this variation. Section 17 of this document provides the basis for the derogation decisions.

The installation will not result in the breach of any EQSs. However a derogation has been granted under Article 15 of the Industrial Emissions Directive 2010 to deviate from the Environmental Limit Value for suspended solids within effluent as described in the BAT Reference Document (BRef). Again the basis of this decision is detailed in section 17 below.

13. Emission Limits

The following emission limits have been changed as a result of this variation:

- Emission point A2 – the Sinter Plant de-dust particulates emission limit has been changed from 30 mg/Nm³ to 10 mg/Nm³ in the Schedule 3(b) version of the table. The 10mg/Nm³ emission limit will apply from the end date of the derogation . This change has been made because once the agreed derogation has ended, and we expect a bag filter plant will be in place. The BAT-AELs for abatement with the current electrostatic precipitator is shown in Table S3.1 Schedule A and the bag filter BAT-AEL is shown in Table S3.1, schedule B, but with a footnote linking both to the current derogation against BAT 26 included in the permit annex.
- Schedules 3(a) and 3(b) – emission points A12 and A13 (BOS Converter Primary Gas Cleaning Stacks). These emission points are used infrequently and only when BOS Gas recovery is not in operation. As such we consider that emission limits are not required for A12 and A13, as there are no releases from these emission points under normal operation. We have therefore removed the previous emission limit values (ELV) of 115 mg/Nm³ for particulate matter.
- We have updated the ELVs for Boiler 3 in Schedule 3(b), table S3.7 following the completion of IC6. The new ELVs are dynamic ELVs set according to IED Article 40(1) and Part I Annex V (for existing plant).
- We have amended Table S3.9A in Schedules 3(a) and 3(b) to remove the LCP NERP Limits for particulate matter, sulphur dioxide, oxides of nitrogen, as the National Emissions Reduction Plan (NERP) came to an end in 2015 and 2016 saw the introduction of the UK Transitional National Plan (TNP) – see annual limits in Table S3.9B. The NERP emission limits were for Service Boilers 4 and 5 stack, Boiler 5 (Margam A), Boiler 6 and Boiler 7 (both Margam C) and the Mitchell Boiler (Margam B), which are all existing power plant assets.
- We have removed Table S3.9B from Schedule 3B, as the table no longer applies following the end of the UK TNP on 1st July 2020.

- Schedule 6 – Interpretation. In bullet point (b), we have deleted the word “no” relation to water vapour correction for emissions from non-combustion sources. This is because the BAT-AELS in the European BREF notes are set for dry gas. As such under the BREF, the monitoring results do need to be corrected for water vapour, whereas historically, sector guidance stated that there should be “no” correction for water vapour.

14. Monitoring

We have decided that monitoring should be carried out for the parameters listed in Schedule 3 using the methods and to the frequencies specified in those tables. These monitoring requirements have been imposed in order to demonstrate that the relevant abatement and discharge equipment is working in accordance with assumptions.

For emissions to air, the methods for continuous and periodic monitoring are in accordance with the Environment Agency’s Guidance M2 for monitoring of stack emissions to air.

Based on the information in the Application and the requirements set in the conditions of the permit we are satisfied that the monitoring techniques, personnel and equipment employed by the Operator will have either MCERTS certification or MCERTS accreditation as appropriate.

Several amendments have been made to Schedule 3 during this determination in response to permit reviews undertaken by both Tata Steel and Natural Resources Wales Operations Teams. These changes have been made in accordance with the instruction from the applicant to consolidate their permit. These changes are explained below:

Schedule 3 in variation V015 consisted of 4 tables described as schedules 3(a), 3(b), 3(c), and 3(d). Of these, tables 3(a) and 3(b) consisted of limit values applied for an interim period ending in December 2016. Hence only schedules 3(c) and 3(d) were in force. As requested, schedules 3(a) and 3(b) were removed from the permit and tables 3(c) and 3(d) re-named as 3(a) and 3(b) respectively

Schedule 3 has been updated to correct several inconsistencies within monitoring requirements, notably reference periods for atmospheric sampling. Monitoring being undertaken by extractive sampling should include a reference period of an hourly average, the minimum time period for sampling for most extractive standards being

half hourly. Reference periods have been amended thus for atmospheric emission points A55, A56, A6, A7, A38, A39 and A53 (for both SO₂ and NO₂).

In addition, we have amended the reference period for all emission points to air subject to discontinuous particulate matter monitoring under BS EN 13284-1 to “hourly mean” for consistency throughout the permit.

Similarly, continuous monitoring to the standard BS 14181 should have a reference period “Daily Mean”. This has been applied to emission point A1 in reference to SO₂.

We have removed Emission Point A22 as part of this variation, following confirmation from the Operator that the flues for emission points A21 and A22 are now combined as A21.

Emission points A35 and A36 referring to the coal injection dryer have been removed from this variation. As per the application the coal injection dryer has been decommissioned and removed from the installation.

The requirement to monitor emissions from A42, A43 and A44 has been removed as these emission points are pressure release vents, which for safety and practicality reasons are not required to be monitored by NRW guidance.

Following completion of Improvement Condition 3, emission point A54 (Morfa Coke Ovens batteries) has been allocated limits, a monitoring methodology, reference periods and monitoring frequencies. In setting these limits we have had regard to the prescribed BAT Associated Environmental Performance Levels (BAT-AEPLs) and fugitive emission monitoring methods outlined in the revised Iron and Steel BAT Conclusions (2012).

The requirement to monitor for vanadium in air has been removed from all monitoring points subject to the Large Combustion Plant. This legacy monitoring requirement was not carried forward from the Large Combustion Plant Directive into the Industrial Emissions Directive. Hence there is no basis to require vanadium monitoring.

Emission Limit Values (ELVs) for the Service Boilers (emission point A50) have been corrected for particulate matter from 20 mg/Nm³ (monthly) to 40 mg/Nm³, and 24 mg/Nm³ (daily) to 48 mg/Nm³. These corrected limits are in line with the Transitional National Plan (TNP).

Both Boiler 5 (emission point A51) and the Mitchell Boiler (emission point A53) are less than 100MW thermal input rating outlined in the revised Large Combustion Plant (LCP) BAT Reference (BREF) document, therefore monitoring for SO_x and

NO_x has been amended from continuous to quarterly hourly mean obtained during periodic monitoring in both versions of Table S3.7 (Schedule 3a and 3b).

We have removed the requirement to monitor the Mass Emission Factors (MEFs) at emission point A54 as part of this variation. MEF was the previously used method of monitoring emissions from coke pushing operations. The revised Iron and Steel BAT Conclusions (2012) do not specify an emission limit for coke pushing operations and we have therefore removed the requirement to monitor MEFs at A54. The rationale for this is further described and agreed in NRW's EPR Compliance Assessment Report 6103 issued on 20th April 2016.

The monitoring methodology for visible smoke from A55 was mistakenly omitted from the previous iteration of the permit. This standard reference method has been re-added to V016 and the method updated to BS2742:2009.

Sampling of emission point A66 has been removed from schedule 3(a) on safety grounds. Tata Steel has argued it is unsafe to sample the location at present. The requirement to monitor at this emission point has been retained in schedule 3(b) however and Improvement Condition IC18 has been added to the permit requesting a review of the access to this emission point and implementation of measures to allow safe monitoring at this location.

With regards to water monitoring, Tata Steel's application included a request for a derogation from the suspended solids limit for the principal outfall W1 as discussed above. As a result of the granting of this derogation, the emission limit for suspended solids as described in table S3.8 for the W1 emission point has been revised to 150 mg/l, which was the emission limit in the previous version 14 (V014) of the permit.

Also within the application was a request from Tata Steel to remove the monitoring and reporting requirement for Biological Oxygen Demand (BOD) as the readings taken to date have been well below ELV thresholds, and the cost of the test is prohibitive. Whilst the principle argued by the applicant that the Chemical Oxygen Demand (COD) would always be greater than the BOD, there remains the requirement within the BAT conclusions to monitor BOD from coke oven effluents. Note 2 to table S3.8 provides for this requirement by stating that if any of the monitoring at the W1 point is removed, then monitor will be required at an internal emission point, i.e. a sample point at which the effluents from a scheduled activity join those of other scheduled activities within the installation. Hence, it was communicated to Tata Steel that should the requirement to monitor BOD at W1 be

removed, monitoring would still be required at W6 (Coke Ovens effluent sampling point). In an email dated 22nd December 2017 Tata confirmed they will not pursue the removal of BOD for this variation, but will discuss it with their NRW Regulating Officers post-variation.

Similarly, the application argues that the monitoring of sulphides and chromium are unnecessary on the basis that sampling and analysis conducted over a year has shown little evidence of their presence above the limit of detection at the W1 outfall. Similar to BOD however, if Chromium and Sulphides were not monitored at W1 their monitoring requirement would default to emission points W8 (BOS plant) and W6 (Coke ovens) respectively. Email correspondence with Tata Steel dated 22nd December 2017 confirms that the applicant will not pursue the request to remove these species from the monitoring requirements at W1 until after the variation has been issued.

As requested in the application the analysis standard for oil and grease at the Abbey Beach Outfall (emission point W3) has been updated to SCA blue book 77 ISBN0117517283. This is in line with guidance M18 on aqueous sampling and analysis.

In Schedule 3a & 3b, we have amended Table S3.8 by removing the flow and temperature monitoring requirements for emission point W4. The monitoring approach and parameters for this emission point have been updated in line with the information given in Compliance Assessment Report 6103, issued on 20th April 2016. We have also changed the monitoring frequency for suspended solids at W5 from “background daily, discharge monthly” to “background weekly, discharge weekly” in line with the agreed approach outlined in the same Compliance Assessment Report.

The requirement to monitor at point W9 has been removed in line with the application. W9 was an upstream sampling point aiming to work out a background to enable the setting of appropriate monitoring requirements for suspended solids at W1. As the derogation of the IED limit for suspended solids at W1 has been granted, it is appropriate to remove the requirement for monitoring at W9.

Process monitoring table 3.10 has been amended to note that the requirement to record the Environmental/Operational parameters related to throughput needn't be made quarterly, and this has been amended to annually which harmonises this monitoring requirement with other annual reports.

We have removed the definition to “Calendar Monthly mean” from Schedule 6 “Interpretation” of the permit, as all references to this in Tables 3.7 (schedules 3a and b) have been changed to “Monthly mean” in line with Transitional National Plan requirements.

Further to the derogation request for the secondary de-dust system at the Sinter Plant as described above and in the application, a bag filter plant is proposed to replace the electrostatic precipitator by June 2020. Hence the derogation permits the maintenance of the emission limit value of 30 mg/Nm³ until July 2020, at which point it will default to the emission limit value associated with Bag Filter plants in BAT conclusion 26(ii), namely 10 mg/Nm³.

15. Reporting

We have specified the reporting requirements in Schedule 4 of the Permit to ensure data is reported to Natural Resources Wales in a timely manner to ensure compliance with permit conditions and to monitor the efficiency of material use and waste recovery at the installation.

We have also added permit condition, 4.2.7, for the purposes of capturing UK Transitional National Plan (TNP) reporting requirements. Condition 4.2.8 applies to all LCPs and will kick in from 1st July 2020 following the end of the UK TNP.

In reporting table S4.3, we have added “Annual Fuel Usage for each LCP” at the request of the Area Compliance Team. This parameter has historically been reported as part of LCP Reporting Form AR1. Table S4.3 in EPR/BL7108IM/V015 required that this parameter be reported as “Natural Gas Usage” in MJ. This information is now requested to be reported in TJ, to make the reported figures themselves shorter and therefore more manageable.

We have updated the reporting forms required by table S4.4. Some of these are national UK TNP (LCP) forms which weren’t agreed at the time V015 was issued. We now have agreed templates to use and the following forms have been retained:

IED AR1

IED RTA1

IED HR1

IED CEM

Form Air (TNP allocation)

Form Air (discontinuous monitoring)

TO1N

TO2N

Form AAE1 is no longer valid and has been superseded by AR1, so has been removed from Table S4.4. Finally, we have added form IED CON1 to table S4.4, which covers quarterly reporting of SO₂, NO_x and dust concentrations for the utility boilers.

16. Operator Competence

16.1. Environmental Management System

The Applicant has stated in the Application that they operate an Environmental Management System (EMS) certified to the international standard ISO 14001, that meets the requirements for an EMS in our “How to comply with your environmental permit guidance”. The Applicant submitted a summary of the EMS with their application. The applicant has an EMS which is certified to ISO14001. The scope of this EMS covers the activities currently permitted to be operated by Tata Steel UK.

The additional waste activity added by this variation is to be managed in line with the integrated site’s environmental management system. Specific waste management processes are described in the application document “Report 3: Summary Environmental Management System”. This document includes the controls placed on the waste being received into the waste activity including actions to take in the event of a non-compliant waste. Furthermore the document explains the additional control that will be in place to ensure the wastes are treated to meet end of waste requirements, namely via Factory Production Controls in line with the WRAP Quality Protocol on the production of aggregates from waste, and the Aggregate from Waste steel Slag Quality Protocol. These operating techniques have been included in table S1.2 of the consolidated permit.

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

16.1.1. Accident management

The Installation is a top tier COMAH facility. The continuing derogations for suspended solids, COG de-sulphurisation and sinter de-dust are not considered to

change the accident management risk as they are a continuation of the current situation already managed by the installation.

The additional risk incurred by the additional waste activity has been accounted for under the Tata Steel Environmental Management System which extends to cover the process.

17. Derogation Extensions

The decisions regarding derogations of Article 15(4) of the Industrial emissions Directive 2010/74/EU are discussed below:

17.1.1. *Sinter Plant De-dust*

The reviewed permit issued on 20th April 2015 includes a time-limited derogation from the requirement to achieve the BAT-AEL for secondary emissions from sinter strand discharge, sinter crushing, cooling, screening and conveyor transfer points (BAT 26). This derogation was granted on the basis that making improvements to the existing electrostatic precipitator to consistently achieve the BAT-AEL by the default date of March 2016 would be disproportionately costly compared to delaying the improvements to the autumn of 2016 to coincide with a planned sinter plant stoppage to refurbish the sinter cooler.

However, it is now evident that the sinter cooler requires more extensive remedial work than originally envisaged and the budget and timescale for this project have therefore increased significantly. To maintain the synergies and cost savings of undertaking major work on the secondary dedusting abatement and the sinter cooler during a single lengthy stoppage, it is now proposed to further delay improvements to sinter plant dedusting.

Between December 2013 and 2015 the annual average concentration is below the BAT-AEL for electrostatic precipitators and the majority of the daily averages are also below the BAT-AEL, but nevertheless the monitoring results demonstrate that emission control needs to be improved and some daily averages exceed the AEL.

Does the request contain the information required to assess against Article 15(4) of the IED? - Yes

Is there a cost-benefit analysis? - Yes

Are there geographical or local reasons for derogation? - No

Are there technical reasons for the derogation? – Yes

Technical Reason 1: The configuration of the plant on a given site, making it more technically difficult and costly to comply. Until the sinter cooler is operating effectively, the need to spray water onto the sinter on occasion to effect additional cooling may lead to technical difficulties with the proposed new bag filter as high humidity air is drawn into the extraction system around the cooler. If a bag filter were to be installed prior to the sinter cooler improvements, there is a significant risk that the high humidity would cause the bags to blind, reducing the efficiency of extraction, or in the worst case causing significant damage to the bag filter.

Technical Reason 2: The practicability of interrupting the activity to install improved emission control. Interrupting sinter production on two separate occasions leads to significantly greater costs than combining the stops to undertake major work on the secondary dedusting abatement and the sinter cooler simultaneously.

The effect of reducing the excess emissions upon other pollutant emissions

A positive consequence of the proposed delay is that the extra time will allow the existing electrostatic precipitator (ESP) for sinter plant secondary dedusting to be replaced by a new bag filter, rather than refurbishing the existing ESP as would be the case if the improvements had to be achieved by March 2016. In the long term this will result in more effective abatement and lower dust emissions to the environment from the installation.

Is the derogation time limited? - Yes, until 2020

Does the cost benefit analysis use recognised figures for harm where they exist? - Yes, Both the UK and European costs of harm have been used to evaluate the benefits that can be achieved

Does the cost benefit analysis use costs that can be verified? – Yes. The costs used have been verified against similar sized projects in industry and using web based information. The costs used in the assessment are deemed to be an accurate reflection of the possible costs.

NRW economist's statement - The original CBA ratio for the sinter plant was 0.81, which is fairly close to unity but that option is no-longer available. Looking at the marginal abatement and damage costs for the proposed extension they seem satisfactory at 0.53.

The information supplied suggests the derogation can be granted as the costs are disproportional to the benefits.

17.1.2. *Coke Oven Gas De-sulphurisation*

The reviewed permit also includes a time-limited derogation from the requirement to achieve the BAT-associated standard for the H₂S content of Coke Oven Gas (BAT 48). This derogation was granted on the basis that designing and building a coke oven gas (COG) desulphurisation unit at Port Talbot (along with other improvements to the by-products plant that would be necessary for the effective operation of COG desulphurisation) was too extensive a task to be achievable before the default deadline of 8th March 2016. It was shown to be disproportionately costly to meet the standard (by suspending coke production in March 2016 and rebuilding the coke ovens to incorporate COG desulphurisation) compared to continuing to operate with H₂S levels above the standard until all the required improvements could be completed.

However, the scope, costs and timescales of the required improvement work have increased since the initial assessment and it is now proposed to further delay achievement of the BAT-associated standard.

Does the request contain the information required to assess against Article 15(4) of the IED? - Yes

Is there a cost-benefit analysis? - Yes

Are there geographical or local reasons for derogation? - No

Are there technical reasons for the derogation? – Yes. Technical Reason 1: The configuration of the plant on a given site, making it more technically difficult and costly to comply

Because the by-products plant at Port Talbot was not originally designed for coke oven gas desulphurisation, the performance of some of the other units within the plant needs to be improved to ensure that the desulphurisation unit can operate effectively. In particular, tar and ammonia levels in the coke oven gas must be reduced and primary cooling improved, necessitating additional capital expenditure and thereby making it costlier to install COG desulphurisation at Port Talbot than at a typical coke oven plant.

Technical reason 2: The practicability of interrupting the activity to install improved emission control.

Coke oven batteries of the type used at Port Talbot are designed to be gas tight when carefully heated up from new and held constantly at the high temperatures required for coking. In this way, expansion of the materials of construction seals

gaps between bricks to create gas-tight walls, door jambs are sealed to the walls and the structure is held rigidly by the tie bars. Mothballing the coke ovens to allow time for the construction of a COG desulphurisation plant would result in the structure cooling and losing its integrity. There are no examples world-wide of a coke oven battery of this type being brought back into operation after production has ceased. Thus if coke production were to be suspended, the only feasible option for the continuation of cokemaking would be to completely rebuild the ovens at a cost of several hundreds of millions of pounds. This rebuild would occur earlier than in the normal investment cycle and so would represent a considerable additional cost to the business.

During the time when the coke ovens were being rebuilt, it would be necessary to purchase coke from external suppliers and also to significantly increase the import of natural gas onto the site to replace the energy in the coke oven gas. This would further increase costs compared to continued operation of the existing plant, which would not be sustainable for the operation.

Technical Reason 3: The effect of reducing the excess emissions upon other pollutant emissions.

Replacing coke oven gas with natural gas whilst rebuilding the coke ovens to achieve BAT may increase carbon dioxide emissions from other processes on the integrated steelworks as the CO₂ intensity of natural gas is greater than that of COG.

Is the derogation time limited? - Yes, until 2024

Does the cost benefit analysis use recognised figures for harm where they exist? – Yes. Both the UK and European costs of harm have been used to evaluate the benefits that can be achieved

Does the cost benefit analysis use costs that can be verified? - Yes. The costs used have been verified against similar sized projects in industry and using web based information. The costs used in the assessment are deemed to be an accurate reflection of the possible costs.

NRW economist's statement - Tata provide a central case with outliers for both the capital cost of replacing the coke ovens and the increased costs of buying in coke and natural gas during the process. NRW's calculation for the central case of both distributions is more supportive than the information supplied by Tata. For the lower IGCB damage cost for SO₂ the central CBR is 0.17 with a range between 0.12 and

0.29 [Tata quotes 0.21 with a range 0.15 to 0.38], for the higher Eunomia damage costs [which Tata do not quote save for a central estimate of 0.56] it is 0.50 with a range between 0.35 and 0.88.

The information supplied suggests a derogation can be granted as the cost is disproportionate to the benefits.

BATc 49 is linked to BATc 48, so the derogation for Coke Oven Gas De-sulphurisation means that BATc 49 cannot be applied to the permit until that technology is installed.

17.1.3. *Suspended Solids*

The new Environmental Permit for Port Talbot steelworks issued in April 2015 set the limit for the concentration of suspended solids in the liquid effluent discharged through the Long Sea Outfall (LSO) as 20 mg/l above the background suspended solids level. An Improvement Condition in the permit required Tata Steel to propose a methodology for establishing a suitable background concentration; a response to the Improvement Condition was submitted in July 2015. It was evident from the submission that due to the size of the site and the number of naturally occurring sources of suspended solids feeding into the site, establishing a background level was not possible. Tata were then advised to seek a derogation. In this case it is the local environmental conditions that give rise to the disproportionality between the costs and the benefits of meeting the BAT-AEL. The effluent is discharged into Swansea Bay, where significant concentrations of suspended solids are naturally found, and this means that the benefit of reducing the suspended solids load in the discharge is negligible. The cost of reducing the suspended solids concentration in the Long Sea Outfall is estimated to be more than £20M.

Does the request contain the information required to assess against Article 15(4) of the IED? - Yes

Is there a cost-benefit analysis? - The costs have been included however there are no published damage cost available to assess the benefits. The benefits have been assessed against the suspended solids in the receiving water and the possible benefits to the ecosystem of reducing these in the effluent.

Are there geographical or local reasons for derogation? A study undertaken on behalf of NRW investigated the sources and quantities of sediments suspended in the waters of Swansea Bay – defined for this purpose by a line drawn between Mumbles Head and Sker Point, just north of Porthcawl. Paragraph 3.4 of the report

cites two different estimates of the total fluvial sediment input to Swansea Bay – 40,500 tonnes per year or 75,000 tonnes per year.

When further analysis of the sediment leaving site is carried out the discharge from the Long Sea Outfall contributes 2 to 3% of the total estimated suspended solids input to Swansea Bay. However a significant proportion of this is material would have reached the bay naturally if it had not passed through the steelworks' drainage system. A crude estimate is that the steelworks processes may only be contributing around 350 tonnes per annum, which is less than 1% of the total suspended solids load entering the bay.

Are there technical reasons for the derogation? - No

Is the derogation time limited? - No. The emission and the impact on Swansea Bay is unlikely to change therefore no environmental benefit can be achieved.

Does the cost benefit analysis use recognised figures for harm where they exist?

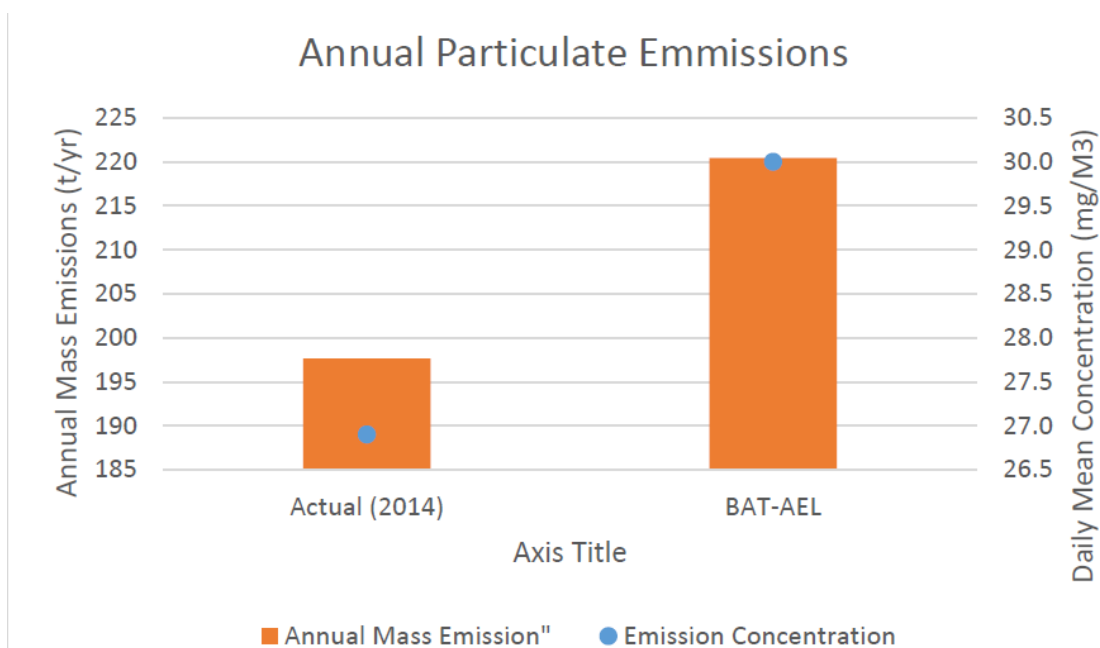
There are no recognised costs of harm for suspended solids, however Tata have looked at ecosystems services and attempted to evaluate the emissions in terms of the recognised ecosystem services listed in the United Nations Millennium Ecosystem Assessment report , there is no obvious link between a small increase in the suspended solids load entering Swansea Bay and any of the ecosystems services listed and this implies that this approach would not place a great value on reducing the suspended solids concentration in the Long Sea Outfall. The total cost of a project to reduce the suspended solids load is more than £20 000 000.

17.1.4. NRW Technical assessment

If we allow the derogation will there be a breach of Environmental Quality Standard?

There will be no breach of EQS because of these derogations.

The sinter plant dust emissions comply with the BAT AEL when you compare the annual emissions, however the daily average concentrations as required by the BAT AEL is exceeded on occasions. The graph below illustrates the emissions against the AEL.



Does the derogation breach any applicable limit in the annexes to the directive? The limits in the annexes to the directive do not apply to these release points

Will the derogation result in any significant pollution and is there a high level of protection being achieved? The current permit is designed to be protective of the environment and therefore no significant pollution will occur because of these derogations, the current limit in the permit will continue to apply throughout the derogation period.

Air quality modelling has been carried out on the releases of particulate and SO₂ and the current levels are deemed to be protective.

The particulate release from the sinter plant contains 46% PM₁₀ and the release only contributes to 2% of the overall particle emission from the Steel works, as this emission is a small contributor to the overall particulate release and is compliant with the limits when looked at over a wider timescale a high level of protection will remain throughout the derogation period.

17.1.5. NRW recommendation.

- Allow the derogations for particulate matter from Sinter plant until 31st October 2020.
- Allow the derogation for SO₂ until 31st October 2024
- Allow the derogation for suspended solids in the effluent for the lifetime of the plant, unless evidence emerges that an environmental benefit can be achieved by reducing the current load into the receiving water, the possible building of the

Swansea bay tidal lagoon may have an impact on this, this will need to be assess during the implementation of the next Iron and Steel BRef.

18. OPRA

The installation's OPRA profile has been updated to reflect the addition of the HAA 5.4 A(1)(b)(iii) listed activity. The waste input table has also been completed to reflect the fact that the HAA is permitted to treat 350,000 tonnes of non-hazardous (non-biodegradable waste) per year and Yard Zero is permitted to treat 60,000 tonnes per year, which equates to 410,000 tonnes of non-hazardous, non-biodegradable waste in total.

The OPRA score (without compliance rating) has increased from 875 to 897 as a result of this variation.

END OF DECISION DOCUMENT

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Natural Resources Wales
Cambria House
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Cardiff
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0300 065 3000 (Mon-Fri, 8am - 6pm)

enquiries@naturalresourceswales.gov.uk
www.naturalresourceswales.gov.uk

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